Social Networks, Social Support and Public Parks in Ljubljana

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Abstract

In 2016, almost 75% of the European population lived in cities. (Koceva et al., 2016, p. 9). While some citizens have the opportunity to access nature areas far away from the built environment, others have limited options to do so (Baur & Tynon, 2010). Therefore, there is a growing need for healthy and green spaces. Public green spaces, such as parks; urban forests; and recreational and sports grounds provide convenient recreation options that increase the citizens' well-being (Barbosa et al., 2007). Often, it is proposed that public green space has a number of social benefits. It is suggested that public green space affects the social networks of residents (Kaźmierczak, 2013; Kuo, Sullivan, Coley, & Brunson, 1998; Maas, van Dillen, Verheij, & Groenewegen, 2009). Social interactions in public parks are studied frequently, but little is known if this actually results in a bigger or stronger social network. On top of that, while it is sometimes suggested that urban green space affects social support (Baur & Tynon, 2010; Kuo et al., 1998; Smith, Nelischer, & Perkins, 1997), research is lacking to support this claim. A broader understanding is needed of the relationship between social networks, social support and urban green space. 201 citizens of Ljubljana, Slovenia, filled out a survey about the urban green spaces they visit, their social network and the amount of social support they receive. Residents that visit green space have more strong ties than residents that do not. On top of that, residents that visit green space in the neighbourhood, have more weak ties within the neighbourhood. The amount of social support received, is bigger for those that go to parks, but this is completely mediated by the fact that they have more strong ties. Further research is needed, to find out if this is really caused by social interactions in parks, or if this has other grounds.

Preface

In the past year I stepped into the world of human geography. As a student coming from a technical university, this is quite a shift in the way of thinking. I enjoyed my past year at Utrecht University and learned so many new things. In April, I moved to Ljubljana to write this thesis. I had a great time there, doing my internship at IPOP, the Institute of Spatial Policies. The work of past months resulted in the thesis that now lies in front of you.

This thesis would not be, if not for a number of people. First of all, I would like to thank my supervisor Gerald Mollenhorst for all the feedback that he gave past months. Thank you for guiding me through the long process of writing a master's thesis. I would like to say thanks to all colleagues at IPOP for giving me a place at their office and answering the infinite questions I had about Ljubljana and Slovenia. I had a great time with you and will remember the many great and interesting discussions we had. I would like to thank Aidan Cerar of IPOP in particular, that helped me with my process on a regular basis.

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Table of contents

List of Figures

List of Tables

List of Abbreviations

GIS   Geographical Information System

SES   Socio-Economic Status

SN   Social Networks

SP   Social Support

SURS   Statistical data office of Slovenia

PST   Path of Remembrance and Comradeship

1 Introduction

In 2016, almost 75% of the European population lived in cities (Koceva et al., 2016, p. 9). As cities grow in size, the contact of residents with nature should be maintained, for physical and mental well-being (Barbosa et al., 2007). While numerous urban residents have the opportunity to enjoy the nature that is distant from their home, those with less options to go far away from their residential area, have to limit their options to places nearby. Therefore, the need for healthy and green spaces within cities increases. Public green spaces, such as parks; urban forests; and recreational and sports grounds provide convenient recreation options that are available for these citizens (Baur & Tynon, 2010). There are a number of studies that try to capture the benefits of these spaces. These widely vary, from physical and health benefits, such as decreased obesity and stress-related illnesses, to environmental gains, such as reducing the urban heat effect (Wolch, Byrne, & Newell, 2014). Moreover, many studies take an interest in the social benefits of urban green space, such as community building, social cohesion and social interaction between individuals (Anquetil, 2009; Germann-Chiari & Seeland, 2004; Jennings & Bamkole, 2019; Kaźmierczak, 2013; Krellenberg, Welz, & Reyes-Päcke, 2014; Maas et al., 2009; Nordh & Østby, 2013; Peschardt, Schipperijn, & Stigsdotter, 2012; Peters, 2010; Peters, Elands, & Buijs, 2010; Rasidi, Jamirsah, & Said, 2012; Seeland, Dübendorfer, & Hansmann, 2009). This research adds to the body of research in the social benefits of public green space research. It will research how urban green space affects (informal) social support of citizens, by influencing the social networks of these citizens.

1.1 Problem statement

A social network is a web of social relationships that surround an individual (Heaney & Israel, 2008). The functions of social networks include the exchange of social support. Social ties in an individual's social network act differently. The strong ties of a person, e.g. the family, are often close-knit and homogeneous on multiple dimensions. Emotional support often comes from the strong ties (Heaney & Israel, 2008). Weak ties are less homogeneous than strong ties, meaning they are more diverse in lifestyle. Granovetter (1973) argues that only weak ties could function as bridges between groups of close-knit networks. Individuals with more weak ties will have better access to social resources.

Often, it is suggested that public green space affects the social networks of residents. The reasoning behind this is, that through social interactions that happen in the green space, ties are formed. However, while social interactions in public parks are studied frequently (see e.g. Kaźmierczak, 2013; Krellenberg et al., 2014; Peters et al., 2010), little is known if this actually results in a bigger or stronger social network. To date, only a few studies explore this:

○ Kuo, Sullivan, Coley, & Brunson (1998) compare the social networks within the neighbourhood of two resident blocks: one with and one without green space in front of it. They found a positive relationship between green space and the neighbourhood social network. However, this research misses a few key points that might be of influence on the relationship. As an illustration, it does not take into account the possibility of residents going to different parts of the city to dwell

in another park. This might considerably change the influence of parks on an individual's social network.

○ Maas et al. (2009) examine whether the amount of green space in the living environment influences the amount of social contacts of individuals. They measure amount of green space as a percentage of the area that is in a radius around the persons home. They did not find a significant relation. However, they failed to measure if residents actually use this green space or not. Where Kuo et al. (1998) measure actual use of green space through questionnaires, this study uses spatial analysis to find the percentage of green space. If they would have measured the actual use of green space, the same study could have a different outcome.

On top of that, while it is suggested that urban green space affects social support (Baur & Tynon, 2010; Kuo et al., 1998; Smith, Nelischer, & Perkins, 1997), research is lacking to support these claims.

Hence, a broader understanding is needed of the relationship between social networks, social support and urban green space. Existing research mainly researches green space in the vicinity and therefore measure social network ties that are in the neighbourhood of the resident. Research lacks that measures green space use further away than the neighbourhood and its possible relationship with bigger or stronger social networks in terms of family and friends. Not only will this research address this gap in research, it can also help form more liveable cities. Urban planners, policy makers among others could use the insights gained in this research, to design green space more appropriately, especially for those with the least accessibility options, that cannot make use of nature areas further away from the city.

1.2 Research objectives and research questions

The main goal of this research is to create a better understanding of public green space benefits in developing and strengthening social networks and (informal) social support. Moreover it tries to add to the body of knowledge of the use of green space in the context of Ljubljana, Slovenia. The capital of the country was also chosen as green capital of Europe. Therefore, green space ought to be of good quality in the city. It is regularly proposed that the social benefits of green space are bigger in neighbourhoods with a lower socio-economic status (SES). This relationship is often diffused with urban green space not being well-spread in the city, or not being of good quality in parts of the city. Therefore, Ljubljana makes a good context for this research. No (English-written) research to date studies the social networks of residents of Ljubljana in relation to green space. The research question is:

How does the use of public green space influence access to social support of residents in Ljubljana, mediated by social networks?

To answer this research question, a few steps should be taken. Firstly, the spatial distribution of public green space should be examined. Next to that, the relation between the use of public green space and the size and composition of social networks should be investigated. Lastly, the link between social networks and social

support should be studied. These steps are formulated into sub-questions, that are elaborated on respectively.

1. *How is the quality of parks spatially organized in neighbourhoods of Ljubljana?*
Before determining the influence of the quality of public green space on social networks and social support, it is crucial to know how parks are spatially organized in the city. While the city of Ljubljana is very green as a whole (Poljak Istenič, 2016), this could vary between neighbourhoods. A study in Sheffield, UK, finds that public green space is most accessible to both deprived groups and older people. On the other hand, places where green is more privately provided, in terms of gardens, public green coverage is reduced. This indicates that in richer neighbourhoods, the coverage of public green is less, with a possible explanation that households that already have a garden have less need for public green (Barbosa et al., 2007). In a study in Phoenix, USA, others find that the abundance of vegetation decreases if the socio-economic status (SES) of the neighbourhood increases, but the richness of landscape vegetation increases together with the SES (Martin, Warren, & Kinzig, 2004). Hence, it is difficult to predict where in a city green space will be better provided or of better quality. It cannot be assumed that any neighbourhood in Ljubljana has better public green than others and therefore this needs to be researched.

