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Young adults and Corona

The influence of corona on the daily
lives of young adults

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Abstract

This research looks into the influence of corona on young adults (18-35). The focus is on the following concepts: well-being, corona measures, social interactions, (type of) public space, use of (public) space and living conditions. The research question is as follow: *How does corona influence the daily lives of young adults living in the Netherlands*. It is important to get more insight in this, because it can help professionals, mainly planner, help plan for young adults in the future. This research gives insight into how young adults are affected by a pandemic, how they use space and what their perfect public space would look like. To answer the question an online survey and snapshot observations in public spaces were used. Looking at the results, it can be said that well-being and social interactions went down for young adults during corona. Overall, the use of public space went down, but green spaces had an increase in usage. The perfect public space for young adults would be a quiet, open, relaxing and green space with good seating and opportunities to buy food and drinks.

Keywords: Well-being, Corona measures, Social interactions, Living conditions, Use of (public) space, (Type of) public space.

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1 Introduction

1.1 Background

“Life is less fun since the corona crisis: ‘young adults keep getting more down’” (Nieuwenhuis, 2020)

In December 2019 the first cases of the coronavirus were reported in Wuhan, China (WHO,2020). It did not take long before the rest of world had to deal with the disease as well. In February 2020, the first case of Covid-19 was found in the Netherlands (RIVM, 2020b). The cases in the Netherlands are going up and down, with a small peak in March 2020 and cases going up rapidly from September 2020 onwards (see figure 1). Life looked very different because of the corona pandemic. The quote above is from the AD, a Dutch newspaper, in September 2020. During the corona crisis, especially young adults seem to struggle. There are of course a lot of factors which contribute to this apart from life being less fun. A big part is the fact that this age group is generally very dependent on their social life and they are just starting to build and expand their social network. Which is very hard to do during corona (RIVM, 2020a).

To battle the disease the Netherlands used something called an intelligent lockdown. It used specific measures at different times in the corona pandemic, like closing restaurants, schools and gyms and a curfew. But also for example the urge to work from home, wearing a mask in public buildings and keeping a 1,5 meters distance (Rijksoverheid, 2020).

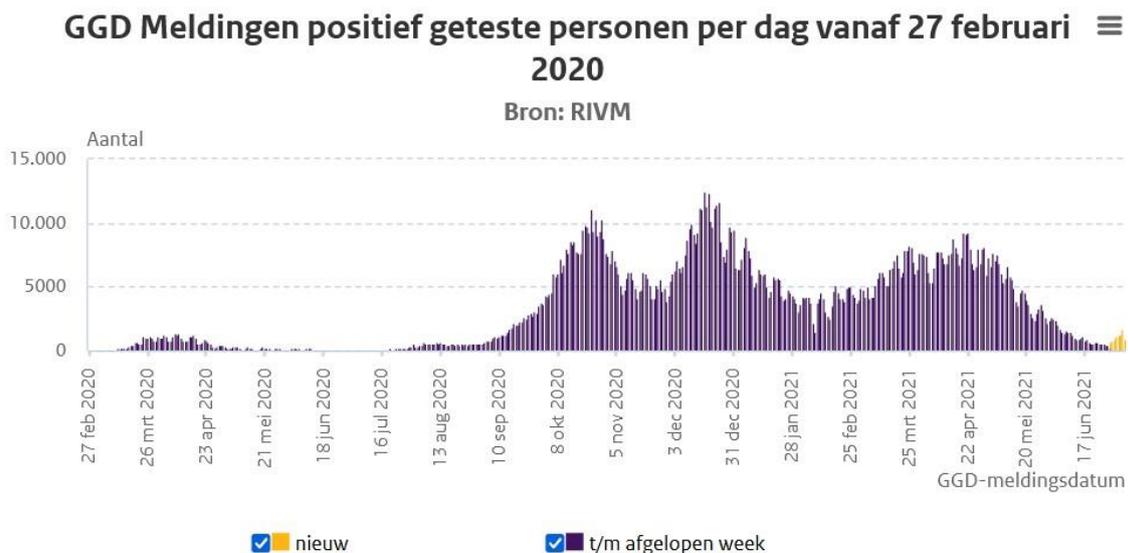


Figure 1 Corona cases in the Netherlands (RIVM,2021)

The Pandemic has had a severe impact on society. Next to the obvious effect of people getting sick, hospitals being overloaded and people dying. Covid-19 also has indirect effects on the society. For example: the pressure on regular health care, lifestyles that were forced to change and the negative effects on social life. These impacts were felt more by certain community groups. In this research, the focus was on young adult (age 18-35). For this group the negative effect on social life and the changing of lifestyles especially played a big role (RIVM, 2020a). Clubs, bars and restaurants closed, so the nightlife had shut down. Meeting face to face with friends was a lot harder, because of the need to keep distance. A lot of meetings needed to be online. Next to this, education also switched to online for most of the pandemic, because universities closed. Education looked very different and for example internships or fieldwork was not possible. Because all of the above mentioned places closed down, it was also hard to meet new people and build new connections. Young adults were also affected in the way, that they might have lost their job because of corona. For example people working in the catering sector might have lost their job temporarily or permanent because the restaurants were closing. This could also lead to problems with affording rent. More on the social side, a lot of special life events like for example graduation, vacations or birthdays could not be celebrated or only in a small and different way. All the above mentioned things could really have an effect on the well-being of young adults (CDC, 2020)

Corona also changed how people use space and places in the city. Relating to the above mentioned movement to online environments, people spend more time in their private space. Public spaces and inner cities thus became a lot more emptier during corona, especially in lockdown times. A Gehl global survey found that 35% percent of their participants stayed at home all the time except for essential errands. The rest of the respondents reported to stay more close to home, so making more use out of neighborhood parks and the streets (Connor, 2020). Since some public spaces closed, it became clear how important public spaces actually are. Which is a case of you do not know what you are missing, until it is not there anymore (Sepe, 2021). Public spaces are important because they have the power to connect people (Gehl, 2021).

Like mentioned above, the Netherlands used an intelligent lockdown during the corona pandemic. The strictness of the corona measures taken, has been fluctuating throughout the pandemic. In this research, the focus will be more on specific measures relating to social interactions. There were four measures that related strongly to the interactions of people in their daily life's namely: social distancing (the 1,5 meter rule), the restriction of amount of people outside, the curfew and the restriction of visitations at home.

Social distancing

The social distancing rule was present in a lot of countries. In the Netherlands this meant keeping a 1,5 meters distance from each other. This rule did not apply for children until the age of twelve and youth younger than eighteen years old had to keep this distance from adults, but not from each other. There were of course some exceptions. This rule did not apply to people living at the same address. But also for things like people that were giving (medical) assistance, in transport vehicles and people practicing the so called contact professions like for example hairdressers and masseurs (Rijksoverheid, 2021).

Restriction of amount of people outside

A restriction for the amount of people outside was present in the Netherlands. There was a distinction between inside and outside, because the virus had less change of transmitting in the open air. The amount of people had been fluctuating throughout the pandemic ranging from only allowing groups of two people outside to making sure that groups did not exceed 250 people (specifically

looking at events). Once again with this rule there was the exception that the household was allowed to go outside even if this exceeded the maximum number. (Oisterwijk, 2021).

The curfew

In the Netherlands from January 23 2021 until April 27 2021 a curfew has been implemented. This meant that no one can be outside between 21.00 at night and 04.30 in the morning. Of course here were also some exceptions in play. One could be outside at the above mentioned times if for example it was an emergency or you had an employers statement (Rijksoverheid, 2021).

Restriction of visitations at home

The overall rule in these pandemic times was: do not have visitors over, if it is not necessary. This was of course very subjective, because what is necessary? Therefore there were also some clearer rules about the amount of people one could have over at the same time. During the pandemic this changed multiple times, fluctuating between 1 and 6 people at the same time. This excluded children of twelve years and younger (Rijksoverheid,2021).

Next to these four measures, what also really affected people social lives was that entertainment venues were restricted or closed. Especially places like bars and restaurants are places where people meet a lot of people, it is thus a place of interaction. Throughout the pandemic times, restaurants and bars have been restricted in the way of being allowed a maximum amount of people inside, only serving people outside and also having to close completely (Oisterwijk, 2021). The restaurants and bars closed on March 15 2020, then they were allowed to partly open again on June 1st 2020. On October 13 2020 they had to close again and on April 20 2021 they were allowed to once again partly be opened (RIVM, 2021b).

The data collection for this research took place between April 13th and June 3rd. Throughout this whole period the social distancing rule had to be followed. At the start of the research, the curfew was still in place, however, a softer version starting from 22.00, but as mentioned before, the curfew was lifted on April 27th. Next to this, at the start the restaurants and bars were closed and you had to have an appointment to go shopping. (drug stores and supermarkets excluded) and higher education was closed and took place online. On April 20th some changes took place. Restaurants could open their terraces during the day from 12.00 to 18.00. You could enter stores again without an appointment and higher education could open for one day a week again. From this point on, people could have two visitors a time at their home. Before this it was only one. On May 11th the restaurants could open their terraces from 6.00 to 20.00 (RIVM, 2021b).

1.2 Relevance and knowledge gaps

Corona is a very new and recent development. Not a lot of research has been done on the effect of corona on daily lives yet, for example regarding use of space and social interactions. Therefore a large knowledge gap is still present (Klerk et al., 2020). Also in the way how corona impacts the society and different communities. The aim of this study is to get an insight into how the daily lives of young adults are influenced by corona in the Netherlands. This study elaborates on the call of Lamker et al. (2020) to take a further look into specific communities. A similar study has been done on older adults from a Dutch and British perspective (Osborne et al., 2021). Likewise Jaarsveld (2020) also researched the effect on elderly, with special attention to the overall larger distance from the digital world and Gupta & Jawanda (2020) researched the impact of corona on children and their development. It is very important to get more insight into how corona impacts young adults, but also how this age group acts in corona times. From the outcomes of this research, it will be clear how

young adults were affected by corona, how they behave in public space and what their ideal public space would look like. This information could be used as a baseline for professionals, mainly planners, to use as a guideline for how to plan for young adults and what they find important. With this it would be the goal to make life fun again and lift up young adults spirits again.

1.3 Research objective and questions

The aim of this study is to get an insight into how the daily lives of young adults are affected by the corona pandemic. With daily lives, the focus is on aspects of well-being, social interactions, living conditions and types and uses of space. The study is focused on young adults since the impact of corona on this group is expected to be large, since as mentioned earlier they are the group that is most dependent on social interactions. They are still building and expanding their social network, which is very hard to do during corona times. Overall, corona is expected to have a negative effect on these social lives (RIVM, 2020a). And next to this, (public) space will probably be used differently (Connor, 2020).

The central question in this research is: How does corona influence the daily lives of young adults in the Netherlands? To get a better insight in this, the central question is divided into the following sub questions:

- How is the well-being of young adults in the Netherlands influenced by corona?
- How do young adults experiences the specific corona measures taken in the Netherlands?
- How much and in what setting are young adults having social interactions?
- How do young adults use (public) space before and during corona?
- How do the living conditions of young adults influence their well-being and social interactions?

To answer these question a survey and observation are used. The observations took place in different types of public space and a snapshot method was used, where a table was filled in each time (see appendix 2).

1.4 Outline thesis

The following sections of this research paper are structured as follows: First will come the theoretical framework, this section will first go into the literature review, where existing literature is discussed. This part is structured according to the most important concepts. After that the conceptual framework and the expectations will be discussed. In the next section the methodology is discussed, this includes the research strategy, the data collection, data analysis and ethical considerations that are taken. After this, one arrives at the Results section. This starts with a summary of the survey data. The rest of the results are structured according to the main concepts. In the results it is discussed what the research found and whether this was expected or not and whether this was in line with the literature from the literature review. The next section is a discussion of the findings that were not expected and it is speculated with the help of literature what possible reasons for these unexpected results are. The final section will be the conclusion, which consist out of the findings, a reflection about the research and recommendations for future research.

2 Theoretical framework

2.1 Literature review

In the next section previous literature will be discussed. This will be structured along some of the main concepts of this research, namely: Subjective well-being, Social interactions, (Type of) public space, Use of space and Living conditions.

2.1.1 Subjective well-being

As has become clear from the quote at the start of this research, young adults are getting more down because of the pandemic. It is important to know why this is and what influences it. A high subjective well-being has a lot of benefits and is of great importance for a happy life. A person with a high subjective well-being shows less problematic behaviors and has a greater resilience to stressors (Laurence, 2019). A high subjective well-being thus is good for mental health. Almost 70 percent of mental disorders begin before the age of 25 (Brenner, 2019). This means that well-being is a very important concept when talking about young adults and it is important to support well-being.

A lot of factors can have an impact on ones well-being both in a positive and a negative way. Communities people live in are for example one of the concepts that can have a lot of influence. The community one lives in relates to the relationships within the neighborhood. So the interactions between neighbors play an important role. Laurence (2019) found that living in a disadvantaged community leads to a lower subjective well-being. The reason for this is that in these disadvantaged communities, there are a lot of negative social relations. This means that there is social contact, but in a negative way. So, for example arguments and conflicts between neighbors. To achieve a higher well-being it is important that there are social interactions, but they need to be in a positive way. Especially for youth this is important. Higher positive social relations in the neighborhood leads to higher trust between neighbors. Next to these social relations, the neighborhood community as a whole is also of high importance for ones well-being. Living in a good neighborhood community leads to a higher connectivity in the neighborhood, for this the quality of the relations is also very important. This together can influence happiness in later life (Laurence, 2019). However, for this to increase well-being one does need to spend considerable time in the neighborhood. Therefore, specific groups usually have a higher connection to the neighborhood, because they have more local contacts. These are usually people with limited mobility and thus who are more neighborhood dependent. These are for example elderly, low-income groups, unemployed or single-parent families (Hoogerbrugge & Burger, 2018).

Next to the influence of the community, who you spend time with also has an impact on ones well-being. Hamermesh (2020) looked at married and single people and found some clear differences. For married people well-being increased when they spend time with their spouse, friends or other people. This did not happen when they spend time alone or with other relatives (family besides spouse). But when looking at single people only other relatives had a positive effect on their well-being. Time spend alone, with friends or other people decreased their well-being. So not only does it matter who you spend time with, the effect also depends on your own situation (whether you are single or not). The finding of Hamermesh (2020) is however striking, since he found that for singles spending time with friends decreases their well-being. Ross (2019) found something else. She states that friendships do not take the center stage for people who are in a relationship, but that they are of great importance for single people. Friendships are the main source of support, connection and joy.

In corona times, looking purely at the findings of Hamermesh (2020), it would mean that the well-being of married people went up, since they probably now get to spend more time with their spouse because of the lockdown measures. On the other hand, the well-being of singles most likely has gone down, because more time is spent alone, although this also depends on their living situation of course. Well-being is very affected by social interactions. According to Rath and Harter (2010), for someone to have a good well-being, one needs 6 hours of social interaction per day. Since social interactions have changed during corona mostly negatively and probably decreased, well-being also changed and likewise mostly negatively (Fontana et al., 2021).

Looking at the research of Klerk et al. (2020), it can be observed that one in three people in the Netherlands is feeling more down due to corona and thus have a decrease in well-being. This is really visible among youth. This finding correlates with the strictness of the corona measures and the amount of infections. When the infection rate is higher and the corona measures taken are stricter, more people are feeling down. The fact that young people are having more negative emotions than for example elderly people, might be because they are more dependent on their social life and this is the time when they are building their social network, which is now difficult to do, since it is more challenging to have social interactions especially with new people (Zhu et al., 2021).

For this research well-being is defined as how one feels about their life as a whole. This definition is based on the research of Chatman et al. (2019) who looked into subjective well-being by asking people how they experience their own quality of life.

2.1.2 Social interactions

For social interactions, Berg et al. (2017) makes the distinction between quantity of interactions and quality of interactions. The quantity of interactions relates to the amount, so this is every interaction one has with other people, this can range from a quick hello on the street, to deep, meaningful conversations with family or friends. This then nicely relates to quality of interaction, which relates more to the content of the interaction. This includes for example the length of the interaction, but also the meaningfulness. Relating to the quantity, personal and household characteristics are very important. This is very logical, because if one for example lives with people, the amount of daily social interactions will be much higher, than for someone who lives alone. Relating to the quality, the longer a social interaction is, the more important and meaningful it is for people. In previous research it was found that the quality of social interactions is more important for social life than the quantity (Pinqart and Sørensen, 2000). But of course for both quality and quantity it is very important that the social interactions can take place. A few factors improve the chance for social interaction. What was found is that walkability in the neighborhood is very important. If the walkability is high, the likelihood of people being outside and on the streets is also higher and thus there is more opportunity for social interactions. Furthermore, social activities are also very important, because these give opportunities for and provide social interactions. Next to quantity and quality, social interactions can also be distinct in the way of prearranged, routine and spontaneous interactions. Previous research found that prearranged interactions are deemed the most important and spontaneous the least important (Berg et al., 2017).

Next to this, Amati et al. (2018) found that the larger ones social networks is and the more social relationships one has, the higher the well-being. So more people in ones network would mean that that person would be happier. However, when ones network has a large portion of strangers and acquaintances, the well-being goes down.

This relates to the concepts thick and thin trust in the research of Putnam (2000). Thin trust relates to the interactions with strangers and acquaintances and thick trust relates more to the interactions with friends and family. Thick trust is “trust embedded in personal relations that are strong, frequent and nested in wider networks”. Thin trust is very handy for expanding ones network, but thick trust is in general more meaningful and important for people and thus might have more effect on well-being.

Due to the corona measures, social interactions, especially face to face contacts, have gone down. This can lead to a lot of negative effect on peoples lives. Lower interactions can lead to higher levels of stress, anxiety, depression and alcohol consumption (Fontana et al., 2021 ; Laurence, 2019). This can especially be observed when looking at people living alone. When living alone one has a greater risk of being socially isolated. This risk has only become greater in corona times, because of needing to stay at home and thus being alone (Nakagomi et al., 2020). When living alone, ones social networks and interactions thus play an even more important role, since they are missing the daily social interactions with for example parents or other people that one might have in their household (Oshio et al., 2019). Just like living alone some other factors can be observed which are more prone to the effect of corona on social life and well-being. Jia et al. (2021) found that rural areas are especially struggling because of the disrupting in public services and that females are struggling more because of corona measures than men. This is because females are in general more vulnerable to anxiety, feelings of panic, boredom and frustration, and confidence loss. Next to this good housing, living condition and the access to green space was considered very important. This research was gathered in China, so there might be a different finding in the Netherlands.

Blokland et al. (2020) found that face to face contact was used a lot to discuss personal challenges and this usually took place outside of the house. However this became very hard in times of corona, since a lot of the places where people used to meet, like restaurants and bars were now closed. To try and cope in these corona times, people are trying to replace the face to face contacts by digital contact. However this is really hard and people found that having these conversations digitally was not a good replacement and thus other places should be found. Buchel et al. (2020) also found that phone calls should not be seen as a replacement for face to face contact, but that it has a more complementary nature. A problem that might arise now, is that indeed people do not find digital interaction a good replacement and thus you might run the risk that people will not follow the rules anymore. It also really depends on what ones own view is on corona. If people are not scared for the disease for example, there are more likely to not follow the measures (Li et al., 2021).

In this research, with social interactions everything that is more than just saying hello to people is included.

2.1.3 (type of) Public space

Public space can be defined in many different ways. In the paper of Francis et al. (2012) it is mentioned that true public space is accessible to all groups, providing freedom of action, temporary claim and ownership. This definition is really focused on the ownership of a place. However in the Netherlands the public-private ownership line is very blurry in this way. With this definition places like shopping malls, community centers and schoolyards might not be included.

Another definition is more focused on public access rather than public ownership. This means that the focus is not on if the place is publicly owned, but if it is open to all. In this way public spaces include: urban parks, neighborhood parks, playgrounds, plaza’s, town/market squares, sidewalks and

streets, shopping malls, community centers, schoolyards, but also places like restaurant and bars. (Francis et al., 2012). For this research, the definition based on public access is used.

Public spaces are deemed to be very important for quality of life and well-being (Duivenvoorden et al., 2021). The type of public space and the maintenance of these spaces plays a big role in this. Unattractive and places with neglected maintenance and safety issues have a negative effect on well-being and thus these places are used less by people. The distance to a public space also plays a role. The longer the commuting distance, the less the place is used (Jens et al., 2021).

Green space also plays a big role relating to well-being. These places are mostly used to recreate, play sports, relax, learn from nature, meet with friends and family and overall enjoying the day. These are very good places for social interaction (Enssle et al., 2020). The higher the quality of green in a park or place, the higher the amount of visitations and social interactions will be. The length of the visit to a place will also be longer when there is green space present. So overall, it can be said that green space has a positive effect on social interactions and well-being (Yang et al., 2021; Aram et al., 2019).

When looking specifically at parks one can see that the presence of natural features, sport features, playgrounds, overall aesthetics and location is of great importance. There are also some amenities in parks that could enhance social interactions and thus are good to incorporate in parks. These are for example barbecue and picnic areas, good seating, a place for shade and shelter, but also places for organizing events in the park (Rivera et al., 2021). Overall it was found that larger parks were visited more often by people. This might be, because more of these amenities are found in larger parks (Yang et al., 2021).

When looking at market squares it is very dependent on whether there is an event taking place, than a lot more people are present. In the area where there is seating or trees present, there are also more people (Metro21, 2018). Overall, good squares are seen as sociable places (Zakariya et al., 2014).

However during pandemic times, it might be that these larger places are being avoided, because of crowding. Gehl (2020) researched public space and public life in Copenhagen in corona times. During the lockdown, downtown activities dropped magnificently especially at places like shopping streets. People stayed more in their local neighborhoods and made more use out of close-by public spaces, like playgrounds and neighborhood parks. These replaced the time spend in more larger 'popular' spaces, because these became difficult to use because of social distancing. After lockdown the activity in the city center went back to the normal amount. However, overall there were some changes visible. Local neighborhood places are more popular than before lockdown and public spaces are more used, especially by children and elderly. They were used more for play and exercise, but also more people were talking in the public spaces and thus there is more social interactions and people were more likely to reach out to strangers. Also observable is that walking and biking became more popular (Gehl, 2020). Since, at this point the pandemic is still going on, there is not a lot of further research about life after lockdown/the pandemic.

However, Pakoz et al. (2021) do have a prediction regarding life after the pandemic. They expect that in the future big squares and larger shopping malls will not really be planned anymore because they are too crowded. The focus will be more on larger numbers of smaller squares and public spaces. Next to this, the virtual space will also replace a part of the shopping and meeting, because that has also increased during the pandemic, although this was not a good replacement for leisure activity.

2.1.4 Use of space

Being in a public space can have a good effect on one's well-being. Saying hello to people and even only seeing people walking around can already have a positive effect. Seeing people socialize even without socializing oneself can make one feel happier. But also things like unexpectedly running into people in public spaces adds to well-being. This is mostly the case because otherwise one might not have seen these people, because they are for example not that close that they would meet up, but it is nice to see them and talk to them shortly about how things are going. So one can see that, next to the earlier mentioned green elements, the social and shared elements of a public space are also of great importance (Cattell, 2008).

Hatefishojae et al. (2020) found that public space should be exciting and safe to use, it should have proper facilities and it should be a place for social interactions. They found that in these places different amenities and environments stimulate different behavior. Physical features like for example a water scenery and proper seating stimulates people to stay in the public space longer. Places like playgrounds stimulate social interactions. This can be seen by the children because they are playing together, but also for example by the parents/caregivers who socialize while the children are playing. Every different type of public space also requires other things. For example in a subway it is good to have proper seating for people who are waiting, but it should also be a wide and open space, so that people can stop and interact. This is a completely different setting than for example a nice neighborhood park for walking. Here it is preferred to be a less open and wide space, but having more walking paths, which are also aesthetically pleasing, so it is nice to walk around in and have face to face interactions. Both these places enhance social interactions. However, from this it can be stated that in different types of places, different physical features are important to enhance social interactions.

Regarding use of space based on demographics, a difference can be observed between genders. Women tend to give more importance to safety and the presence of playground (Rivera et al., 2021). They tend to prefer more the so called 'back yard' experiences. They prefer the more private surroundings where they are not seen by others, these offer comfort and a feeling of safety and relaxation. On the other hand males prefer sport features and they take the size and location of the public space more into consideration. Men tend to prefer more the 'front yard' experiences. These are connected to the publicness and have more social interactions (Cao et al., 2019). However an exception of these 'back yard' and 'front yard' experiences is that when in larger public spaces, females indicate that they like to be seen, because the fact that strangers are present, in the sense that there are 'eye-witnesses' makes them feel more safe. So then they prefer to be in the more open spaces to feel more safe (Rivera et al., 2021).

When looking at what kind of people use what kind of places, it can be observed that people with strong neighborhood ties, spend more time in the public neighborhood spaces, like neighborhood parks and playground, but also the front drive and sidewalks/streets play a role. A demographic that is often seen to have strong neighborhood ties are middle-aged mothers (Cattell et al., 2008). Young adults tend to use the more larger public spaces, like urban parks (Cao et al., 2019). In contrary to this adolescents do not tend to use the park much (Rivera et al., 2021).

The use of a space also depends on who someone is with when being in the public space. Cao et al. (2019) states that when someone is alone, natural and green areas are preferred. But if they are with people a more urban settlement is preferred. Next to this, they define three types of social relationships. The first is an intimate pair. These are people who came in pairs to the park and have a close relationship. They like to use the more private areas in public spaces and are for example on

their phone together. The second type is an intimate group. This is a group of usually three or more and considered their relationship to be family like. These groups spend their time mostly by talking, sitting and using the park amenities. The third was called a social group. This is a group of two or more people and their relationship is more social. So, these can for example be neighbors, colleagues or acquaintances. These groups tend to play games or relax in the more open areas. The distances between people are smallest in the intimate pair group and largest at the social group. When people are alone or with two or three people something that is called the edge effect is happening. People prefer to stay at the edges of the public space and not in the middle of an open area. This can very well be observed at public squares. When the group gets bigger they also move more to the center (Cao et al., 2019).

In this research, with use of space, the focus is on which places young adults use, what they are doing in the places and how often and how long they use the places.

During corona, the use of space has changed. People need to keep distance from each other. Therefore larger popular parks are less used, because it is not possible to keep the distance in these places because of the crowding (Yue et al., 2021; Connor, 2020). Therefore neighborhood spaces are reinvented in these social distancing times. People organizing things in their neighborhoods and on the streets has become more popular. The streets and sidewalks are more alive and the driveway and parking lots are used as gathering places. People are looking more at local places and interactions in these times (Mehta, 2020). But these lively streets are not visible everywhere, since this is not possible in every place, because some people have very little private open space or lack access to outdoor space. For example when living in an appartement building (Bandara et al., 2020).