Next to that, there is a difference in conceived and perceived quality. Individuals go to certain parks, for they like some and don't like others. This is a combination of some factors, such as how they perceive the park, in terms of aesthetics, accessibility and/or amount of amenities. However, perception does not actually give insight into how the quality of visited parks is relative to other parks. Conceived quality can be measured with GIS, in terms of amenities (number of benches and tables; playing fields and sport areas) and distance to parks. Since both types of measures are valuable, they are combined in this research. This combination of objective and subjective measures is proposed by Maas et al. (2009).

2. *How does the quality of parks contribute to the social network of individuals in Ljubljana?*
Most studies to date that research the social contacts of individuals in relation to parks, examine social interaction in these parks. Based on the outcomes of these studies, some assumptions are made. A study in the Netherlands examined the park use of non-Western migrants Utrecht, Haarlem and Arnhem. Visitors of parks in their case studies did not actively interact with strangers, thus it is assumed that visitors did not form new ties, while going to the park more often (Peters et al., 2010). Rasidi et al. (2012) had a similar conclusion in a study executed in Malaysia and contributed it to the fact that in modern society it is not common anymore to have social interaction with strangers. However, regular visits to green spaces have as consequence that visitors recognize faces of strangers, making them familiar.

This is in line with research by Maas et al. (2009), again in the Netherlands. While previous mentioned studies of Peters et al. (2010) and Rasidi et al. (2012) only considered interaction in parks as object of study, Maas et al. (2009) included the social ties of park visitors. They came to the conclusion that, while individuals that live in the vicinity of more green space did not have more neighbourhood contacts or

friends, residents did feel more attached to their residential area. Children, elderly and people with a lower SES however, did benefit from green space in terms of social ties. Kaźmierczak (2013), found that visitors of a park in Manchester, UK have a higher number of social ties than non-visitors. For establishing social ties however, areas needed to combine a good quality of parks and the right neighbourhood characteristics, like low crime and low material deprivation. Concluding, the results from existing studies on social networks and public green are mixed and needs more investigation.

3. How does the social network of individuals influence the amount of social support?

To answer the main research question, this last sub-question needs to be answered. Social networks and social support are thoroughly related: the latter is commonly studied as a network. Social support is seen as one of the important functions of social networks, next to social capital, social influence, social undermining and companionship (Heaney & Israel, 2008), therefore there is no question about the relation between these. There are a number of types of social support, including emotional and physical support. Often, neighbours are, because of their proximity, the ones that give physical support (Unger & Wandersman, 1985), while family and friends are often the ones that give emotional support (Heaney & Israel, 2008). However, also strong ties that live in the neighbourhood are capable of giving emotional support (Henning & Lieberg, 1996; Unger & Wandersman, 1985). This research focuses on emotional support. Both groups, friends/family and neighbours are important in this research, since individuals go to parks mostly with friends and family (Maas et al., 2009), but the chance to spontaneously meet neighbours is high in neighbourhood parks, since they are living nearby.

1.3 Research methodology

This section will give a short introduction to the research methodology used to achieve the research goal. A cross-sectional research design is chosen, with a quantitative survey in two districts of Ljubljana, complemented by a spatial dataset on parks in the city. The quantitative questionnaire is a primary dataset of 200 respondents, that is gathered by door-to-door surveying. It is translated into Slovene, to avoid a possible language barrier with non-English speakers. The spatial dataset is stemming from SNAGA, a municipal organization that maintains the green space in the city. This dataset will be used to evaluate green space on its size, distance to respondents and amenities with the help of a Geographical Information System (GIS).

1.4 Research scope

This research focuses on the influence of green space on social networks and social support. A thesis has its limitations, especially in time and resources. Since this research has a cross-sectional research design, it will be difficult to find causal relations. It is not in the scope to seek for causality, rather for a possible relation between green space, social networks and social support. The full research is completed during one semester, but the data gathering is limited to the time the researcher is on the location, between April and August 2019. The geographical focus

of the study is limited to two districts in Ljubljana, Slovenia. This is mainly due to practical limitations. The two districts chosen, Rožnik and Moste are disparate in built environment, where the first is more affluent than the latter. The population in this study is the residents of these two districts.

1.5 Reading guide

This last section deals with the structure of the thesis. Chapter 2 will establish the theory and explain the key concepts of green space, social networks and social support. This is followed by chapter 3, that sets the background of the thesis, Ljubljana. Chapter 4 describes the methodology and will operationalize the key concepts. Chapter 5 reveals the results and chapter 6 will summarise and discuss these.

2 Theoretical framework

To answer the question "*How does public green space in Ljubljana influence social support, mediated by social networks?*", a theoretical framework has to be established. In this framework, the key concepts are described. These concepts are *green space, social network* and *social support*. This thesis uses the focus theory to explain the development of ties in a social network. This theory will be elaborated on after the key concepts.

2.1 Key concepts

2.1.1 Green space

Green space research stems from a range of disciplines, including medical sciences, urban planning and ecology. Taylor and Hochuli (2017) did a meta-research of greenspace and found that the definition of green space widely differs and no clear pattern can be found within each field. Some papers do not give a definition at all. Others give a definition, by providing a range of examples what can be considered green space, like parks, open land and gardens. Two main interpretations of green space can be found. The first refers to 'bodies of water or areas of vegetation in a landscape' (Taylor & Hochuli, 2017, p. 29). This can be understood as the overarching concept of nature. The second refers to 'urban vegetation' and is a subset of the first interpretation. Green space in this interpretation is limited to the urban environment and needs planning and human involvement to be successful. It is the predominant focus in green space research and also the interpretation of this research. Multiple meanings of green space exist and differ based on the topic of research. It is not useful to try to suggest a single definition of green space (Taylor & Hochuli, 2017), but rather a topic-specific definition. Moreover, this research confines to public green space and excludes private. This thesis will use the same definition as Akmar, Konijnendijk, Sreetheran, and Nilsson (2011). They define public green space as "*forests, parks, water bodies, recreational and sports grounds*".

Often, studies in green space try to capture the benefits in one of the four, interrelated, categories: mental and physical health benefits; economic gains; environmental benefits; and social benefits (Kabisch, Qureshi, & Haase, 2015). The first category in green space benefits stems from the health and medical sciences fields. Park proximity is related to physical activity, which enhances health and reduces risk for many chronic diseases. The economical gain in parks can be found rising real estate prices. Two examples are the High Line (Loughran, 2014) and the Bloomingdale Trail (Rigolon & Németh, 2018), that both caused hypergentrification in New York and Chicago respectively. Environmental benefits include a cooling effect, reduction of air pollution and holding the groundwater. Lastly, social benefits of green space include social cohesion and rising neighbourhood ties. Since this research falls under the last type of research, this will be elaborated on later.

Urban green space is in particular beneficial for those with limited accessibility options. For example, citizens that do not have access to recreation areas far away from the city, are bound to nature areas within, or nearby the city. Reasons are numerous: an individual could lack time, money, have no car or driving license. However, many inequalities persist: in the United States, the residents of more

affluent suburbs have more green space in their proximity, than lower-income residents of the inner-city suburbs (Wolch et al., 2014). The socioeconomic status of neighbourhoods can even predict the richness of the landscape vegetation (Martin et al., 2004). It should be considered that both these studies are in the USA. A study in Sheffield, UK finds that deprived neighbourhoods and neighbourhoods with relatively older residents often have a better accessibility to public green space than wealthier neighbourhoods (Barbosa et al., 2007). Yet the same study found that private green space has a negative correlation with public green space, indicating that wealthier neighbourhoods do have green space in the vicinity, may it not be public. Nonetheless, a reduction in public green space did correspond to only a small increase in private gardens, meaning that the overall coverage of public and private green space is less in wealthier neighbourhoods. Apart from green space coverage, it is found that public green space benefits are more pronounced in more deprived communities (Barbosa et al., 2007; Maas et al., 2009). Therefore, the need to have accessible and qualitative green space is especially high in these areas.