Therefore it can also still be observed that parks and playgrounds are still used. During the pandemic, a study in Beijing found that people are happier when they spend time in a park (Zhu et al., 2021). However Ugolini et al. (2020), who reviewed multiple international places, stated that the parks were only used for necessary visits, so for example walking ones dog. The spaces were not used for the usual physical exercise, relaxing and observing nature as it was used before the pandemic (Klein et al., 2021). However Mutz and Gerke (2020) mention that younger people are more likely to maintain their sporting activities than older people in times of corona. Nonetheless, still less people were meeting in large parks because they perceived the risk of corona to high. Therefore, an increase of people in smaller parks and streets was observed. It is observed more often that there is a higher mental barrier, in the form of fear for corona, to go outside. People do report however that they miss meeting other people outside and in these public spaces (Klein et al., 2021).

Next to this Kim & Lee (2020) found that because of corona, private dining is preferred more. In the future restaurant might need to cater more to people wanting private tables and private rooms, instead of the 'normal' settings. This is because people are still scared of infection.

2.1.5 Living situation/condition

In times of corona, ones living conditions, but also who one lives with can certainly have an influence on well-being. in the next section, both the social side, so the living situation, and the spatial side, so the living conditions will be discussed.

Ones living situation can have a large impact on ones well-being. Liu et al. (2020) state that a high quality of relations, this can be a marital relationship or child-parent relationship, improves one mental health and thus well-being.

As stated before when living alone there is a greater risk of social isolation and a lower well-being. Therefore having a higher household size could relate to higher well-being because of an increase in social interactions (Oshio et al., 2019). However Hikichi et al. (2020) found that for young adults living with the parents while the parents are in charge, can even have a worse effect on well-being than living alone. This has nothing to do with the fact of living with the parents in one house, but more with the fact of who is in charge. Looking at cases where young adults lived with their parents, but the young adults were in charge and head of the household, the well-being was much higher. What is interesting about this, is that there is no change found in the well-being of the parents, so the parents are not really affected by who is in charge. Overall studies found that moving in with parents can have positive and negative effects. It is related to more depressive symptoms, but in other cases it provides more social support. The studies did not show a clear direction, however the positive effects found for living with parents were usually found in studies of countries where living with ones parents is a common household arrangement. These are countries like China, Spain and Italy. (Hikichi et al., 2020).

Living with a partner is related to reducing depressive symptoms. The partner plays a big role in every situation. Both living alone and living alone with children has a higher risk of depressive symptoms than living with a partner or living with a partner and children (Hu et al., 2020).

In corona times one can see that stress level went up when the living arrangements changed. In much of these cases it meant that children were forced to return home. According to the study of Evandrou et al. (2021) around 21% of the young adults experienced a change in their living situation. Which consist mostly of them moving back in to the parental home. Because the returning to home in these cases was often forced by for example employment issues, there were more depressive symptoms measured, because stress levels increased in around 25% of the cases. Because people are living at the parental home, the social interactions could go up, but what was often found, was that this actually had a negative effect. Because they were spending more time with the people they live with, for example their parents, the amount of conflicts also went up, which might be because of the sudden raise in household size (American academy of pediatrics, 2015). Next to this, young adults experienced a sudden and quick loss of independence and at the same time it was getting more difficult to find individual time. This did not have a good effect on the overall mood in the household, stress levels and well-being (Evandrou et al., 2021).

Next to this ones living conditions, so how someone is living, can also influence their social interaction. For example someone who lives high in an apartment building, will not have a connection to a street, because of living high up and will probably also have less social interaction because of this (Bandara et al., 2020). The reason for this can also be related to a lack of outdoor open private space in these cases. The amount of private space, both indoors and outdoors, can have an effect on social interactions in corona times. When one has very little private space, the opportunities to meet in a private space go down, since there is not enough space to accompany the social distance rule. Next to this, when someone lives rather small, the need to go outside might also be larger and thus these people might use public spaces more (Mehta, 2020).

2.2 Conceptual framework

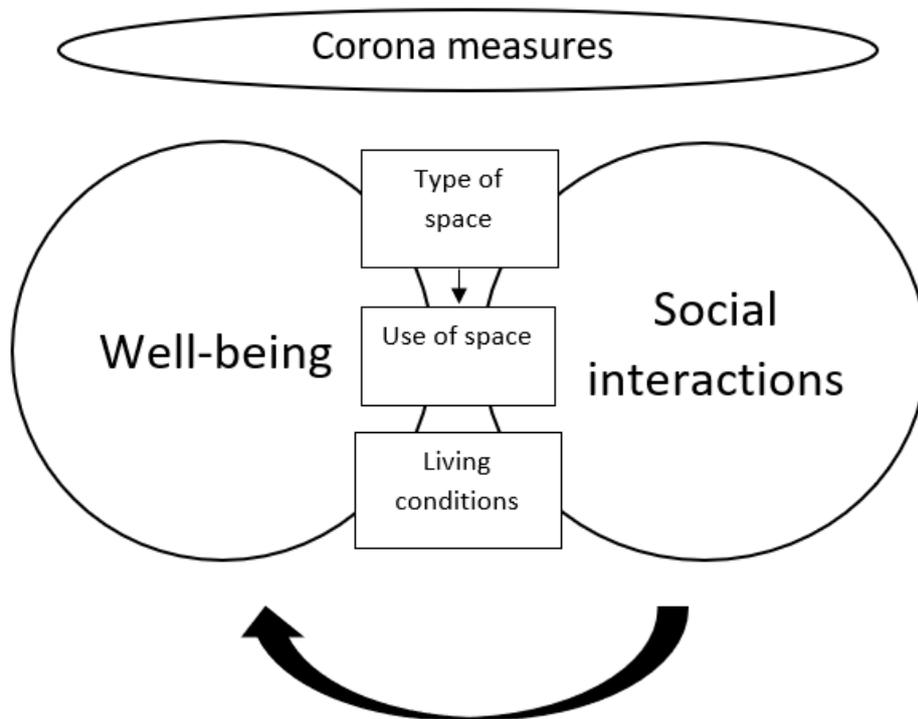


Figure 2 Conceptual framework

In this research two concepts are central which are well-being and social interactions. The corona measures have an overall effect on all concepts, since it changed the situation that people are living in and thus changed all the concepts. As can be seen in figure 2, all of the concepts have an influence on well-being. Social interaction affect well-being in the way that a decrease in social interactions or even social isolations can have a negative effect on well-being (Oshio et al., 2019). Public space, which consists out of type of space and use of space can influence well-being in the way that ones surroundings, but also their activity in the place and the people they are with, can influence their well-being. For example being in green spaces can have a positive effect on well-being (Yang et al., 2021). Lastly the connection between living conditions and well-being is visible in the fact that how one lives and with who, can influence well-being. For example, the people one lives with can have a great effect on well-being relating to for example support or irritations (Hikichi et al., 2020). All the concepts in the squares also can have an influence on social interactions. Public space relates to social interactions in the way that it depends on the type of space, whether social interactions will take place or not. Some public spaces and amenities within them are more suitable for social interactions than others (Hatefishojae et al., 2020). Next to this, the connection of living conditions to social interactions is related to for example the amount of people one lives with. If someone lives alone they will probably have less interactions than someone who has a larger household (Oshio et al., 2019). As mentioned before public space consists out of type of space and use of space. The type of space can have an influence on use of space, because it depends on what type of space and what it looks like, how people behave inside the place and what they are doing. For example it is more likely to sit in a park rather than in a shopping street or market square, usually due to certain amenities being present or not (Hatefishojae et al., 2020).

2.3 Expectations

Based on the literature review and conceptual framework, certain things were expected to be found in this research. In the results section, there will be a link back to these expectations.

For every sub question an expectation has been formulated:

1. Overall, well-being went down during corona

It is very likely that the well-being of young adults went down in times of corona. The opportunities for a social life are much smaller and different. Young adults are very dependent on their social lives and they are in the time of building a social network. If they have no opportunity to do that their well-being will go down (Klerk et al., 2020; Fontana et al., 2021).

2. When the corona measures effects one quality of life (negatively) a lot, that individual will tend to follow the rules less strict

Ones view on corona measures is of great importance. If the measures affected them a lot, there would be a higher change of them not following the rules anymore. For example when one is not satisfied by online interactions, the change is high that he or she will still meet in real life and maybe not according to the rules (Li et al., 2021).

3. Physical interactions went down during corona, and more interactions took place online

Face to face contact will go down in corona times (Fontana et al., 2021). People will try to replace this by online interactions and thus these will go up (Blokland et al., 2020).

4. Green spaces and parks are used more during corona

Since places like bars and restaurants are mostly closed in corona times. People will use other places to get outside of the house. It is therefore expected that green spaces and parks will be used more. These spaces are very important because of the presence of nature and that it serves multiple uses. (Zhu et al., 2021; Yang et al., 2021).

5. People living in a larger household size are affected less by corona than people living in a smaller household size

One could say that the more people you live with, the more interaction one can have in corona times and thus ones well-being is less affected (Oshio et al., 2019).

3 Methodology

3.1 Research strategy

With this research the aim is to get an insight into the situation that corona has created for young adults. A mixed methods techniques had been used, with the help of surveys and observations. This to get an in depth picture of the changed situation created by corona in the lives of young adults. Specifically focused on public space, living conditions, well-being and social interactions. Of course, every individual is impacted differently by corona. Therefore, both qualitative elements such as experiences and quantitative elements such as amount of social interaction and use of space were used. Surveys were used rather than interviews, since next to experiences, the actual behavior of the young adults was very important for this research and this was easier and more time efficient to research with a survey. Observations were mainly used to partly check the results from the survey, whether these were actually visible in real life and to get better inside in how the public space was used. With this mixed methods approach it was expected to get more in depth inside in the situation. Next to this, a mixed methods approach increases the overall validity and credibility of the study (Yin, 2013). Next to the validity and credibility, Bamberger (2012) states that a mixed methods approach can help in the development of the research. One method can help develop another better. In this research this is the case with the observations, which are based on the survey results. Next to this, according to Bamberger (2012) different methods can also be complementary of each other, in the way that they deepen the results.

For the research area the Netherlands was chosen, this because the corona measures were mostly the same in the whole of the Netherlands. This research took place between April 13th and June 3rd. For young adults, people between the age of 18 and 35 were taken. This is the age range that is often used for young adults. This is, for example, in line with the research of Caarls et al. (2018) and Gillespie (2020). Both of these studies were researching young adults and they both indicated the age range of young adults being from 18 to 35 years old.

3.2 Data collection

3.2.1 Survey

The survey consisted of 36 questions, both open and closed questions. It was estimated to take about 15 minutes to fill in. The survey was separated into 7 blocks namely: Introduction, Corona measures, Social interactions, Well-being, Use of space, Living conditions and Demographics (see table 1). The survey had a lot of (likert) scale questions. While developing the questions, they were all in different scales. However, to make it clear for the respondents, it was chosen to make all the question the same scale (1 to 7). For all questions, it was mentioned what each number stands for (see appendix 1 for the specific likert scale per question). A scale of 1 to 7 was chosen instead of 1 to 5, because this gave more depth to the answers. However in the survey there was one exception, which were the questions about well-being. These questions were on a scale from 1 to 10, since this is the scale that is usually used in the Netherlands to give a grade. So it was assumed that this would be the easiest way for the respondents to give a representative grade about their whole life. Next to this, there were also some open essay questions in the survey. These were added to gain more context dependent information. In these questions respondents could more easily indicate experiences, which was of great importance for this research. Something that should be taken into account in this research is that people were asked to fill in questions about their life during corona.

With this, it was meant to review the whole period in which corona was present. However, it is likely that people focused more on the time in which they filled in the survey (somewhere between April 13th and May 21st), because it was easier to do and it might even have happened without realizing it. The complete survey can be found in appendix 1.

Topic	Amount of questions	Type of questions	Research aim
Corona measures	3	Relating to the 4 measures, how they follow them and how it affects them	How did young adults cope with the specific measures
Social Interactions	6	How social interactions changed during corona times, also relating to physical and online	What impact did corona have on social interactions of young adults
Well-being	3	How it has impacted their life	How did corona impact the well-being of young adults
Use of space	13	The change in use of public space, activities and time spent in public space. How the perfect public space would look like	How did corona impact (the use of) public space for young adults
Living conditions	3	Information about the space they live in and amount of space available	Does corona impact young adults differently based on their living conditions
Demographics	7	Basic demographic information and information about where they live and in what situation.	Does corona impact young adults differently based on their demographics characteristics

Table 1 Survey overview

The goal was to get at least 100 respondents. According to Burt et al. (2009), this is enough to do statistical analysis and 100 is often mentioned as the minimum sample size to get a meaningful result (Tools4dev, nd). 100 was set as a minimum, so more responses was always good, since the higher the response rate, the higher the reliability of the research. Due to the restrictions in place, the collecting of the data was completely online. The program used for the survey was Qualtrics. The survey was spread among my own social network and they also often spread it further. The survey was also posted in some Facebook groups and the website Surveyswap was used. This is a website where people fill in each other surveys. One can specify who can fill in the survey (age, nationality etc.). This way you can reach the correct target group and you have an even reach over the whole of the Netherlands, which added to the sample in a positive way, since the responses from the social networks might be more centered in specific places. Collecting the data was a combination of a volunteer sample (my own contacts) and a random sample (Burt et al., 2009). The answers of the survey helped to gain insight in how young adults are affected by corona and how their behavior has changed. The survey was collected between April 13th and May 21st.

3.2.2 Observations

The focus of the observations was to see how and by who the public space was actually used. Characteristics that were looked at were groups size, gender, age (approximately), the relation of the group, where in the public space they were and what they were doing.

A snapshot observation method was used. The place was observed in a short time and the activity at the place at that time was written down in a table (see appendix 2) (University of Plymouth, nd). How the actual observing took place depended on the type of place. For example, in a park or forest the observation took place by walking through the place one time. But for example on a market square, the observations were done from a central location, where the whole place could be viewed from one spot. Every place was visited multiple times at different days and times. This created an overall picture of the activity in that public place. The observations were conducted between May 2nd and June 3rd.

For the observations, places were chosen based on the survey results. For example, observations were carried out in a village/rural area and in a city/urban area, because respondents from the survey came from both places. Respondents came from a lot of different places and therefore there was also a fairly even spread across the Netherlands. In the observations, for the city, Groningen was chosen and for the village a combination of Ruinerwold and Zuidwolde in Drenthe were used. The observations took place at the locations described in table 2.

Public Space observed	Categorisation public space Survey	Characteristics area Public space
<i>Market square at the coop in Ruinerwold</i>	<i>Market Square</i>	In front of a supermarket, Market consisting of 3 stands
<i>'De Koele' in Ruinerwold</i>	<i>Large urban park/green space</i>	Lake with small forest area around it
<i>Forest Zuidwolde</i>	<i>Large urban park/green space</i>	Forest with a small lake at the edge, a campground and a retirement home with a petting zoo next to it on the other side.
<i>Pioenpark Groningen</i>	<i>Neighborhood park</i>	Small park with two lakes, a tennis court, rose garden and a playground
<i>Oosterpark Groningen</i>	<i>Neighborhood park</i>	Small parks with multiple playgrounds. A small lake in the middle and a small square at the side
<i>Noorderplantsoen Groningen</i>	<i>Large urban park/green space</i>	Large park in the middle of the city. A restaurant in the middle with seating around it. A characteristic gazebo and height differences throughout the park
<i>Zernike campus Groningen</i>	<i>School campus</i>	School location of the University of Groningen, but also HBO campus next to it. Seating all around the buildings, several parking lots and a lake. There are sporting facilities next to it and there is a restaurant present.
<i>Vismarkt Groningen</i>	<i>Market square</i>	Market on Tuesday, Friday and Saturday. Surrounded by stores, shopping streets and terraces

Table 2 Observation locations characteristics

3.3 Data analysis

3.3.1 Survey

The quantitative elements of the survey were analyzed with the help of descriptive analysis mainly focused on means and standard deviations and correlations with the help of the program SPSS. The focus was on the descriptive overall, but also for special groups based on for example relationship status, gender and living arrangements. This way one can see whether these certain subgroups were affected more than the overall young adult group and whether for example the living situation played a role in this.

The two qualitative questions 'In what ways has corona impacted your life' and 'What does the perfect public space look like for you' were coded according to the codes mentioned below. Through coding, patterns can be found in the data and relevant information can be deduced from it. The coding was partly done with color schemes and partly by counting by hand. This counting was done by hand, since the program which was planned to be used (AtlasTI) was temporarily unavailable. Luckily coding these questions was still doable by hand.

The first question about the impact of corona was focused on whether it is positive or negative and what impacts them. The following codes were used for this: *Online, social interaction, mental health, spontaneity, motivation, travel restrictions, overall freedom, work related*

The second questions about the perfect public space was focused on what features and amenities were mentioned. The following codes were used: *Green, Sitting opportunities, food and drinks, open space, outside, clean and maintained, quiet, relaxing and fun, walkable, inside, aesthetically pleasing, sporting facilities, music, shelter.*

With the questions relating to activities in public spaces. All the different activities in different places were counted by hand. This was also the case with the questions related to planned social interactions. All the places were counted by hand.

3.3.2 Observations

The outcomes of the observations helped to gain insight into the actual activity in the public places. This could then be compared to the survey to see whether, what the young adults report in the survey corresponded to the image that was seen in real life.

The filled in tables of the same places (from different times) were compared to each other to get an overall view of the activity in the public space (see appendix 2). Then this data was compared to the activity outcomes of the survey to see if it matches or if there were additional/different patterns visible.

3.4 Ethical considerations

At the beginning of the survey there was a disclaimer saying that the respondents will remain anonymous and that they have the right to withdraw from the research at any point. Next to this, multiple questions in the survey had the option of 'prefer not to say' in case the respondent did not feel comfortable answering the question. With the observation no information was put down, that could be related back to an individual, all the information was very general. This is certainly necessary, because these people were not asked to participate and do not even know there were being 'watched'. Furthermore, it was made sure that no one was hindered when making the observations. A good amount of distance was being taken and it was not needed to look at individuals for too long to put down the information that was needed. Since part of the data collection was online and the other part was taken at a comfortable amount of distance, personal safety was not an issue (Punch, 2014).

4 Results

4.1 Summary of the data

With the survey 160 responses were collected. From this 110 were female and 46 were male. This is a quit uneven spread, but it is more common that females are more likely to fill out surveys or participate in a research then males (Smith, 2008). Of the respondents 77 were single and 74 were in a relationship. This is a nice even spread. The mean age of the respondents was 23 years old and 116 respondents were living in a city and 45 were living in a village. Therefore observations were done in both places in villages and places in cities.

4.2 Well-being

In the survey data there was a clear drop in well-being during corona. The mean of well-being before corona was 7,8 and this dropped to 6,0 during corona. This is a drop of 1,74 to be exact. This can be seen in table 3. What is good to mention is that the variable well-being changed is reverse scaled. This means that positive numbers mean a drop in well-being and a negative number means an increase in well-being. 48 people indicated their life to be insufficient during corona. This was only 4 people before corona. 10 people indicated that they became happier during corona. Next to this, 19 people stated that their well-being remained the same. This means that 128 people felt a decrease in their well-being during corona. This ranged from only 0,1 lower to a 6,0 drop in well-being. This is in line with the expectation that well-being went down during corona. This finding also corresponds with the research of Klerk et al. (2020) and Zhu et al. (2021) who stated that people and especially young people, experience a decrease in their well-being and are feeling more down.

	Well-being before	Well-being during	Well-being changed
Mean	7,76	6,03	1,74
Std. Deviation	0,98	1,51	1,50

Table 3 Well-being data

It can also be observed that the well-being of young adults was more diverse during corona in relation to before corona. Before corona almost all people were rather happy, but during corona the spread was very big. There were people who were happy and people who were very unhappy (this can be seen in the standard deviation of table 3).

Looking at the demographics, it can be observed that females were more affected by corona than males (see table 4). This corresponds with the findings of Jia et al. (2021) who stated that females are struggling more in these times.

With relationship status, something quit striking was found. Looking at table 4, people who are in a relationship were more affected by corona than people who are single. This contradicts with the findings of Hamermesh (2020) who stated that single people will have a bigger decrease, because they spend more time alone and social isolation can have a bad effect on ones well-being. However something that needs to be taken into account is that being in a relationship does not mean living together. From the open question relating to the impact of corona, people stated that they missed their significant other and had a hard time seeing each other because of corona measures.

Regarding age, people who are younger than 28 seem to be affected a lot more by corona than people who are 29 and older (see table 4). Like Zhu et al. (2021) stated, corona has a large impact on young adults because they are very dependent on social life and still need to build social networks. However young adults of 29 and older might already have stronger networks, in contradiction with

young adults of 22 and younger who still need to expand their networks. Building networks is very hard in corona times, because meeting new people is a challenge. This might be a reason why young adults of 29 and older are affected less.

	Age 18-22	Age 23-28	Age 29-35
Mean	1,79	1,77	1,25
Std. Deviation	1,65	1,37	1,44

	Female	Male		Single	Relationship
Mean	1,83	1,53	Mean	1,56	1,86
Std. Deviation	1,54	1,40	Std. Deviation	1,43	1,56

Table 4 Changed well-being for different demographic characteristics

In the survey an open question was asked regarding how corona impacted their life. There were a lot of mixed answers of which only 15 were (partly) positive.

Looking at the responses, the loss of social contacts seemed to be very prominent, although within this there were also differences visible. Some were very negative about it, everything regarding social interactions went down and they did not like that as can be seen in the quote below.

“I see and talk to way less people and when I do see people, you have nothing to talk about because you are not experiencing anything in your life”

Other people were a bit more positive regarding this. They did still indicate that social interactions went down, but for example mainly the interactions with acquaintances. They still feel negatively impacted by the lack of social interactions, but they do still try to meet up with friends, to try to keep connected with people. This is only a lot harder to do regarding acquaintances.

“For me it’s mostly in the contact out of my group of close friends. Before covid I still had a lot of contact with people that I considered acquaintances or friends, but not necessarily my close friends. Now with limited options regarding sports/hobbies/going out I only meet up with my close friends.”

This quote clearly shows that this person is still having social interactions, but just with a selected amount of people. Which makes this quote already have a more positive look than the first one, which was all negative.

Next to meeting with certain types of people, young adults also mentioned that the way they are meeting impacts them a lot. Many indicated that they miss the spontaneous meeting, since during corona a lot had to be planned up front. People are less excited, because for them the planning of meetings takes the fun out of those meetings. Which becomes very clear when looking at the quote below

“The spontaneous enjoying is gone. Everything has to be planned. I am used and I love to do things spontaneous and not to plan it. This causes less actions and thus less or enjoying things differently.”

Next to social interactions, the switch to online seemed to bother a lot of young adults as well. The switch from physical to online interaction was very difficult for some people. This regarding social interactions, but also education and work related.

“Due to online lessons and no physical lessons at all on my university I decided to stop with my current study. It was very hard to keep motivated with no physical interaction between students and no physical lessons”

The quote above shows how much impact this switch to online can have for young adults. Motivation and concentration seems to be the problem. This mainly also relates to the fact that home and work environments now get mixed, and it is easier to just ‘click away’ a meeting than to actually physically walk out of one.

Overall, the well-being of young adults was hit very hard by corona. Young adults indicated to be struggling with their mental health and some even had to seek for professional help. They indicated that it is really hard for them to keep going in this isolation. The following quote really shows how much young adults were actually struggling in these times.

“It has made me more anxious, less able to focus, more tired. I feel like I'm losing my friends since we're always apart. I feel like I'm missing out on what are supposed to be the best years of my life.”

Luckily there were also some people who were making the best of this pandemic and tried to see the positive side of things. Some young adults were more reflective about their life as a whole and they felt more at peace with themselves. Nothing was forced anymore and creativeness regarding meetings went up. Some even indicated that their grades went up, because they had more time to spend on their studies. The quote below shows that people are more conscious about the choices they make and with whom they spend their time with.

“it has also made me reconsider many relationships. Now I only spend time with people that are important to me and have left behind many draining relationships. I also feel like I've gained more clarity regarding my goals for the future.”

4.3 Corona measures

People indicated to be negatively affected by all the corona measures taken in the Netherlands. People were most affected by the measure of limited visitations and least by the measure of amount of people outside, which is visible in table 5.

Looking in table 6 at how much every measure was being followed, only one measure was almost followed by everyone, which was the curfew. The other measures were also followed but considerably less than the curfew.

What is also striking from these results is that the measure that has the most effect (amount of visitations) was also the measure that was followed the least. Which is in line with the expectations.

The changed well-being was compared to the amount of people that the respondents see within 1,5 meter and thus not following the social distancing rule with. No clear pattern was found and there seems to be no connection between the two. This is contradicting the expectations.

Next to this, there was also no connection between the following of the measures and the changed well-being.

	Social distancing	Amount of visitations	Curfew	Amount of people outside
Mean	4,94	5,23	4,84	4,57
Std. Deviation	1,627	1,526	1,819	1,632

Table 5 quality of life affected by corona measures

	Social distancing	Amount of visitation	Curfew	Amount of people outside
Mean	4,70	4,33	6,12	4,73
Std. Deviation	1,474	1,844	1,370	1,735

Table 6 The following of the corona measures

4.4 Social Interactions

Overall it can be observed that social interactions have decreased. Looking strictly at physical interactions, this effect was even bigger (see table 7). These physical interactions were replaced by online interactions. Online interactions went up from about 26% before corona to 64% during corona and thus physical interactions went down from about 74% to 36%. This is all in line with what was expected and corresponds with the research of Fontana et al. (2021), Laurence (2019) and Blokland et al. (2020). Even though these physical interactions were thus largely replaced by online interactions. People indicated that they do not find online interactions a good replacement for physical interactions. Both in social settings and in for example study and work settings. Even though they did not find it a good replacement, the meaningfulness of the interactions stayed almost the same. Although experiences do differentiate a lot, some people found it more meaningful and others indicated a decrease. So this differs a lot per individual and how they experience it. Regarding the length of social interactions, it was indicated that this went down. People are having shorter interactions than before corona. This was kind of a striking result, because one would expect that because interactions are planned more, they will also be longer, because one especially reserves time for those interactions.

	Daily social interactions	Daily physical interactions
Mean	2,47	1,91
Std. Deviation	1,07	0,94

Table 7 Data on the amount of social interactions

Looking at with whom people were having interactions, some interesting patterns were found (see table 8). Overall, all interactions have decreased, no matter with which people these interactions took place. However, it can be observed that the interactions with neighbors decreased the least. This might be due to the proximity of people. Everyone was working from home and thus are more at home. Therefore there is a higher chance of running into your neighbors, because they are also home the whole day.