2.1.2 Social networks

The next concept to elaborate on is social networks. Social network research is based upon the idea that relations and patterns formed by these relations create social life. Social networks yield power and shape life chances (Daly & Silver, 2008, p. 544) and are therefore a useful concept to research in the light of social exclusion. This thesis builds on the proposition that an "*individual's social network consists of those persons with whom he maintains contact and has some form of social bonds*" (Adams, 1967, p. 64). It is the product of regular and recurring interactions and the exchange of information. Through frequent interactions, like face-to-face contact, ties are formed and/or strengthened.

Social networks are often grouped in common role relations. Role relations are categories of ties, such as family, friends, neighbours and co-workers. These categories can be studied in size and strength. The benefits of tie strength is one of the common debates within social network research (Mathews, White, Long, Soper, & Bergen, 1998). Granovetter (1973) argues that weak ties, unlike strong ties could function as bridges between different clusters of strong ties and therefore give access to new resources. Strong ties, however, are more related to emotional support (Heaney & Israel, 2008).

Two different forms of data analysis can be identified: the bird's-eye perspective, or complete network analysis, and the egocentric view. The former analyses the social structure of a full network. The network as a whole is at the center of research, rather than focussing on one node or multiple nodes. An egocentric network on the other hand, takes the network around one node as a focus. The relations around this node are the objects of study (Marin & Wellman, 2011). Egocentric networks are beneficial for a research where the boundary of a network is not known, or the network is too big to analyse, while the birds-eye perspective is useful when researching a network that has a clear boundary (e.g. a company). The setting of this research will be two districts in Ljubljana. Therefore, the logical step is to take an egocentric view here.

2.1.3 Social support

Social support is defined as 'aid and assistance exchanged through social relationships and interpersonal transactions' (Heaney & Israel, 2008, p. 191). Since social relationships are at the base of social support, they rely heavily on the social network of an individual. If an individual lacks a strong social network, the likelihood of insufficient social support is bigger. Giving and receiving social support is a primary function of social networks. Other functions are social capital, influence, undermining and companionship. Social support diverts itself from the others, because it is the only function that always is intended positive and helpful (Heaney & Israel, 2008). Social support improves one's physical and mental well-being (Lin, 1999). For example, it has been shown to help with recovering and coping with illness multiple times (Heaney & Israel, 2008, p. 196).

Social support can be divided into four types: (1) *emotional support*: the provision of empathy, love, trust and caring; (2) *instrumental support*: the tangible aid and services that directly assist a person in need; (3) *informational support*: the advice, suggestions and information that a person can use to address problems; and (4) a*ppraisal support*: the information that is useful for self-evaluation purposes (Heaney & Israel, 2008, p. 190). This research will concentrate on the first type of support: emotional support. Emotional support is often stemming from friends and family. Individuals in close geographical proximity are often the persons that give instrumental support (Heaney & Israel, 2008). However, Unger & Wandersman (1985) mention the social component of neighbourhood social support. They distinguish two types of emotional support that a neighbours can contribute to. Firstly, sociability support is casual interaction that serves as a source of social belonging and reduction of feelings of social isolation. Neighbourhood social networks can provide socioemotional support, if more intimate relationships develop. In contrast to sociability, it involves obligations of reciprocity. In the previous section, it is speculated that individuals that go to parks in the neighbourhood more, also have more social ties within the neighbourhood. In particular in lower-class and working-class neighbourhoods, neighbourhood ties serve as a form of informal socio-emotional support (Unger & Wandersman, 1985).

2.2 Focus theory

That social networks develop through social interaction, does not give us insight into how and why these interactions take place. The development of social ties is not only a function of the people involved, but also the setting (Coley, Sullivan, & Kuo, 1997). A theory that can help us with discovering the patterns of social networks, is the focus theory, described by Feld (1981). He defines a focus as '*a social, psychological, legal or physical entity around which joint activities are organized*' (p. 1016). These foci are the incentives to come together with one another. The nature of a focus varies a lot: the family, the school or a common hobby all can be foci. The focus is the reason to interact with one another, forming ties consequently. Two main variations in foci can be identified. These are the constraint and the size. The constraining measure deals with the amount of interaction that is likely to take place. In a focus that is very constraining, everyone has to interact with one another. Therefore, all individuals will have some tie to each other. Conversely, if the focus is not constraining, the likelihood

of individuals within the focus being tied to each other is only slightly higher than of two individuals in the general population. An example of a high constraining focus is the family, while a low constraining focus could be the local supermarket. The second measure of a focus is size. This refers to the amount of individuals that the focus organizes the activities of. Broadly speaking, small foci are more constraining than big foci (Feld, 1981).

2.2.1 Parks as focus

An encounter usually occurs at a point in time and space, where two people share the same geographic location, or, in the words of Feld, a physical entity or focus. This context can be of influence on the encounter. In principle, urban spaces hold the opportunity to see and hear others in an undemanding way. Therefore these spaces stimulate social interaction. A hostile environment however, does not stimulate any social interaction among people. Green space is a type of public space, that is particularly friendly and attractive (Baur & Tynon, 2010; Kuo et al., 1998). Within green space, multiple subtypes can be found. Some of these subtypes, like a green stroke adjacent to an avenue, could be aesthetically pleasing, or beneficial for reducing the urban heat effect. However, they will not stimulate social interaction, such as other green spaces could. For this thesis is interested in which spaces encourage social interaction, a narrower definition preferred over green space. A main motivation of using parks is to socialize with one another (Peschardt et al., 2012) and is a logical choice of green space to research into. Consequently, parks will be used as a physical type of focus in this thesis.

The group of people using parks is large, so the chance of meeting new people is big. On the other hand, there is no obligation to talk to these co-visitors. Therefore it could be said that a park as a focus is big in size, but small in constraints. However, no entity of green space is the same. Different kinds of parks will act as different foci. Two types of measures that influence the constraints can be distinguished: quantitative measures and sub-foci. These will be explained in the following two sections.

Quantitative measures: size of and distance to parks

The quantitative measures can be divided into size and distance. First of all, the size of green spaces will change the nature of the focus. A small park, like a neighbourhood park, will have a smaller pool of visitors. Therefore, visitors are more likely to meet others that they already have seen in an earlier visit to the park. Similarly, a park that is nearby the visitors residential area, will have more visitors that are also living in the area. The chance that these individuals share other foci, such as the local sports association, the same supermarket or even living block, is higher than when the individual goes to parks that are further away from their home. Sharing multiple foci will increase the likelihood of individuals to already have a tie together and therefore interaction will be more likely as well. A large focus is less constraining, therefore a city park will be less constraining than a pocket or neighbourhood park. Secondly, parks that are used as a neighbourhood park will have visitors that live close by each other. Therefore, they are likely to share other foci as well - the local sports association, living block or doing groceries at the same supermarket. One of the

propositions of Feld's theory on foci is that sharing multiple foci will increase the likelihood of individuals to already have a tie together and therefore interaction will be more likely as well (Feld, 1981). The remainder of this section will elaborate on some research into the relation between size and distance of parks and social ties.

Coley et al. (1997) found that residents in a neighbourhood with more public green space will have a higher amount of neighbour social ties than residents of those with less public green space. The mechanism at work here, is that residents use green public space more than barren public space. Trees and grass help attracting residents to go outside and simply use the public spaces in their neighbourhoods. People living nearby green space go out more to visit these spaces more frequently than people not living nearby. Therefore, the frequency of face-to-face contact with neighbours is higher. Face-to-face contact is at the basis of social tie development and therefore social ties with neighbours will be higher in green public space than in barren public space. Peters (2010) calls this phenomenon *public familiarity*. Coley et al. (1997) tested other explanations to why residents in a neighbourhood with public green space will have a higher amount of neighbour social ties, than residents with those with less public space. These included the possibility of less stress or mental fatigue in green than in barren spaces, or a better mood. These were not found to be of influence (Coley et al., 1997).