Next to this, the interactions with acquaintances decreased the most. This was in line with what was expected. The interactions with thin trust will decrease more than with people with thick trust. This is because acquaintances are people you interact with maybe on a daily basis, because you run into them in the supermarket or during school, but you normally do not actively make plans with them. Since in corona times, most interactions needed to be planned beforehand, a lot of the interactions

with acquaintances disappeared. People actively needed to make appointments with each other to meet, because one could not for example just show up at ones house, because of the regulations. People could already have visitors or there might not be enough space to adhere to the 1,5 meter distance. People did not seem to make these appointments/meetings with acquaintances. This is in line with the research of Amati et al. (2018) and Putnam (2000) who more or less state that acquaintances contribute less to well-being than friends and family and thus are considered less important.

	Friends	Family	Acquaintances	Neighbors	Colleagues
Mean	2,43	2,96	2,08	3,03	2,64
Std. Deviation	1,09	1,43	1,18	1,39	1,48

Table 8 Social interactions with different types of people

4.5 Use of space

4.5.1 Survey

The number of uses of public space decreased during corona from 53% to 34% in relation to private space. Therefore, the number of uses of private space increased from 47% to 66%. This means that people were staying more at home, or they meet their friends at each other houses instead of in public space. This also means that before corona the distribution between use of public and private space was very close together, almost 50/50. A reason for the decrease in use of public space probably has something to do with the restaurants and schools that were closed at times. The decrease in usage of public space was also very visible in the fact that people indicated that the amount of times they see people in public space has decreased a lot. This went from on average several times a week before corona, to a few times a month in corona times. This corresponds with the finding of Klein et al. (2021) that people go outside to meet people less, because of fear for corona.

In table 9, the change in usage of public spaces during corona can be seen. From all the public spaces, playgrounds were used least by young adults. Overall, there was not really an increase in use visible in public spaces. The only public spaces that showed a little increase in usage during corona are the urban parks and neighborhood parks. So it became clear that green spaces are primarily used during corona. The two public spaces that decreased the most are the restaurants and schools. This is pretty logical, because these facilities were closed for a large part of the corona crisis. After this, the shopping streets decreased the most. This is also easy to explain, since stores have been closed for a while, or you had to make an appointment before you could enter the store. When looking specifically at planned social interactions, the same patterns were visible. This is in line with what was expected, namely that green spaces and parks were used more during corona. This also corresponds with the research of Zhu et al. (2021).

	Large urban parks	Neighborhood parks	Playground	Market square	Streets	Shopping mall	Campus	Restaurant & bars
Mean	4,30	4,30	3,74	3,24	3,74	2,26	1,39	1,41
Std. Deviation	1,75	1,58	1,16	1,38	1,29	1,21	0,80	0,78

Table 9 Change in usage of public space during corona

What people were doing and how long they stayed in these places per visit was also asked. To get a good overview between the change from before to during corona, only the respondents were taken into account who used the places both before and during corona.

In urban parks, 5 different kind of activities were reported: walking, eating and drinking, relaxing, social interaction and sporting. Both before and during corona walking was the most frequent activity. In corona times young adults were eating and drinking less in these places, but they were used more for social interaction. The time spent in the place went up from 1-2 hours before corona to almost 2-3 hours during corona

In neighborhood parks, 6 different activities were reported: walking, social interactions, playing with children, relaxing, sporting and eating and drinking. Both before and during corona walking was the most frequent activity. It can be observed that during corona, neighborhood parks are mostly used for walking or social interactions. The time spent in the place went up from a little more than 30 minutes before corona to about 1-2 hours during corona.

At playgrounds, 4 different activities were reported: relaxing, playing with children, social interactions and walking. Overall playgrounds were used very little. Before corona there was more difference in activities than during corona. Before corona relaxing was the most frequent activity and after that playing with children. During corona the reported activities were done almost all the same amount. There was not really a change in time spend in the place visible.

At market squares, 5 different activities were reported: shopping, walking, groceries shopping, social interactions and sitting on a terrace. All these activities decreased during corona. Before corona all activities were fairly close together (except for sitting on a terrace). During corona, walking and groceries shopping were the most frequent activity. This could be because actual stores were closed, but there were still some market stands, so one could still get groceries and walk around. The time spent in the place decreased a little from over 30 minutes before corona to a little below 30 minutes during corona.

On the streets, 6 different activities were reported: walking, social interactions, parking, relaxing, shopping and playing sports. Walking and social interactions were the most frequent activities, both before and during corona. Overall, there was not much change visible between before and during corona. People still used streets in the same way and no one reported that they were meeting more people in the street or that there were things organized, which some research stated (Mehta, 2020). There was not really a change in time spend in the place visible.

At shopping malls or streets, 7 different activities were reported: shopping, walking, social interactions, doing groceries, working, eating and drinking and relaxing. Before corona there was a very clear most frequent used activity, which was shopping. However, during corona this decreased a lot, probably due to the shops closing or having to make an appointment. Next to this, a small increase was visible in walking and doing groceries and a small decrease in social interactions. During corona the three most frequent activities were shopping, walking and doing groceries. Time spent in this place went down a lot from about 2 hours before corona to around 30 minutes during corona. This corresponds with people indicating that they just did the necessary shopping or just some small and quick groceries.

At the campus/school, 7 different activities were reported: studying, walking, social interactions, eating and drinking, sporting, relaxing and working. Before corona there was a clear most frequent activity, namely studying. This is very logical because that is where the space is essentially for. However next to this, social interactions were also very present. Which means that the

campus/school is also very important for young adults social lives. During corona all activities decreased a lot. Studying was still the most frequent, however there are now three activities which were not done anymore, namely walking, sporting and relaxing. Time spent in this place went down from almost more than 3 hours before corona to 1-2 hours during corona.

At restaurant and bars, 5 different activities were reported: eating and drinking, social interactions, working, going out and relaxing. Before corona both eating and drinking and social interactions were the most frequent. During corona everything decreased a lot. Going out and relaxing were not done at all anymore. Time spent in this place decreased a lot from 2-3 hours before corona to around 30 minutes during corona. This is probably because the only possible interaction with the restaurants at certain times, was take away and delivery and thus very short amount of interaction time.

Based on the data of activity in the different public spaces, it can be observed how many people do not use a certain space. Urban parks, Neighborhood parks, playground and streets all remained pretty much the same. However, Market squares, shopping malls, schools and restaurants were used by a lot less people. This is logical because the 'normal' use of these places were not allowed anymore.

Based on the same data, a ranking can be made on which places are used the most before and during corona. (see table 10)

Ranking before corona	Public spaces
1	Restaurants and bars
2	Shopping mall
3	Campus/school
4	Urban parks
5	Market square
6	Streets
7	Neighborhood parks
8	Playground

Ranking during corona	Public spaces
1	Urban parks
2	Streets
3	Neighborhood parks
4	Shopping mall
5	Market square
6	Restaurant and bars
7	Campus school
8	Playground

Table 10 Ranking of place usage before and during corona

The colors in the second table indicate what happened to the ranking during corona in relation to the ranking before corona. Green means it increased, Orange means it stayed at the same place and red means it went down in the ranking of usage. From these tables, one can see that playgrounds were always used the least. Both streets and both type of parks went up a lot in the ranking during corona. This is probably because these places are in open air and they do not have a pre-determined use. What is very visible in the ranking of places in corona times is that overall the places who do not have

an exact pre-determined use, were used most (excluding playgrounds). While before corona, this was the other way around.

When certain facilities/public spaces closed, young adults had to do different things with their time. They were asked what spaces and activities replaced the things that closed down. Most people changed to a private setting at their own home or their friends home. Next to this, parks were also used more as a replacement. And of course a lot of meetings changed from physical to online.

There were three activities which were done a lot, which were social interactions, walking and eating and drinking. The walking was mostly done in the parks. Social interactions were done mostly at home and at parks. People were getting pretty creative when restaurants and bars closed. They for example hosted dinner parties with their friends and every time it would be at someone else's place and thus someone else would cook. Also small gatherings with drinks were mentioned, where they for example made their own cocktails. Next to this, restaurants also delivered in these times and that was used a lot as well. All these activities regarding eating and drinking were mainly done in private space. Only three people indicated to also do this in open green space, this might however also be weather related.

4.5.2 Observations

Next to the survey, Observations in public space were also done. During the observation the focus was on who was in the place and what they were doing. In table 11, an overview of the observations can be found. The fully filled in observation schemes can be found in appendix 2. Below, the results of the observation per public place will be shortly discussed.

Place	Amount of times observed	Time	Weather conditions
Vismarkt Groningen	3	10.00, 12.30 & 17.00	Clouded & sunny
Pioenpark Groningen	3	9.30, 14.00 & 17.25	Clouded & sunny
Oosterpark Groningen	3	10.00, 13.30 & 17.10	Clouded & sunny
Koele Ruinerwold	3	10.45, 13.30 & 15.00	Clouded & sunny and above 20 degrees
Forest Zuidwolde	3	11.00, 14.15 & 15.10	Rain, clouded (just stopped raining) & sunny and above 20 degrees
Noorderplantsoen Groningen	3	10.30, 13.15 & 17.15	Clouded & sunny and above 20 degrees
Zernike campus Groningen	3	13.00, 13.15 & 17.15	Sunny & sunny and above 20 degrees
Market square coop Ruinerwold	3	11.00, 13.00 & 14.00	Clouded & sunny

Table 11 Overview observations

Vismarkt:

When there was a market (Tuesday, Friday and Saturday), there were always more people. The most frequent activities were buying food and walking. When there was no market, people sat at edges sometimes as well. In the morning, there were more people coming alone. At midday, there were more younger people. Looking at the observation tables, this was the time where there were no people present who were around 30 years old. Both in the morning and in the late afternoon, people from around 30 years old were present in the place. A reason for this might be that they do not have a full time job yet as opposed to the older young adults. This corresponds with the findings from the survey where walking and doing groceries were the two most frequent activities at market squares during corona.

Pioenpark:

In general, the older young adults were more present here. Activities were mainly walking, often also with a dog. The sporting facilities present (a tennis court) were often used. There were not really groups of people present, people were almost always alone or in pairs. This corresponds to the survey data of neighborhood parks in the way that walking is very present. However in the survey social interactions were also very prominent and that was not really the case here since there were not really groups present at the place. Also there were more people sporting than was expected, because in the survey sporting was only indicated as an activity in neighborhood parks around 4% of the time. Each time the place was observed there were around 6 to 10 cases present in the park (groups) from these there was always at least 1 sporting. Thus this is more than 4 %.

Oosterpark:

In this park the ages were a little bit more spread, but still a lot of older young adults. They were still almost always alone or in pairs, except for one exception. This was a group of 8 people playing a ball game at the little square at the side of the park. The overall activity was again walking. However, in this park there were a few exceptions, for example more people sitting and also a male who was photographing nature. This place related more to the results from the survey of neighborhood parks than Pioenpark, because social interactions were more present in the way that people were sitting down. This was observed only once in Pioenpark and around five times in Oosterpark

Koele:

Especially in this place, the activity was very weather dependent. If it was hot outside, there were a lot of young people who went swimming and sunbathing and the size of the groups also went up. However, when the weather was not warm enough for this, the amount of people in the place went down and switched to older young adults. Then the main activities were walking, diving and fishing. The amount of cars that were present were almost always the same, but on the hot days, there were just a lot more bikes (which was the main mode of transport for the younger people). The place corresponds to the findings of urban parks/large green spaces in the survey in the way that there were not really people eating or drinking and that walking and social interactions were very prominent, because most people in the place were in groups. What is striking is that sports were very prominent here, but they also mixed with relaxing. This was not expected when looking at the survey results of large green spaces.

Forest Zuidwolde:

Once again, people were mostly alone here. They were mostly walking, and often with a dog. Next to this, there were also several people running. Once again the more older young adults were present

here. This place was very weather dependent regarding its activity. However maybe not in the way that you would expect. When it was very nice weather outside, there was no one present in the forest. The other two times that the place was observed, it was either raining or it had just rained. Both these times, there were quite some people there. When comparing this place to the survey results of large green spaces, it is striking that this place was not always used that much (probably related to the weather). It does correspond in the way that walking was the most present activity, however social interactions in the form of large groups sitting down and talking did not really take place.

Noorderplantsoen:

Very mixed ages were present here. It was always busy, no matter the weather, but of course way more people were present when the weather was good. When it was very warm outside, the most present activity was sitting in the grass, either talking or activities like picknicking. When the weather was not nice enough to sit down, then the main activity was walking. It was also observed that people were working out in this place and that the present sporting facilities (basketball court) were almost always used. In this place, people seemed most creative in their activity. For example people brought their own chairs and table and wine. Other people were playing chess or photographing nature and there were also people who brought their own rope and did some rope walking in between two trees. This was probably the place that corresponds most to the urban park/large green space results of the survey of the three places observed. The main activities were walking and social interaction and there were always a lot of people present, so it was used a lot, which is exactly the outcome in the survey. One exception was once again that there were more people sporting than was expected.

Zernike campus:

A thing that is good to mention for this place, is that the observation were only taken outside, and not in the actual buildings. During the day the activity was a lot higher, but also very different. During the day people were sitting, eating, and sometimes working out. They were hanging out in the place. At the end of the day, there were still some people present in the area, but everyone was either walking or biking, mostly trying to get home. This place was probably also very weather dependent, because when the sun shines, people are more likely to sit outside then when it rains. This observation differs a lot from the survey, since it was expected to not really see people sitting down and relaxing in the place, but more studying, which was not really seen in the observation.

Market square Coop Ruinerwold:

At this place there were no young adults present, each time it was observed. This place was probably too small for people to come to. This is of course contradicting with the survey, because market square were still used.