Peters et al. (2010) place their doubts by the statement that residents that go to green space often have more ties within the neighbourhood. They rightfully propose that the interaction between visitors of parks is usually confined within the group that the visitors plan to go to the park with. These groups usually consist of family or friends that do not necessarily share the same neighbourhood. This however, does still mean that visitors leave the isolation of their apartments and socialize with one another. While it does not strengthen ties within the neighbourhood, it does add to tie strength between friends or family. Another reason for doubts could be that residents do not go to green space in the neighbourhood, but to green spaces that are elsewhere in the city. The chance of meeting neighbourhood residents there is significantly lower and therefore a frequent visit to these green spaces will not affect the ties within the neighbourhood. With all this in mind, a few hypotheses can be proposed.

H1a: *More frequent visits to public green space is positively associated with the amount of strong social ties.*

H1b: *More frequent visits to public green space is positively associated with the amount of weak social ties.*

H2a: *More frequent visits to public green space within 1km of the resident's home is positively associated with the amount of strong social ties with neighbours.*

H2b: *More frequent visits to public green space within 1km of the resident's home is positively associated with the amount of weak social ties with neighbours.*

H3a: *Residents that do not go to neighbourhood parks (< 1km of their home), but do go to parks do not have more strong social ties with neighbours than residents that do not go to parks.*

H3b: *Residents that do not go to neighbourhood parks (< 1km of their home), but do go to parks do not have more weak social ties with neighbours than residents that do not go to parks.*

Social support is a function of social networks. Above all else, friends and family ties are the givers of emotional support. Neighbourhood ties are usually weak ties. These neighbourhood ties are widely known to give instrumental support. A type of aid is returned in a different form than originally received. Unger and Wandersman (1985) give the example of someone that offers babysitting, gets a carpenting job in return by a skilled neighbour. However, strong ties that live in the neighbourhood give emotional support as well as physical (Henning & Lieberg, 1996; Unger & Wandersman, 1985). In particular in lower-class and working-class neighbourhoods, the neighbourhood ties serve as a form of informal socioemotional support (Unger & Wandersman, 1985). Kuo et al. (1998) found that residents of neighbourhoods with more green space as public space, did not only know more neighbours, but also had more neighbours that helped and supported them. Therefore, it is hypothesized that:

H4: *Residents that go to parks with friends or family often, receive more social support*

H5: *Residents that go to parks in the neighbourhood often receive more social support by neighbours*

Sub-foci: amenities and activities
Within parks there are amenities and activities that I will call sub-foci. A sub-focus is, like a focus, an entity around which joint activities are organized. These sub-foci are confined within parks. They attract a smaller amount of people and therefore they are smaller in size. Sub-foci are also usually more constraining. This section shall describe some, including children's playgrounds, sport facilities and dog walking.

   A children's playground is an amenity that attracts similar people: families with young children. Playgrounds are spaces that are made to facilitate interaction between children. However, they can also support interaction between the parents (Bennet, Yiannakoulias, Williams, & Kitchen, 2012). To socialize with other adults, is an important motive to go to a playground (Refshauge, Stigsdotter, & Cosco, 2012). Therefore, the choice of playground is partly made regarding this aspect. Playgrounds that are easy to interact with others, are preferred over other playgrounds. The socializing character of the playground is formed by seating facilities, like benches or picnic tables, or shady areas (Bennet et al., 2012; Refshauge et al., 2012). The same could work for sports facilities, that usually consist of fitness tools. Interaction is more likely to happen with these facilities, since similar people make use of these facilities. The third sub-focus that needs to be explained is *dog walking*. Walking in the park with a dog increases the likelihood of social interactions between the pet owner and

other park users. Dogs can work as 'ice-breakers' between individuals, through serving as conversation starter (Messent, 1983 in McNicholas & Collis, 2000). Especially interactions with strangers are more likely, when walking with a dog, compared to walking without a dog (McNicholas & Collis, 2000).

Concluding, the type of activity performed in the park and the amenities in the park could be of influence on the occurrence of social interaction. Both are relevant to take into account in this research. A few hypotheses can be constructed regarding the social activities and amenities in parks.

H6: *Visitors of public green space with amenities will have more social ties than visitors of public green space without amenities.*

H7: *Visitors of public green space that perform 'social' activities in parks have more social ties than those visitors that do not perform 'social' activities.*

Individual and spatial factors
Some personal and spatial factors will influence the relationship between green space and social networks/social support. Maas et al. (2009) found that children and elderly benefit more from green space in the vicinity than adults below 65. The same holds for people with a lower socioeconomic status. Maas et al. measured green space as the percentage of green space in someones residential area, not as the actual usage of green space. Consequently, it is not known if the fact that children, elderly and people with a lower socioeconomic status having a broader social network is because they come more often to the green spaces. It could be that both age and socioeconomic status are explained by the fact that these groups have limited accessibility options. The choice of which parks someone goes to, depends on personal factors that limit mobility. Having young children; being of old age influence the distance willing to go to visit a park (Schipperijn, Stigsdotter, Randrup, & Troelsen, 2010). Conversely, younger adults have more time and thus are more mobile within the city. Therefore, it could be said that younger people do not care about distance and rather choose a park based on their lifestyle.

As women tend to have a larger social network than men (Kendler et al., 2005 in Kaźmierczak, 2013), gender will be taken into account as a control variable as well. Lastly, Peters et al. (2010) found a considerable difference in green space use between ethnicities. Therefore, ethnicity will be included as well. Spatial factors could influence as well. In section 2.2.1 it is said that in lower- and working class neighbourhoods, neighbourhood ties will be strong ties more often than in other neighbourhoods. Therefore, the two case studies (one more affluent than the other) will be included.

2.3 Summary and conceptual model
In this chapter, the theoretical framework is established. The focus theory will be used to study the influence of parks on social networks and social support. This theory says that there are entities around which activities are organized, that form the social ties of individuals. These entities can be social, but also physical. Parks will be the focus that

is studied in this research. These, measured in size, distance, amenities and activities are hypothesized to influence the social networks of individuals. The social networks are studied in size, strength and category (family/neighbour/friend/co-worker). Subsequent, these networks define the amount of (informal) social support that an individual could get. This results in the conceptual model illustrated in figure 2.1.

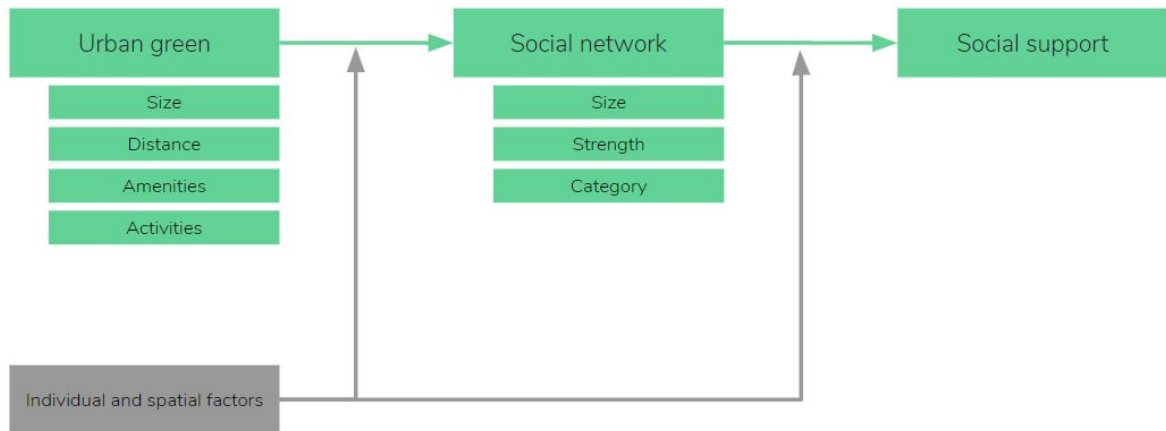The next chapter will set the spatial context of this research.

Figure 2.1. conceptual model

3. Regional framework

After elaborating on the key concepts and theory, it is time to set the context of this research. This research will be executed in Ljubljana, Slovenia. The Republic of Slovenia is a post-socialist welfare state that got its independence in 1991. Following its independence, it was accepted in the European Union (EU) in 2004 as one of the first Central or Eastern countries. While many post-socialist countries in the EU experienced a welfare gap, Slovenia didn't. Instead, it was one of the most successful transition countries in economic growth and standard of living (Filipovič Hrast & Rakar, 2017).