When looking at the observation, it can be stated that a lot more people used urban parks/large green spaces than neighborhood parks. This is contradicting with previous research of Ugolini et al. (2020), Klein et al. (2021) and Mehta (2020) who stated that larger parks would be less used because of crowding and risk of corona and that people would therefore switch to neighborhood parks. It does however correspond with the finding of Rivera et al. (2021) and Cao et al. (2019) who stated that young adults tend to use more larger public spaces.

4.5.3 Perfect public space

In the survey, young adults were also asked to describe their perfect public space. Looking at the data, young adults prefer a public space that is open and green with enough seating opportunities. These are not just benches and picknick tables, but also often open field are mentioned. Here they can just sit or lay down and relax. Next to this, they would prefer some opportunities to buy food and drinks and overall there has to be a good and relaxing vibe in the place.

“A lot of greenery and flowers, trees and plants, but no dog shit. A beautiful pond and benches to sit on. And a few food trucks where you can get something to eat or drink.”

“The perfect public space would be green, preferably a large park, where there is no constant traffic noise. Moreover, there would be places where one could buy different beverages and snacks. Finally, especially in the Netherlands there would have to be sitting spaces, sheltered from the rain and wind.”

“Plenty of space, plenty of nature, maybe a cafe or bar for refreshments”

Next to this, it became very clear that people are eager to go back to the situation before corona. Many people were revering to a place where there are no restrictions. Or saying that the place does not matter for them as long as they did not have to keep a distance from each other. This really shows that young adults are missing the ‘normal’ days and it shows their frustrations and that they are done with corona, but unfortunately corona is not done with them.

“A fun space without all the distance hassle”

“a space full with beers, music and dancing people without having to keep distance”

“I just want to go back to restaurant, bars and clubs”

“Everyone being able to chat to each other without distance... more social settings. No masks. Just the normal life like before corona. being able to go to parties”

4.6 Living conditions

It was expected that the amount of private space would have an effect on well-being and on the amount of public space used. However, this was not the case. There was no visible pattern between the variables. This means that it does not matter how big ones house is. This does not affect ones well-being during corona and also has no effect on how much public space is used. People with a lot of private space were not staying at home more than people who have little private space. This result is contradicting with the findings of Mehta (2020) who found that people living with little private space will have less social interactions and thus a lower well-being and will use public space more.

People who live alone were having less social interactions. Their social interactions dropped more than the social interactions of people who have household members. This is in line with what was expected and with the study of Oshio et al. (2019), who states that people living alone are at greater risk of social isolation and lower well-being.

When looking at table 12, one can see that young adults living with parents or living alone experienced a little more decrease in well-being compared to the average. People living with a partner or living with housemates experienced a little less decrease in well-being than the average.

This is in line with the research of Hu et al. (2020) who stated that living with a partner is better for mental health and well-being than living alone. Regarding living with parents, it is very likely that in most cases the parents are the head of the households, looking at the age of the young adults. So the fact the well-being decreased more than the average is than in line with the research of Hikichi et al. (2020). With a few cases it was also mentioned that they moved back in with their parents during corona, this might also add to the decrease in well-being according to the research of Evandrou et al. (2021).

	Well-being changed all	Living with parents	Living with partner	Living alone	Living with housemates
Mean	1,74	1,83	1,59	1,86	1,67
Std. Deviation	1,50	1,77	1,42	1,53	1,35

Table 12 Well-being changed in different living situations

People living in the city might have more accessibility to different kinds of public space. However, when looking at the amount of different public spaces used. There was no big difference between people living in the city or not.

The relation between household size and amount of public space used was investigated. However, there does not seem to be a relation between the two, because there was no pattern visible. Next to this, the relation between household size and change of well-being was also investigated. It was expected that a higher household size would be beneficial for ones well-being, because you still have people to talk to. A smaller household might lead to social isolation. However the opposite was observed. The higher the household the more the well-being dropped. This effect was rather small, but is still contradicting with the expectation.

Having a garden did not really seem to affect ones well-being. This is contradicting with the research of Mehta (2020) who found that less access to private outdoor space, will lead to a lower well-being in times of corona.

Looking at the type of house young adults live in (table 13), one can see very different patterns regarding well-being. Young adults living on a farm had a very large drop in their well-being. This might be due to the extra isolation with living on a farm. Usually one lives outside of the city or village and there are no neighbors nearby. Young adults living in a detached house experienced the least amount of drop in their well-being. This might be because they still can have contact with their neighbors, but are less likely to experience noise or other irritations from their neighbors, because they live detached.

	Wellbeing changed all	Appartement	Detached	Farm	Row house	Semi-detached	(student)room
Mean	1,73	1,66	1,16	3,16	1,90	1,61	1,89
Std. Deviation	1,50	1,57	1,23	1,60	1,45	1,85	1,31

Table 13 Well-being changed for different types of housing

5 Discussion

In this section, the unexpected results are discussed. With the help of literature, possible reasons for these unexpected outcomes are speculated on.

No clear pattern between changed well-being and amount of people seen within 1,5 meters

One of the results that was not expected was the fact that there was no pattern between changed well-being and amount of people seen within 1,5 meter (The amount of people with whom one does not follow the social distancing with). A reason for this might be that different people have different needs regarding social contact. Some people might be perfectly fine with having interactions with 5 people, while other people need much more than that and are still unhappy even when they are seeing 20 people. Rath and Harter (2010) found that for people to have a good well-being one needs 6 hours of social interaction per day. However, it does not say anything about with how many people this should be, only about the amount of time. So 6 hours with 1 person or 6 hours with 20 different people, could have the same effect on well-being. Next to this, from the data it also became clear that higher numbers of seeing people within 1,5 meter does not always mean friends or family. It often are people who see a lot of people because of work, for example in care facilities or teaching at schools. They simply can not hold the 1,5 meters distance while working. Even though the number is high, it could still be that they do not really see friends/family and are still feeling rather down. The mental health foundation (n.d.) stresses the importance of friendship, especially when one is going through rough times. It is good to talk about things that trouble you, but one does have to trust and feel comfortable with the person they are telling it to, which is why (close) friends are so important and just seeing strangers, acquaintances or colleagues might not be enough.

Higher household size related to a lower well-being

Another striking result was that a higher household size was connected to a lower well-being. A reason for this might be that tension are rising faster in these household, when everyone is home, because it gets crowded. Because of corona everybody was forced to work and study from home. Just having everyone at home might be crowded already, but if everyone also needs to be able to work and study, this might become a problem even faster and there might arise some irritations. This is something that was also found in the research of Evandrou et al. (2021), because of being forced to spend more time with the people one lives with, the irritations and conflicts are likely to go up. When the household size is smaller, this might be less of a problem, because it might be easier to find your own quiet space in the house. One could then expect that people living in a higher household would use public space more to find a quiet place, however looking at the results, this was not the case. The American academy of pediatrics (2015) also states that living in a small family comes with lower stress levels and less conflicts than larger families. Next to this, a general fear of corona might also play a role, because having more people in ones home also means more risk for infection.

Length of social interactions went down

Something that was very unexpected was that the length of social interactions went down. Since most interactions are planned during corona times and thus people reserve time specially for that interaction, it was expected that the length would have risen. However, it might be that people kept their interactions short because of fear of corona, so they do not want to meet inside. Therefore, they for example were meeting and talking from the car or the front door or just standing on the street to keep enough distance (Mehta, 2020). These are situations where the interactions are probably not that long, because one is standing or maybe blocking traffic. Another reason might be

that people counted whole school days before corona as one social interaction, so that is a very long time. Since during corona times most schools were closed, these interactions did not happen anymore either and thus the longest interactions were missing. So that might relate to the length going down. This might be the same for restaurant and bars, where maybe diners have been replaced by a drink during the day in the park, which is probably a lot shorter.

People in a relationship are affected more by corona than single people

The fact that people in a relationship were more affected by corona than single people, might partly have the same explanation as the household size. It might be that because one is spending way more time with their partner (if they live together), that there might be more irritations eventually. This is however going against the findings of Hu et al. (2020) who stated that living with a partner reduces depressive symptoms. But a good thing to take into account here, is that the research of Hu et al. (2020) is not conducted in pandemic times, so not while people were in lockdown. This of course brings other and extra challenges, than the normal day to day challenges people were used to in their life and home. Next to this, it might also be the opposite. If one is in a relationship, but not living together. They probably see each other much less, especially in the beginning of corona, which was visible in the social interactions results. This might even feel like suddenly being in a long distance relationship. This might cause a decrease in well-being, since having a relationship purely online (like long distance) has its difficulties and requires a lot of commitment and work. And since for most relationships this is a sudden change, it can even be harder for them mentally (Burns, 2021). And the reason why singles might be happier is because being single, does not necessarily means living alone. Living alone is associated a lot with social isolation, but being single does not mean that one is socially isolated (Oshio et al., 2019).

No people seen studying at Zernike

What was not really expected was the large differences between the outcomes of the survey regarding school/campus and the observations at the Zernike campus. In the survey, studying was both before and during corona the most answered activity, however this was not seen at the observations. Social interactions, eating and drinking and sporting was most observed, even though this was not really shown in the survey. A logical reason for this difference is the fact that only the outside of the buildings was observed and people in the survey might have been talking about what they do inside of the buildings. Also the observations were made closer to summer and thus a bit nicer weather than when the surveys were taken. This might also add to the difference in the results, since when it is warmer outside, people are more likely to sit, eat and relax outside. Harvey and Macphee (2021) stated that when people perceive the weather to be comfortable, they are more likely to sit and spent time outside.

No usage of market square coop

The Market square at the coop in Ruinerwold was not used at all. This was not expected when looking at the survey. Ruinerwold is a rural village and this might play a big role in why it is not used. It might be that young adults living in this place still use a market square, but only use bigger ones in a city nearby. Market squares in cities are usually a lot bigger and also have more things to do on them. For example the market itself is usually much bigger. The small square in a village then can not compete with it and might also not sell the products that young adults are more interested in, since the market square in Ruinerwold only had meat, fish and cheese and no bakery goods or fresh vegetables. According to Zakariya et al. (2014) a good square is a sociable place, which means that people are sitting and hanging out there or for example eating something. A market square will only

enhance this effect, because there are more opportunities to for example buy food and socialize. The fact that young adults were not observed here, does not mean that the square is not good. People from other ages were observed here, doing the above mentioned activities.

Low usage of forest Zuidwolde

Overall, the forest in Zuidwolde was not used a lot, especially when the weather conditions were very good. This might be because when it is very nice weather, young adults are hanging out somewhere else, where they can enjoy the sun. The forest does not really have open space in the form of for example an open field, so the sun gets blocked a lot. Ulmer (2010) therefore stated that the forest has a cooling effect with it is very hot outside. However this might not be what young adults want. They might want to lay in the sun, get a tan and go for a swim. Something which was very visible from the observation at the Koele. This might also be the reason why more older people were observed in the forest at high temperatures. Next to this, there are not really open spaces or places where you can hang out as a group. This might be a reason why groups were not really present in this place. Thing like good seating are for example important to attract and keep young adults in the place (Hatefishojae et al.,2020). In the forest there are benches, but not to cater a whole group.

Sporting and relaxing at the Koele

The koele (forest and lake) was used for sporting and relaxing during corona. The sports did all relate to the water, which explains why it is happening at this place. But it was still not expected, since literature states that during corona large green spaces are only used for the necessary things and thus not sporting and relaxing. However these observations were made later in the corona pandemic, so this might be a reason why it is visible. People might be less careful then they were in the beginning of the pandemic and thus are slowly going outside more. This is something that is observed more. Zaveri (2020) says that people are getting quarantine fatigue. He found that when strict rules go on for more than 1 month, people tend to follow them less. Especially when the weather gets warmer and nicer, people are going out more often, not taken rules into account. Which could be observed at the Koele, because social distancing was not really observed. Next to this the sports that were observed are either very specific (diving and fishing), which are also still very corona safe to do. Or they were related to the weather (swimming), which might be a reason why these results were not very present in the survey, since the observations were taken closer to the summer and thus the weather was in general warmer than during the survey. Even though people should have filled in the survey about the whole period of corona, it is logical is they focused more on the time they filled it in, because it is easier and it might even happened without realising it.

People sporting in Noorderplantsoen (large urban park)

Once again, People sporting seems to still happen in large urban parks/green spaces. In the Noorderplantsoen, a lot of different sports were observed. The basketball court was always used, but also people running, working out or doing something else like rope walking or yoga. As mentioned before, it might be that people are less careful, since corona has been with us for a while. However, people living in the city might also not have a lot of space to work out, so than the park is a good and sometimes their only option. Mutz and Gerke (2020) found that younger people are more likely to maintain their sporting activities than older people in times of corona. People replaced their sporting at clubs and sporting school for home-based work outs or outdoor endurance sports (which were observed in the park).

More people to large urban parks than to neighborhood parks

Overall with the observations of the parks, it was very noticeable that there were way more people present in large urban parks, than in neighborhood parks. In large urban parks, socializing was way more present. This might be because there are more amenities present and it is more inviting to stay in and relax. The initial confusing and being scared of corona because of not knowing what it is, is gone. This might lead people to going outside more, because they feel like they know what to do to not get corona. It was expected that large urban parks were not going to be used, because of crowdedness. (Mehta, 2020; Ugolini et al., 2020). Likewise Shoari et al. (2020) also found that parks were too crowded, they suggested implementations like time slots for certain age groups to manage the amount of people using the park. However, one could also look at it another way, since these urban park are a lot bigger, there is also much more space. Which means more opportunities to keep distance. When looking for example at the neighborhood parks, the walking paths are much narrower than in the large urban parks, so it is hard to keep distance, especially when people are passing from the opposite direction. This could lead people to using large urban parks instead, because you have more space to keep a distance. Next to this, young adults seem to like the fact that there are other people in the park, which is more often the case in large urban parks. They like to socialize and relax within their own group, but the presence of other people and groups is an important element in the attractiveness of the park for them (Aalst & brands, 2020). This relaxing and being in groups is way easier in large urban parks, then in neighborhood parks because of the previous mentioned space available.