The sense of neighbourhood in Slovenia is high (Hrást & Hlebec, 2012). Individuals have more strong ties within the neighbourhood. There are multiple explanations for this. One of the possible explanations is the amount of self-construction within the socialist regime. The share of self-help construction in 1984 was 24.6% (Mandič & Clapham, 1996). The self-built houses were usually made with the help of families, but also with the help of neighbours. Therefore, relations with the neighbours were stronger. However, after the transition, self-building decreased and therefore ties within the neighbourhood potentially decreased as well (Hlebec et al., 2010). Next to that, the sense of neighbourhood in Slovenia is higher for vulnerable groups, like elderly and individuals with less income. They are more involved with the neighbourhood, because they have fewer options to go somewhere else to socialize. Neighbourhoods are strongly socially mixed, as a result of the socialist policy and therefore the more vulnerable live in neighbourhoods of high quality, hence a reason for stronger attachment (Hrást & Hlebec, 2012).

Not only neighbourhood networks are context (or country) specific, also family and friend networks differ between countries. In mediterranean, or family-oriented welfare states the role of the social network is central in serving for social security (Murie & Musterd, 2004, p. 1449). This is opposed to other countries, like the Netherlands, where redistribution provides for support. Because Slovenia did not experience a welfare gap, inequalities became less pronounced than in other formerly communist countries. The involvement of the state remained high and therefore, redistribution in Slovenia is high: in the income inequality index of the European Union, only Czech Republic is more equal than Slovenia (Eurostat, 2017). On the other hand, Filipovič Hrást and Hlebec (2012) research the social networks of the Slovenian population and finds that Slovenians are, like the Southern European countries, very family-oriented. Therefore, the relation between social networks and social support in Slovenia is interesting to research, since both social networks and the state could provide for social support.

Concluding, in Slovenia the neighbourhood and family networks of individuals are relatively strong, compared to the rest of Europe (Hrást & Hlebec, 2012). This research takes place in Ljubljana. There are no (English-written) study available that researches these in the city of Ljubljana.

3.1 Ljubljana

Ljubljana is the capital city of Slovenia and has a total population of 288.919 in 2018 (SURS, 2018). It is divided into seventeen districts, that have a population ranging

from 5.000 to 35.000. Because of past socialist policy, the districts in Slovenia are strongly socially mixed, where a high share of poorer and less educated people live in neighbourhoods of good quality (Filipovič Hrast, 2008). Ljubljana is no exception to this. A few differences between districts can be found however, that will be investigated in section 3.2.

Twenty per cent of the land in Ljubljana is protected with an environmental status (Strojin Božič et al., 2015). Preserving green areas have been one of the top priorities for the city (Poljak Istenič, 2016) and therefore these take a considerable amount of space in the city. The big green areas that are of importance for the whole city include: Tivoli, the city park in the center, the Ljubljansko barje Landscape Park, that is on the UNESCO list and the Path of Remembrance and Comradeship, a green belt around the city of 35 kilometers. On top of that, formerly degraded areas have been turned into green spaces for socializing and recreational purposes throughout the whole city (Poljak Istenič, 2016).

A park could be used as a community space for residents living nearby, or as a community space for residents that serve a similar lifestyle rather than living in proximity. Visiting parks that are used as a community space, will enhance a more local social network than visiting parks that are used by people with a similar lifestyle. A research in Ljubljana finds that two parks that are similar in size have a different sense of community. The first case has a high sense sense of neighbourhood, where the residents nearby form a closely knit community. In the words of the focus theory, residents form multiple foci together and therefore are more likely to be(come) strong ties. The residents nearby the second green space that was studied, did not have a high connectedness. The community network there formed more around lifestyle characteristics (Cerar, 2014). Therefore, parks in Ljubljana can serve different purposes and can be ground for various kinds of social networks, either more local, or more lifestyle based.
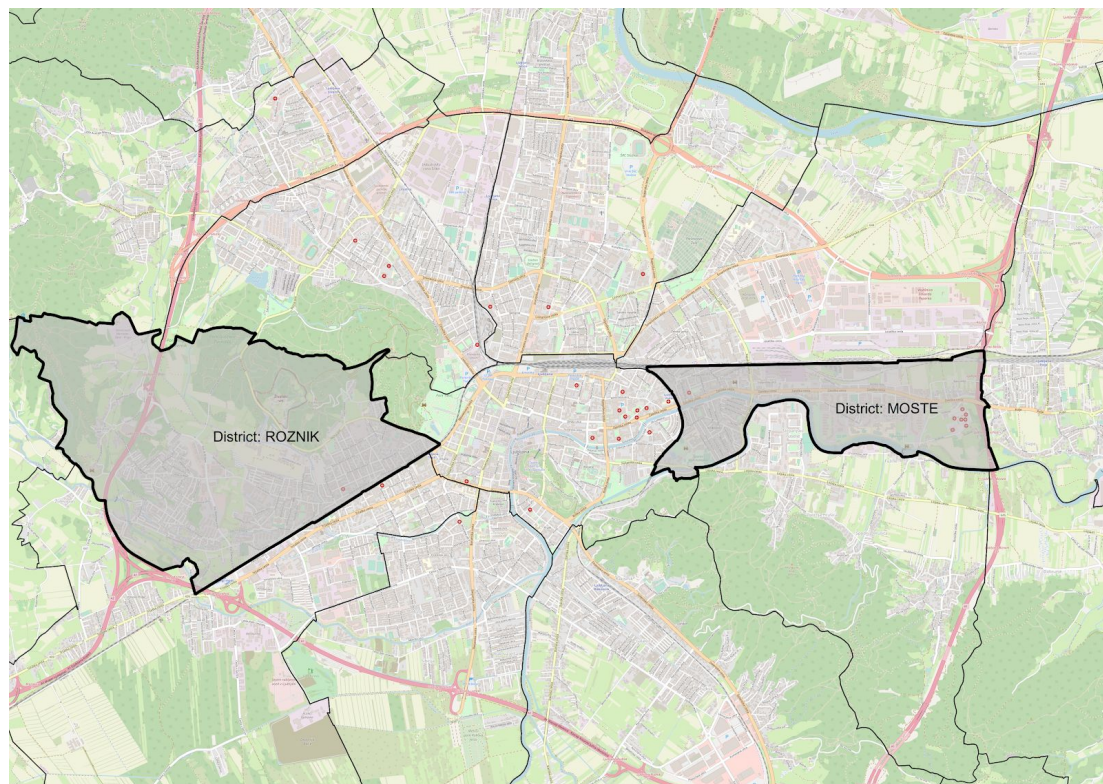
3.2 Rožnik and Moste

Fig 3.1. Districts Rožnik (left) and Moste (right) in Ljubljana.

Two districts will be compared in this study, Rožnik and Moste (see fig 3.1). A number of indicators will estimate the amount of vulnerable residents in the two areas. Variables that are included, are based on the presence of data that the statistical office could provide on district level (see table 3.1). Foreign citizens, mostly from the Balkan, experience disadvantages in comparison to the Slovene population (Žitnik, 2008). Therefore, this will be included as an indicator of deprivation. Also elderly are almost twice as likely to be disadvantaged in comparison to other age groups (Trbanc, 1996). This disadvantage consists of higher chance of material deprivation and poor health. Other aggregators included are the share of unemployed individuals and maximum education level.

The neighbourhood of Rožnik has one of the lowest shares of unemployment (7.68%) foreign citizens (3.70%), individuals having at most primary education (11.77%) and the one of the highest shares of individuals at tertiary education (41.62%). However, the share of older citizens (18.56%) is just a bit lower than the average (19.17%). Moste, on the other hand, has one of the lowest shares of tertiary education (27.44%), and one of the highest shares in unemployment (12.83%), foreign citizens (13.00%) and individuals that have at maximum a primary education level (21.64%). It has, however, the lowest share of older citizens.