6 Conclusion

This research has given insight into the influence of corona on the daily lives of young adults in the Netherlands, regarding among other things their use of (public) space and social interactions. This insight is of importance to understand how young adults are affected by corona and how they behave, which is needed for a basis to be able to improve the conditions for young adults.

In this study, surveys were collected among young adults aged between 18 and 35 years old living in the Netherlands. In this survey, questions about well-being, social interactions, corona measures, use of space and living conditions were asked. Next to this, observations were done at several public spaces. Looking at the results the following conclusion can be made.

6.1 Findings

Looking at the data, a clear statement that can be made is that in this sample the overall well-being of young adults in the Netherlands went down during corona. People were impacted in different ways. The main factors that young adults feel impacted by was the fact that everything is online and that they miss the daily interactions with friends and people from for example school. Overall, they feel very restricted in everything and some people even sought professional help for their mental health.

People also experienced the corona measures in different ways, but overall the limitation in visitation was experienced as the measures that effects them the most. Therefore, it can also be observed that this was the measure that is followed the least by young adults. When looking at the amount of people respondents see within a 1,5 meter distance and the change in well-being, there was no relation visible. Which means that the amount of people one sees within 1,5 meter distance did not affect their well-being in any way.

Overall the social interactions that young adults are having went down during corona. Especially physical interactions went down, online interactions went up. Even though the online interactions went up, people did not seem to like this as a replacement for physical interaction. The meaningfulness of interactions stayed the same, but the overall length went down. Next to this, the interactions with acquaintances went down the most and interactions with neighbors decreased the least

The overall use of public space went down during corona and the use of private space increased. The only public spaces that experienced an increase in usage were the large urban parks/green spaces and the neighborhood parks. The public space which have a pre-determined use and were closed during corona decreased the most in usage. These places are restaurants and bars, shopping malls/streets and school and campuses. Overall, people were still using every place to walk. The restaurants and bars were still used for eating and drinking, but just way less, the same was for shopping malls/streets and shopping. The social interactions were mainly taking place in the two types of parks. People creativeness also went up. People came up with great ideas to replace the activities that normally happened in, for example, restaurants and bars.

From the observations, it became clear that more people were present in large urban parks than in neighborhood parks. Next to this, the large urban parks had more groups in them, and people in pairs or alone were more often observed in neighborhood parks. Sporting seemed to be an activity which was not really found in the survey, but was very present in the observations of the parks.

The perfect public space for young adults seemed to be an open and green space, with enough seating and opportunities to buy food and drinks. A place where people can relax and there is a good vibe. This actually almost seems to be a combination of several types of public spaces.

Regarding living conditions, the use of public space and whether one lives in a village or a city did not seem to have a connection. Next to this, both private space and having a garden did not seem to have a connection to well-being. However, the type of house one lives in did seem to have some influence on well-being. For example, people living on a farm experienced a very large drop in well-being and people in a detached house experienced the smallest drop in well-being. Looking at household sizes, it was found that a smaller household size was related to a smaller decrease in well-being during corona. Looking at living situations, it can be stated that people living alone had less social interactions. Next to this, living with parents or living alone often had a higher decrease in well-being than people living with a partner or with housemates.

So from this research, one can see how young adults were affected by corona, how they behave in public space and what their ideal public space would look like. This could be valuable information for professionals, namely planners, since they can use it as a baseline and a guideline to plan for young adults. The goal is to make the living environment in general better for young adults and their well-being, by also keeping in mind the possibility of another pandemic (hopefully not) and being able to adapt to that. Looking at how young adults were affected by corona, also shows what they find important in life.

6.2 Reflection

Like any research, there were some weaknesses and things that were not foreseen. The questions related to the streets, sidewalks and parking lots were a bit vague for people. With these questions it was intended to unravel, if people were actually meeting on the streets and organizing things. This was mentioned a lot in different literature about behavior of people during the corona pandemic. However, this might not have been clear for people in the formulation of the question. For example in the question about activity in the place, a lot of people answered 'walking' or 'getting from a to b' or 'parking'. Even though this is of course true, this was actually not the information that I was looking for, but I should have specified that in the question. So because of this, there is no information in this research about the meetings on the street as mentioned in the literature.

One thing that was planned to observe during the observations was the edge effect, where people alone or in smaller groups tend to stay at the edges of for example squares and larger group more in the centre. However this turned out to be rather difficult. The edge effect was especially for the squares observations, but at the market square at the coop, there were no young adults. So only the Vismarkt in Groningen remained. What was difficult about this square was that when there was a market, the market was in the middle of the square, so the edge effect was not really observable, since everyone was on the square and there was not really a separation between edge and centre visible, since the stands filled the whole square. On the days that there was no market, it was still rather difficult, because around the square there are shopping streets, which one could call the edges. However, this makes it difficult to observe the edge effect, because then people have other reasons to be at the edges. Next to this, people that were actually on the square, were more passing through than that they were actually on the square. Which also makes it hard to when to count them. So for researching the edge effect, it might have been better to have picked other areas. This is the reason why the edge effect was not discussed further in this research.

Another thing that made this research a bit difficult, is that the survey turned out quite long. The total duration was around 15 minutes. It turned out that this was rather long for people to fill in voluntarily. Which is why posting them on social media like Facebook did not really work. Only the people in my direct network were willing to fill it in. So the duration of the survey would be important to take into account and that people are more willing to fill it in when it is shorter, because now a lot of people just stopped halfway.

But then on a brighter note, Surveyswap was a good solution for this problem. This site worked perfectly for getting the survey out there and getting people to fill it in, even though it was quite long. So this could be seen as a strength for the research, however this might not always work for every age group. Overall, the carrying out of the research, so doing the survey and the observation, was not really affected by corona. It was still possible to get all the data needed without too many difficulties. Next to this, another strength of the research is that multiple methods were used. Also to try to get different insights. For example with the observations getting another outcome than the survey. That shows that it is always good to check whether what you found is actually also the actual situation. It is always good to critically look into your own research and I think that using two methods helped with that.

6.3 Recommendations for future research

Based on this research, there are a lot of follow up questions which could be researched in the future. One of them being the activity and meetings on the street during corona, since this did not really work out in this research because of miscommunication and wrong formulation in the survey, as mentioned in the reflection. This is still really an interesting topic to research, to see if people actually use the street in a different way and if they organise more things and meetings in their neighborhood. Next to this, it might be interesting to look more into the young adults who moved back in with their parents. In this research, it was only asked whether they lived with their parents, but not whether they moved back in or not. This might have a great impact on well-being, since these young adults were used to their independence and when moving back in they lost a part of this and probably had to adjust again.

Another topic which might be very interesting to research further on, is the effect that the amount of infections in an area has on the behavior of young adults or people in general. So if when the corona infections went up in an area, people were also more careful or not and whether they behaved differently. In this research, the influence of corona was discussed as a whole, but not specifically the role that the actual infection numbers play. It might be that people behave very differently when the infection numbers are low, in comparison to when they are high. It could be very interesting to take a more detailed look into this.

Furthermore, an interesting finding in this research was about the perfect public space. This insight is of great importance for planners and can really help to effectively plan for young adults. It would be good to get even more detail in the perfect public space for young adults. In this research, it was only asked what their perfect public space would look like. This of course already gives a lot of information. However, it might be interesting to ask more about why they like certain aspects that they mention, and for example what role location plays in this. I think it would be very interesting to have a future research which is more focused on this specifically (the perfect public space).

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7 Appendices

7.1 Appendix 1 Survey

This survey is for a master thesis project at the University of Groningen. This research project is about the influence of corona on the daily lives of young adults (age 18 - 35) in the Netherlands, with special attention to social interactions and the use of public space.

The respondent will remain anonymous and has the right to withdraw from the research at any point.

The estimated time to complete the survey is about 15 minutes.

For questions you can send an email to: l.onvlee@student.rug.nl

- I have the message and I agree with the terms

Corona measures

1 Rate the following statements on a scale of 1 (Not at all) to 5 (Completely),

- My quality of life is affected by social distancing measure
- My quality of life is affected by the limited amount of visitations measure
- My quality of life is affected by the curfew measure
- My quality of life is affected by the limited amount of people outside measure

2 Rate the following statements on a scale of 1 (never) to 5 (always)

- I follow the social distancing measure
- I follow the limited amount of visitations measure
- I follow the curfew measure
- I follow the limited amount of people outside measure

3 Disregarding your household, how many people do you see within a 1,5 meters distance?

Social interactions

4 What has happened to your amount of daily social interactions in pandemic times (in comparison to before corona)? - with social interactions we count everything that is more than just saying hello to people. **Count both physical and online**

- 1 Very much decreased, 2 Decreased, 3 Somewhat decreased, 4 Stayed the same, 5 Somewhat increased, 6 Increased, 7 Very much increased

5 What has happened to your **physical** amount of daily social interactions in pandemic times (in comparison to before corona)? - with social interactions we count everything that is more than just saying hello to people.

- 1 Very much decreased, 2 Decreased, 3 Somewhat decreased, 4 Stayed the same, 5 Somewhat increased, 6 Increased, 7 Very much increased

6 Indicate for the following groups, what happened to the amount of interactions (In comparison to before corona)

(1 Very much decreased, 2 Decreased, 3 Somewhat decreased, 4 Stayed the same, 5 Somewhat increased, 6 Increased, 7 Very much increased, Does not apply)

- Friends
- Family
- acquaintances
- Neighbors
- colleagues

7 What is the physical/online distribution of your amount of social interactions **before corona** (in percentages (total = 100))

- Physical interaction
- Online interaction

8 What is the physical/online distribution of your amount of social interactions **during corona** (in percentages (total = 100))

- Physical interaction
- Online interaction

9 Rate the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree)

- The length of my social interactions have gone down in pandemic times
- The meaningfulness of my social interactions have gone down in pandemic times
- Online social interaction is a good replacement for physical social interaction

Well-being

10 On a scale of 1 (extremely unhappy) to 10 (extremely happy), How do you feel about your life as a whole **before** corona?

11 On a scale of 1 (extremely unhappy) to 10 (extremely happy), How did you feel about your life as a whole **during** corona?

12 In what ways has corona impacted your life?

Use of space

13 Indicate for all of these public spaces, How the amount of use of these places during corona times has change for you?

1 Very much decreased, 2 Decreased, 3 Somewhat decreased, 4 Stayed the same, 5 Somewhat increased, 6 Increased, 7 Very much increased

- Large urban parks/ large green spaces
- Neighborhood parks
- Playground
- Town/Market square
- Streets/sidewalks/parking lots
- Shopping mall/street
- School/university campus
- Restaurant and bars

14 Which of the public spaces did you use for **planned** social interaction **before corona**?

15 Which of the public space did you use for **planned** social interaction **during corona**?

16 What is the public/private use of space distribution for physical social interactions **before corona**? (where do you have your social interactions?) In percentages (total=100)

- Public space
- Private space

17 What is the public/private use of space distribution for physical social interactions **during corona**? (where do you have your social interactions?) In percentages (total=100)

- Public space
- Private space

18 How often did you meet others in public space **Before corona**?

1 Daily, 2 Several times a week, 3 Weekly, 4 Several times a month, 5 Monthly, 6 Once every 2 or 3 months, 7 Not used.

19 How often did you meet others in public space **during corona**?

1 Daily, 2 Several times a week, 3 Weekly, 4 Several times a month, 5 Monthly, 6 Once every 2 or 3 months, 7 Not used.

20 For what activities did you use these public space **before corona**? (What are you doing when you are in these places?) (If not used, put "na")

- Large urban parks/ large green spaces
- Neighborhood parks
- Playground
- Town/Market square
- Streets/sidewalks/parking lots
- Shopping mall/street
- School/university campus
- Restaurant and bars

21 For what activities did you use these public space **during corona**? (What are you doing when you are in these places?) (If not used, put "na")

- Large urban parks/ large green spaces
- Neighborhood parks
- Playground
- Town/Market square
- Streets/sidewalks/parking lots
- Shopping mall/street
- School/university campus
- Restaurant and bars

22 On average, how much time did you spend in these public spaces per visit **before corona**?

Few minutes, about 15 minutes, about 30 minutes, 1-2 hours, 2-3 hours, more than 3 hours, not used.

- Large urban parks/ large green spaces
- Neighborhood parks
- Playground
- Town/Market square
- Streets/sidewalks/parking lots
- Shopping mall/street
- School/university campus
- Restaurant and bars

23 On average, how much time did you spend in these public spaces per visit **during corona**?

Few minutes, about 15 minutes, about 30 minutes, 1-2 hours, 2-3 hours, more than 3 hours, not used.