District	Unemployment	Older citizens (65+)	Foreign citizens	Primary education	Tertiary education
Bežigrad	9.88%	18.63%	8.90%	15.03%	38.80%
Center	9.69%	18.47%	8.60%	13.01%	46.91%
Črnuče	7.60%	20.10%	6.80%	17.46%	34.94%
Dravlje	9.68%	21.38%	9.70%	18.56%	34.80%
Golovec	10.87%	20.27%	15.40%	23.82%	23.11%
Jarše	10.36%	18.15%	13.60%	21.64%	26.49%
Moste	**12.83%**	**17.51%**	**13.00%**	**21.64%**	**27.44%**
Polje	10.40%	18.48%	14.70%	22.90%	21.69%
Posavje	8.62%	24.13%	8.40%	16.79%	37.88%
Rožnik	**7.68%**	**18.56%**	**3.70%**	**11.77%**	**41.61%**
Rudnik	8.35%	16.25%	9.60%	17.13%	34.97%
Sostro	7.50%	17.43%	4.30%	22.47%	23.56%
Šentvid	9.49%	20.19%	8.00%	15.83%	35.05%
Šiška	10.95%	19.98%	9.80%	16.34%	38.53%
Šmarna Gora	7.22%	19.93%	3.80%	14.91%	36.69%
Trnovo	10.73%	20.66%	15.40%	16.86%	36.20%
Vič	10.12%	18.16%	8.80%	16.98%	37.02%
Average	**9.94%**	**19.17%**	**10.00%**	**17.42%**	**34.95%**

Table 3.1: neighbourhood variables (SURS, 2018)

4. Methodology

The following section will deal with the methodology of this thesis. The question that needs to be answered is '*How does public green space influence social support of residents in Ljubljana, mediated by social networks?*' This chapter contains an elaboration on the research design and methods used to answer this question. Afterwards, the key concepts (green space; social networks; social support) are operationalized. Lastly, the quality of the research will be evaluated, through validity, ethics and limitations.
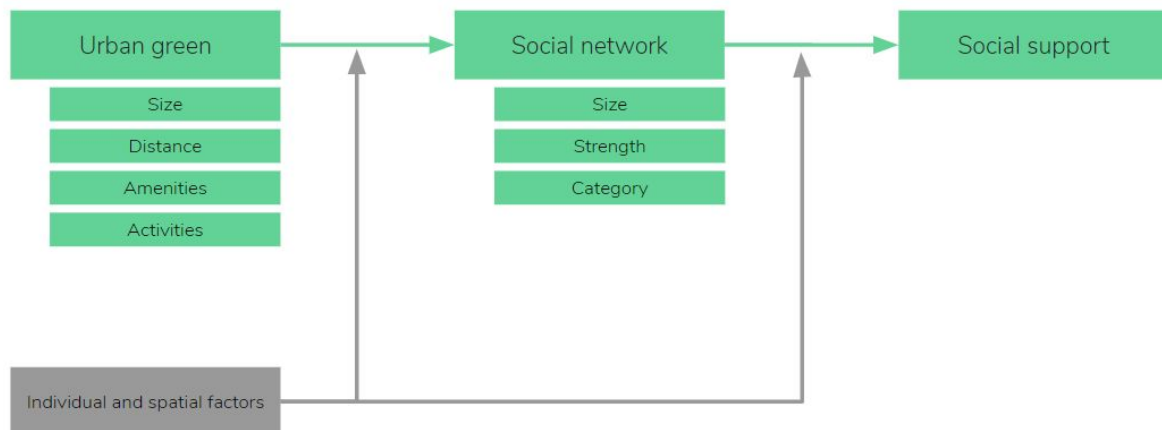

Figure 4.1: Conceptual model

4.1 Research design

A cross-sectional research design is chosen in this research. A quantitative method is preferred over a qualitative, because the quantitative method is a good method to find a diverse group of respondents that reflect the population. The native language is foreign to me and therefore it is hard to approach non-English speaking residents. This can be avoided through a survey in the Slovene language and some bare understanding of it. Next to that, this research tries to make a generalization about the influence of public parks on residents of Ljubljana. A quantitative research design fits this purpose better than a qualitative. A longitudinal study is not feasible, since it does not fit the time scope of one semester. This concludes that a cross-sectional study meets all desires and is therefore favoured.

Research methods in public green space commonly include GIS methods (i.e. Barbosa et al., 2007; Ward Thompson et al., 2012), questionnaires and/or interviews (i.e. Maas, van Dillen, Verheij, & Groenewegen, 2009) or a combination of both (Krellenberg, Welz, & Reyes-Päcke, 2014). The data used in this research too consists of primary and secondary data - a door-to-door survey and a geographical dataset about parks of Ljubljana respectively. The next two sections will deal with the primary and secondary data.

4.2 Primary data

This thesis is situated in Ljubljana. However, not the full city will be investigated. The focus is on two districts, Rožnik and Moste. The population is equal to all the residents of these districts above 18 years old. The survey method needs to fulfil a number of

requirements. First of all, the survey must reflect the society in Rožnik and Moste, including difficult to reach groups, like elderly without internet and non-English speakers. In this research, the influence of green space on social networks/social support is researched. Therefore, to succeed, it is important that a comparison is made between users and non-users of green space. This section tries to explain how all these requirements are met, using a door-to-door survey.

Difficult to reach individuals should be included in a survey concerning social networks and social support. Therefore, some survey methods do not fit: An online survey is not able to reach people without internet. On top of that, if an internet survey is used, the age of the sample will likely be younger than the age of the residents in both districts. A survey on the streets (or in parks) is also not suitable, since this method would prefer people that are likely to be outside over those that are not. A door-to-door survey overcomes the problems of both a survey on the street and an internet survey. Both respondents that go to parks and those that do not are included in the survey. However, a door-to-door survey does not come without its limitations. Two main problems with door-to-door surveying can be identified: respondents that are not able to speak English and a possible bias of respondents, because of times residents are home or not. The first obstacle is overcome by (1) having the questionnaire in Slovene and (2) learning basic sentences in Slovene, to provide some information, when confronted with a question or remark. Slovene is a hard language to learn for a person that does not speak any Slavic language. Therefore, a procedure to introduce the survey is included as attachment C. There is also a possible bias of respondents. If the time of surveying is during work hours, the respondents will often be elderly, students, or unemployed persons. This obstacle can mostly be overcome with the time of the fieldwork. Therefore, the time of surveying is between 16:00 and 20:00. It is not chosen to go to the same doors multiple times, if the respondent is not home. This has two reasons: first of all, there was a tight time schedule to do the fieldwork. Secondly, especially in highrise buildings, respondents were home but did not open the door. Other respondents, that opened the door, said that this might be because there are a lot of sellers in these buildings and these residents didn't want to open the door for them. Lastly, a possible bias could be found, because residents of the same neighbourhoods or streets often have a homogenous character (e.g. elderly often live in the same building block). To ensure the least bias in respondents, a random sample of streets within both districts is selected for the fieldwork.

4.3 Secondary data

As an addition to the primary data, secondary data is used in the form of geographical information. The dataset stems from SNAGA, a government body that deals with the green spaces of Ljubljana. The data contains information about all the features in the parks (i.e. benches; work-out spaces; flowers) and the land cover in the park (i.e. grass; bushes; water; walking path material). With the use of a GIS, the data will be analysed and transformed into a format that is fit for use. In the secondary data lie the innovative aspects of this research. Instead of using a measure like the distance to the nearest green space, this research measures the distance to the green spaces that are used by the respondent. Instead of measuring the quality of green space in a proximity to a respondent, this research measures the quality of green spaces that are

used by the respondent. This improves the method used in previous studies (Kuo et al., 1998; Maas et al., 2009). This is illustrated with the following example: if a resident is close to the local sports association, but does not do any sport, this association will not influence his or her social network. Likewise, the green space that is in proximity to the residents home is not influencing the social network of the person, if he or she does not use this green space.

Following, the statistical data office of Slovenia (SURS) provided a dataset with information about the demographic situation of Rožnik, Moste and Ljubljana as a whole. This dataset can be used to test the representativity of the surveyed sample, as can be found in section 4.5.1.

4.4 Operationalisation of concepts

Following section is concerned with the operationalisation of the three measured concepts.The first concept operationalised is the public parks, followed by social networks and lastly social support.

4.4.3 Public green space

The definition provided for green space is: "*forests, parks, water bodies, recreational and sports grounds*". However, there is still slack in what actually counts as green space and what does not. It is important that the actual areas used for public green space, need to be fit for the research. When studying the urban heat-effect, for example, all public and private green space impacts the temperature of the city. Therefore, one would want to include all urban green space in a city, including every farm acre, garden, or grassfield. When studying biodiversity, however, one would include all rich vegetation areas, therefore perhaps excluding the farmland, or areas that contain mere grass. In that case it would not matter if green space is public or private. This research deals with the social life of the residents and therefore the purpose of greenery contains the areas meaningful for social life. Areas included are the places where a resident would go for an afternoon stroll, or another activity. These spaces are spaces valuable for urban residents. Next to that, green space should be public. Therefore, this research limits itself to public parks. The Slovene cadastre has mapped all (public) green spaces of Ljubljana in a GIS. These are divided into seven different categories. The public green space will be operationalized as the greenery areas that the cadastre of Slovenia defines as 'park forest' (*parkovni gozd*), 'park' (*park*) or 'playground' (*igrišče*) and exclude the green areas that the cadastre defines as 'road' (*cesta, vpadnica*), 'roadside' (*brežina*) or 'underpass' (*podhod*). The greenery in the 'road' type, for example, can be the green strip in the middle of the road. As these places are not meant for taking a stroll or for any other activity, these will not be useful for this research.

Public green space measures

There is a difference between the 'objective' quality of public green space and the 'subjective' quality of these. Measuring either one has its (dis)advantages: objective measures measure the actual presence of park features without respondent bias, while subjective measures are better linked to actual behaviour of the respondents. To improve the understanding of how the green environment affects social contacts,

objective and measures need to be combined. Therefore, the quality of parks will be measured in both. Five categories can be distinguished: size, aesthetics, facilities, accessibility and safety. In the survey, the respondents need to fill in the name of their three top parks, or a description of the park. If they cannot describe it, they can point out the park on the back of the survey. With this procedure, the objective quality of the parks that the respondents go to can be measured. The respondents will be asked for an overall rating of the three parks from 1-5, next to the specific categories. The three parks will be assessed on all five categories objectively and/or subjectively.

1. Size and distance (objective)

The size of public green spaces differs greatly in cities and with its size, the function changes as well. A large green area will be used in a different way than the small playground in front of a housing block. Big public green functions as city parks and are known by anyone in the city, including tourists. People are willing to travel further for parks that are bigger (Schipperijn, Ekholm, et al., 2010), so there are relatively more people from outside of the neighbourhood. Therefore there is a big difference in use, compared to the local playground, where visitors are from the same couple of streets. In any way, the size of parks influences the function and therefore is a variable that needs to be captured. For size is a very quantifiable phenomenon, it will only be an 'objective' measure. Other studies stress the importance of proximity to public green space (Barbosa et al., 2007; Krellenberg et al., 2014). Similarly, the distance from the respondents' street to the park will be computed and this measure will be added to the objective measures. This gives insight into how far respondents are willing to travel to their preferred parks.

2. Facilities (objective; subjective)

According to Kaźmierczak (2013), playgrounds can be spaces that bring people together. Likewise, workout places could be spaces for interaction, where visitors go together, or make new friends. These recreational facilities can be captured as facilities. Other amenities are e.g. benches and picnic tables, dog parks and skateparks (Gidlow et al., 2018). All objects that are measured are: benches and tables; bicycle racks; information boards; kiosks; playing grounds; water taps; work-out places. For the subjective measure, the respondents will be asked to rate the facilities on a scale from 1-5.

3. Aesthetics (subjective)

The aesthetic experience has a positive effect on social relations (Millenium Ecosystem Assessment, 2005 in Kaźmierczak, 2013) and influences the frequency of visiting a park (Kaźmierczak, 2013). For the subjective measure of the *aesthetics* category, the respondents will be asked to rate how beautiful the park is on a scale from 1-5.

4. Accessibility (subjective)

Better accessibility to green space linked strongest with beneficial in health-related issues for the most deprived groups (Gidlow et al., 2018). To measure the subjective accessibility of the parks, the respondents will be asked to rate the accessibility on a scale from 1-5.

The only parks that will be rated, are the top three (or less) parks that residents go to. Therefore, there is a bias in the results: residents will not go to parks that are worse, therefore they do not write these down and will not rate the parks. This means that no statement could be done about the general subjective quality of parks in Ljubljana, or why some green spaces are not used, while others are. This research tries to find the relation between the use of green space and social networks and support. Therefore, the non-use of certain parks is not of interest. What is of interest, is the reasons why some residents do not go to parks at all. This will be asked in the survey (see next section 'use of green space'). The three subjective green space measures (facilities; aesthetics; and accessibility), together with an overall rating of the park, do say something about what people value in parks. This gives important information on why people go to certain parks.

Use of green space
Lastly, some questions will be asked about why people go to parks. Certain activities are more social than others. Respondents will be asked which activities they perform in parks. They could choose as many as they want. The activities that could be chosen were: (1) to meet family; (2) to meet friends; (3) to meet neighbours; (4) to meet new people; (5) to go to the playing field with kids; (6) to walk the dog; (7) to enjoy nature; (8) to enjoy in solitude; and (9) to do sports. Number 1-6 are categorized as social activities, while number 7-9 are categorized as unsocial activities. The activities 7-9 are not necessarily unsocial, but they do not have to be social either. Especially (9) to do sports is a difficult one to categorize, but since most respondents that did sports in parks, said to be running, this is categorized as an unsocial variable. As other research found that people that walk a dog have more ties within the neighbourhood (McNicholas & Collis, 2000), this will be considered a social activity.

Respondents that do not go to parks were asked for their reasons why. The possible reasons include: (1) I don't enjoy parks; (2) parks are too far away; (3) I don't have time; (4) I don't feel comfortable outside; (5) It's not safe in park and (6) other, namely...

Analytical strategy
The first section of the results will be a descriptive analysis of how parks in Ljubljana are spread around the city, using GIS methods and the geographical data provided by SNAGA. Continuing, the parks that are used by the residents of Rožnik and Moste will be described, together with the perceived quality of parks in Ljubljana. Afterwards, using a logistic regression model, it will be investigated which characteristics of respondents influence the chance of going to parks, together with the chance of going to parks in proximity (< 1km) or further away (> 3km). Visitors of parks that are close to the residents home (< 1km) have a higher chance of meeting neighbours in the park. If the park is more than three kilometers away, this chance will become a lot smaller. Parks in between one and three kilometers will not be investigated as a separate category, since the line between meeting neighbours in a park and not can be diffuse.

4.4.2 Social Networks

This thesis will build upon social network research. For the boundaries of the network that is researched are not known, the research will take an egocentric perspective, rather than a bird's eye perspective. The concept of social networks is reduced to three dimensions: network size, tie strength and tie type. The type of ties is divided into family, neighbours, friends and co-workers, similar to Hlebec et al., that research the social networks of the Slovene population (2010). Filipovič Hrást and Hlebec (2012) research the social networks of the Slovenian population and they concluded that Slovenians are, like Italians, family-oriented. Other studies found the importance of neighbours, possibly stemming from the large amount of self-built housing, where both neighbours and family were helping (Hlebec et al., 2010). However, since self-building has declined, this potentially means that individuals have weaker relations with the neighbours than they used to have .

Lastly, the size of the network needs to be measured. The strong ties will be measured in a similar way Henning and Lieberg (1996) measured these. Respondents will be asked to list all the (first) names of every person that is considered indispensable in their life and their relation to them (family, neighbour, co-worker or friend). The weak ties of the person will be estimated by a number per relation type. Respondents will be asked how many relatives; neighbours; friends and co-workers they regularly speak to. The amount of people is divided into: 0; 1-4; 5-10; 11-20; 21+ per type.

Analytical strategy

The social ties will be investigated in relation with the personal characteristics of the respondent and whether the respondent goes to parks. Weak ties are measured per type (family; neighbour; co-worker and friend) in ranges that differ in size (0; 1-4; 5-10; 11-20; 21+ persons). For every type the question is asked '*how many persons of that type you regularly speak to*'. A factor analysis tries to find a latent variable for all weak ties. If a latent variable is found, this will be used in a linear regression. The strong ties are measured in number of persons, so a linear regression will also be appropriate for that case. Next to that, the relation between visiting neighbourhood parks (< 1km from residents home) and the amount of neighbourhood ties will be investigated. For neighbourhood weak ties the model used is an ordinal regression, since it is measured as an ordinal variable, while for strong ties it will be a linear regression.