- Large urban parks/ large green spaces
- Neighborhood parks
- Playground

- Town/Market square
- Streets/sidewalks/parking lots
- Shopping mall/street
- School/university campus
- Restaurant and bars

24 What spaces and/or activities replaced the meetings in public spaces that closed down during corona times for you? (bv. Restaurants and bars)

25 What does the perfect public space look like for you?

Living conditions

26 Do you have access to a garden?

- Yes
- No

27 To keep a 1,5 meter distance when meeting other people, how many people could you host inside at home?

28 In what type of house do you live?

- Apartment building
- Detached house
- Farm
- Row house
- Semi-detached house
- Room (student housing)

Demographics

29 What is your gender?

- Male
- Female
- Other
- Prefer not to say

30 What is your age?

31 What is your relationship status?

- Single
- In a relationship
- Prefer not to say

32 Where do you live?

33 What would you classify the area that you live in?

- City/Urban
- Village/Rural

34 What is your living situation?

- Living alone
- Living with housemates
- Living with parents
- Living with a partner/spouse
- Living with a partner/spouse and children
- Living alone with children
- Other

35 What is your household size? (including yourself)

7.2 Appendix 2 Filled in Observations

Public Space: Vismarkt

Tijdens markt

Date: 17.00 11/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	25	Couple	Couple	Edge	Buying food
Case 2	2	25	Couple	Couple	Middle	Walking
Case 3	4	25	Male	Friends	Middle	Walking
Case 4	2	20	Couple	Couple	Edge	Buying food
Case 5	2	30	Couple	Couple	Edge	Buying food
Case 6	2	25	Female	Friends		Buying food
Case 7	1	30	Male			Walking
Case 8	2	30	Couple	Couple		Walking
Case 9	1	20	Female			Buying food
Case 10	2	20	Male	Friends		Selling food
Case 11	3	25	Mix	Friends		Walking
Case 12	2	20	Female	Friends		Buying food
Case 13	2	20	Male	Friends		Talking
Case 14	3	20	Female	Friends		Buying food
Case 15	2	25	Couple	Couple		talking

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	20	Couple	Couple	Side	Sitting
Case 2	3	20	Female	Friends	Side	Sitting
Case 3	1	20	Male		Side	Sitting
Case 4	1	20	Male		Side	Sitting
Case 5	3	25	Female	Friends	Middle	Walking
Case 6	2	25	Female	Friends	Middle	Waiting in line
Case 7	2	25	Couple	Couple	Middle	Walking
Case 8	2	25	Male	Friends	Middle	Walking
Case 9	2	20	Female	Friends	Middle	Walking
Case 10	2	25	Female	Friends	Middle	Walking
Case 11	1	25	Female		Side	Sitting
Case 12	2	25	Female	Friends	Side	Talking
Case 13						
Case 14						
Case 15						

Public Space: Vismarkt

Markt

Date: 10.00 14/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	20	Female	Friends		Walking
Case 2	2	30	Male	Friends		Talking + Drinking
Case 3	1	25	Female			Buying
Case 4	2	25	Female			Buying
Case 5	2	30	Couple			Buying with kids
Case 6	1	25	Female			Buying
Case 7	1	25	Male			Buying
Case 8	2	25	Male	Friends		Buying
Case 9	2	25	Male	Friends		Buying
Case 10	1	25	Male			Buying
Case 11	1	25	Female			Buying
Case 12	1	25	Female			Buying
Case 13	1	25	Female			Buying
Case 14	1	25	Female			Buying

Case 15						
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Public Space: Pioenpark Zon

Date: 17.25 10/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	25	Female	Friends	Tennis	Tennis
Case 2	1	25	Female			Walking
Case 3	2	25	Mix	Acquaintances		Walking dog
Case 4	1	30	Male			Walking
Case 5	2	25	Couple	Couple		Walking dog
Case 6	1	30	Male			Walking with kids
Case 7	1	30	Female			Sitting
Case 8	1	30	Female			Walking with kid in a stroller
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						

Case 15						
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Public Space: Pioenpark

Date: 14.00 06/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	30	Female		Path	Walking
Case 2	2	30	Couple	Couple	Path	Walking
Case 3	1	30	Female		Path	Walking with dog and kid
Case 4	2	30	Couple	Couple	Path	Walking
Case 5	2	30	Couple	Couple	Path	Walking
Case 6	1	25	Male		Path	Walking
Case 7	1	30	Male		Path	Walking dog
Case 8	2	30	Couple	Couple	Path	Walking
Case 9	1	30	Male		Side of the water	Sitting with a bike
Case 10	2	25	Male	Friends	Tennis court	Tennis
Case 11						
Case 12						
Case 13						

Case 14						
Case 15						

Public Space: Pioenpark

Date: 9.30 07/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	30	Female		Path	Walking dog
Case 2	1	30	Male		Path	Running
Case 3	1	30	Male		Path	Walking
Case 4	1	25	Female		Path	Walking with dog
Case 5	2	25	Female	Friends	Tennis court	Tennis
Case 6	2	25	Mix	Friends	Picknick bench	Sitting, waiting for tennis
Case 7						
Case 8						
Case 9						
Case 10						
Case 11						
Case 12						

Case 13						
Case 14						
Case 15						

Public Space: Oosterpark

Date: 10.00 07/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	20	Female		Path	Walking
Case 2	1	30	Female		Path	Walking
Case 3	1	30	Male		Path	Walking
Case 4	1	30	Female		Playground with a bench and path	Walking and sitting with a kid
Case 5						
Case 6						
Case 7						
Case 8						
Case 9						
Case 10						
Case 11						

Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Oosterpark

Date: 13.30 06/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	25	Couple	Couple	Path	Walking dog
Case 2	1	25	Male		Path	Running
Case 3	1	20	Female		Path	Walking with dog
Case 4	1	30	Male		Path	Walking with dog
Case 5	2	25	Male	Friends	Field	Sitting with a dog
Case 6	1	25	Female		Path	Walking
Case 7	3	30	Female	Friends	Crossing	Walking with a dog
Case 8	1	20	Female		Path	Walking
Case 9	8	20	Mix	Friends	Little square	Playing a ball game
Case 10	2	30	Couple	Couple	Path	Sitting
Case 11						

Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Oosterpark

zon

Date: 17.10 10/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	30	Female		Path	walking
Case 2	1	20	Female		Path	Skating
Case 3	2	25	Couple	Couple	Path	Walking
Case 4	1	30	Female		Path	Walking
Case 5	1	30	Male		Grass	Photographing flowers
Case 6	2	30	Couple	Couple	Grass	Sitting
Case 7	2	25	Female	Friends	Path	Walking
Case 8	1	30	Male		Path	Walking
Case 9	1	30	Female		Path	Walking with a kid and stroller
Case 10						

Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Koele

15 auto's

Date: 13.30 02/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	30	Female		Near water	Walking dog
Case 2	1	30	Female		Parking lot	Walking dog
Case 3	2	30	Female	Family	Forest path	Walking
Case 4	4	30	Male	Friends	Parking lot	Talking
Case 5	2	25	Couple	Couple	Near water	Walking
Case 6	2	25	Male	Friends	Parking lot	Going diving
Case 7	4	30	Mix	Friends	Parking lot	Going diving
Case 8						
Case 9						

Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Koele

10 auto's

clouded

Date: 10.45 08/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	30	Male	Friends	Lake	Fishing
Case 2	1	30	Female		Path	Walking with kids
Case 3	2	30	Couple	Couple, family	Lake	Sitting with kids
Case 4	2	30	Males	Friends	Parking lot	Talking, going fishing
Case 5	1	30	Male	Family	Parking lot	Diving with someone
Case 6						
Case 7						
Case 8						

Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Koele Zon 20+ 17 cars & lots of bikes Date: 04/06/21 15.00

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	4	25	Male			Drying
Case 2	7	20	Male			Swimming
Case 3	3	20	Female			Laying in sun
Case 4	6	25	Male			Swimming and laying in sun
Case 5	4	25	Mix			Laying in sun
Case 6	3	25	Male			Laying in sun
Case 7	2	25	Couple			Laying in sun

Case 8	1	20	Female			Reading in sun
Case 9	2	20	Couple			Laying in sun
Case 10	3	20	Female			Sitting with legs in water
Case 11	3	20	Male			Sitting at the water
Case 12	13	18	Mix			Swimming, jumping from trees, laying in sun
Case 13	5	20	Mix			Laying in sun
Case 14	2	20	Female			Laying in sun
Case 15	2	20	Male			Swimming, jumping from tree

Public Space: Bos Zuidwolde

regen

Date: 15.10 08/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	30	Couple	Couple	Path	Hiking
Case 2	2	30	Couple	Couple	Path	Walking dog
Case 3	1	25	Female		Path	Running
Case 4	1	25	Male	Family	Path	Walking with someone
Case 5						
Case 6						

Case 7						
Case 8						
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Bos Zuidwolde

Na een bui

Date: 11.00 16/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	4	20	Mix	Friends		Walking
Case 2	1	35	Female			Running
Case 3	1	35	Male			Walking
Case 4	1	35	Male			Walking dog
Case 5	1	35	Female			Walking dogs

Case 6	1	35	Male			Walking with dogs and kids
Case 7	1	25	Female			Running
Case 8	1	25	Female			Walking with dog
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Bos Zuidwolde zon 20+ Date: 04/06/21 14.15

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1						
Case 2						
Case 3						
Case 4						
Case 5						

Case 6						
Case 7						
Case 8						
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Noorderplatsoen

Date: 10.30 14/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	25	Male			Running 2 times
Case 2	6	20	Female	Friends	Koepel	Working out
Case 3	2	30	Female	Friends		Getting coffee
Case 4	2	20	Female	Friends		Sitting bench
Case 5	2	25	Couple	Friends		Working out

Case 6	2	35	Male	Friends		Walking
Case 7	2	25	Female	Friends		Running
Case 8	2	25	Couple	couple		Sitting bench
Case 9	1	25	Female			Running 2 times
Case 10	1	30	Male			Sitting bench
Case 11	1	25	Female			Walking
Case 12	2	25	Female			Walking
Case 13	1	30	Male			Photographing
Case 14	2	25	Female			Sitting
Case 15	2	25	Couple			sitting

Public Space: Noorderplatsoen

Zon 20+

Date: 30/05/21

17.15

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	20	25	Mix	Friends	Basketbal court	Sporting
Case 2	2	25	Couple		Grass	Sitting with dog
Case 3	7	25	Mix	Friends	Grass	Sitting talking
Case 4	2	25	Couple	Couple	Grass	Sitting

Case 5	2	25	Couple		Grass	Sitting in own chairs drinking wine
Case 6	3	25	Male	Friends	Grass	Sitting & talking
Case 7	6	25	Mix		Grass	Sitting
Case 8	3	30	Male		Grass	Chess
Case 9	2	25	Mix		Restaurant	Sitting & drink/eat
Case 10	2	20	Female	Friends	Grass	Sitting
Case 11	2	35	Female			Walking with strollers
Case 12	3	25	Male			Walk + walking rope
Case 13	4	25	Female		Grass	Sitting
Case 14	6	25	Male	Friends		Walk
Case 15	6	20	Female	Friends		walking

Public Space: Noorderplatsoen

Zon 20+

Date: 02/06/21

13.15

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	2	25	Female	Friends	Grass	Sitting & lunch
Case 2	1	25	Male		Grass	Sitting
Case 3	4	30	Male	Friends	At water	Smoking

Case 4	2	25	Male	Friends	Bench	Sitting
Case 5	2	20	Female	Friends	Stairs	Sporting
Case 6	4	25	Mix	Friends	Stairs	Making photos
Case 7	2	All	Mix		Restaurant	Eating
Case 8	2	30	Mix		Grass	Yoga
Case 9	2	20	Female		Grass	Sitting
Case 10	4	20	Mix		Grass	Sitting & eating
Case 11	3	25	Mix		Grass	Sitting & eating
Case 12	2	25	Mix		Grass	Sitting
Case 13	8	25	Mix		Grass	Sitting & eating
Case 14	2	20	Male		Grass	Sitting
Case 15	3	25	Female		Grass	Sitting & eating

Public Space: Zernike campus

Zon hemelvaarstdag

Date: 13.00 13/05/21

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	6	25	Male	Friends	Parking lot	Skating
Case 2	1	30	Male		Picknick bench	Eating + music
Case 3	1	25	Female		Path	Walking

Case 4	5	20	Male	Friends	Soccer field	Soccer
Case 5						
Case 6						
Case 7						
Case 8						
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space: Zernike campus

zon 20+

Date: 03/06/21

13.15

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1	1	20	Female			Walking
Case 2	2	25	Couple			Walking

Case 3	2	30	Male			Walking
Case 4	4	25	Mix			Picknick table
Case 5	2	25	Female		At water	Sitting & eating
Case 6	2	25	Female		At water	Sitting
Case 7	5	25	Mix		At water	Sitting & eating
Case 8	4	30	Mix		At water	Sitting
Case 9	6	20	Mix			Sitting at picknicktable
Case 10	2	30	Male		At water	Sitting
Case 11	4	25	Mix		Restaurant outside	Eating picknick table (multiple)
Case 12	2	20	Female		Bench	Sitting
Case 13	1	30	Female			Walking
Case 14	1	25	Male			Walking
Case 15	5	25	Mix			Walking with masks

Public Space: Zernike campus

Zon 20+

Date: 03/06/21

17.15

Mostly people leaving, either walking or biking - no one sitting anymore

	Size group	Ages	Gender	Relation group	Area in public space	Activity

Case 1						
Case 2						
Case 3						
Case 4						
Case 5						
Case 6						
Case 7						
Case 8						
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						

Public Space:

Date:

	Size group	Ages	Gender	Relation group	Area in public space	Activity
Case 1						
Case 2						
Case 3						
Case 4						
Case 5						
Case 6						
Case 7						
Case 8						
Case 9						
Case 10						
Case 11						
Case 12						
Case 13						
Case 14						
Case 15						