4.4.3 Social Support

The last concept to be operationalized is social support. Sarason, Levine, Basham and Sarason defined six questions as items for social support (1983, p. 7). These questions are:

1. Whom can you really count on to listen to you when you need to talk?
2. Whom could you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?
3. Whom can you really count on to be dependable when you need help?
4. With whom can you totally be yourself?
5. Whom do you feel really appreciates you as a person?
6. Whom can you count on to console you when you are very upset?

Like Sarason et al. (1983), this study will ask to list all names that could give one or multiple types of social support and which type(s) of social support these persons would give. In an attempt to make the survey not too long to answer, these questions will be asked together with the question about strong ties. The ground for this, is that the questions asked are mostly questions about emotional support and not instrumental support. While the latter can be given by weak ties, strong ties are usually the persons that give emotional support (Heaney & Israel, 2008).

Analytical strategy

The respondent has to name individuals that could possibly give any type of social support. Of every person noted down, the respondent has to check which type of social support the person is capable to give (see attachment B for an example). Now, the number of persons per type of social support can be counted. This will be a measure of each individual type of social support. A factor analysis will be performed, to find a latent variable that reflects all types of social support. If a latent variable is found, a linear regression will be performed to find the relation between visiting parks and social support, with the amount of strong social ties as possible mediation variable between the two. A similar strategy will be used to analyse the relation between visiting parks in the neighbourhood (< 1km) and the amount of social support by neighbours, with the amount of neighbourhood strong social ties as possible mediator.

4.5 Quality of research

4.5.1 Validity

To ensure external validity, the representativity of the sample should be tested. A number of relevant factors will be tested: gender, ethnicity and age. A chi-square test of goodness-of-fit was performed to determine whether the gender of the sample in Rožnik or Moste is different than that of the population. In both districts, the sample is not significantly different than the population (Rožnik: $\chi^2 (1, N = 99) = 2.22$, $p = 0.13$.; Moste: $\chi^2 (1, N = 102) = 0.45$, $p = 0.50$). Ethnicity will be tested on Slovene versus non-Slovene population. No distinctions in the non-Slovene population will be made, because the sample (N=200) is too little. In Moste, the ethnicity of the sample does

not differ from the population: χ2 (1, N = 102) = 0.005 , p = 0.94. In Rožnik however, there is a difference (χ2 (1, N = 99) = 49.3, p < 0.001). The non-Slovene population is overrepresented. The reason for this is that a relatively large number of international students filled the survey. At the time of surveying, the holidays just started in Slovenia, therefore most of the Slovene students went to their family. The international students were still at their student dorms. They are expected to behave similarly to Slovene students regarding park use, where they will choose a park based on their lifestyle rather than proximity. While groups that have a reduced mobility, like elderly or parents with small children will go to the park that is nearest, students would not (Schipperijn, Ekholm, et al., 2010). Students as a group are not over-represented, so the choice is made to not weight this variable. Lastly, age will be tested. In Rožnik, the difference between population and sample is not significant (χ2 (5, N = 99) = 10.36, p = 0.066), therefore is representative. In Moste however, the younger generation is underrepresented, while the elderly are overrepresented (χ2 (5, N = 102) = 23.5, p < 001). This is illustrated in table 4.1. In consequence, the sample of the district of Moste is not representative on age groups. Therefore, caution is required by doing any statements on age in this research. Lastly, the household status is tested on representativity. Both Rožnik (χ2 (4, N = 99) = 6.1, p = 0.19) and Moste (χ2 (4, N = 99) = 12.23, p = 0.15) are representative.

Table 4.1. External validity age groups in Moste

Age	Under 25	25-34	35-44	45-54	55-64	65+
Observed	4	26	18	7	12	32
Expected	10	17	17	14	22	20

Next to representativity, the external validity is also affected by the ecological validity. The outcome of this research is influenced by local variables. These include the general orientation of social networks in Slovenia, that are relatively neighbour- and family-oriented. Outcomes of this research could differ from e.g.Northern European countries, that generally have less strong ties within the family (Mönkediek & Bras, 2014). Another local variables is the lay-out of parks in Ljubljana. Parks in Ljubljana are relatively big and well-spread, something that will be elaborated on in the results chapter. The lay-out of parks in a city should always be investigated in a research that is similar to this one.

Generally, internal validity is at stake in cross-sectional research. It is difficult to find causation in a study that neither has qualitative methods, or can find a temporal relationship. The same is true for this research. On top of that, this while social interactions are necessary to develop and reaffirm one's social network, it is not asked in the questionnaires to if interactions between the respondent and other park visitors happen. Hence, nothing can be said about any causation in this research. However, it is not my goal to do so. Rather is the goal, to see which relations actually exist and what could be possible explanations for this. Further research could investigate the causality of these possible explanations.

4.5.2 Response rate

In total, 201 surveys are conducted. Of these, 102 are in Moste and 99 are in Rožnik (see table 4.2). The total number of houses that is called upon is 1233. Of these, 803 persons did not open the door and 229 declined to fill in the survey. The decline rate in Moste is higher than in Rožnik. A reason for that could be that there are more elderly in the streets chosen in Moste than in Rožnik: there are twice the amount of 65+ respondents in Moste compared to Rožnik. By own experience I found that elderly are more prone to decline the survey than younger persons. There are more persons not opening the door in Rožnik, however. This could be attributed to the fact that one of the streets selected is a student street. Since the surveys were conducted during the holidays, a lot of students were not at their student home.

Table 4.2: Survey response in Moste and Rožnik

	Respondents	No answer	Decline	Total	Response rate
Moste	102	329	162	593	19%
Rožnik	99	474	67	640	17%
Total	201	803	229	1233	17.80%

4.5.3 Limitations of research

A research always has its limitations. Limitations of this research include the language barrier, the time frame, the geographical area and causality. One of the severe limitations is the language barrier. As already described, the questionnaire is in Slovene and a procedure to approach respondents is constructed, found in attachment A to C. Secondly, the context of this research is a master thesis. Therefore, it has a time frame of about a semester. As the researcher is Dutch and the geographical location is Slovenia, there are extra limitations on the field work, that should be conducted between April and July 2019. This is the main reason of the third limitation: while the research is situated in Ljubljana, only two districts are subject. The main reason to choose for two districts are the time resources. Lastly, as already described in the previous section, a limitation of a cross-sectional study is the causality of the research.

4.5.4 Ethical considerations

An ethical concern in this research could be the use of geographical data of respondents. This geographical data is only needed to calculate the distance between the respondents' house and the parks that the respondent uses. To ensure anonymity, the center point of the streets is used for further geographical analysis.

Secondly, questions are asked about family and friends of respondents. Especially questions regarding social support can be seen as sensitive information. Therefore, respondents only write down the first name, initials or the type of relation (e.g. mother/father/son/sister). of their social ties. Respondents can make this choice themselves.

5. Results

5.1 Parks of Ljubljana

Parks in Ljubljana are well spread around the city. This is shown in figure 5.1a. This image shows three buffer zones around parks of Ljubljana, respectively of 300 meters, 500 meters and 1000 meters. Everything that falls into the first buffer zone, is within a distance of 300 meters of the nearest park. Almost all of the built environment falls into the first or the second zone. Individuals are willing to travel a longer distance for parks above 5 ha (Schipperijn, Stigsdotter, et al., 2010). The availability of parks in Ljubljana that are bigger than 5 ha is somewhat less, but even in this case substantial parts of the city fall in the region of 300 meters within a big park (see fig 5.1b).

Figure 5.1a: Accessibility of parks in Ljubljana

Figure 5.1b: Accessibility of big parks (>5ha) in Ljubljana

5.2 Visits to parks

Figures 5.2a and b show the visits to parks of residents in both districts and combined. In figure 5.3, these parks are shown on a map, together with the streets where the data was collected. The blue circles are the streets in Rožnik and the red circles are the streets in Moste. The parks shown are limited to the 8 most mentioned parks in the surveys, but there are in total 27 parks that citizens have named. The park that is mentioned by almost all park visitors (N=155) is Tivoli (N=128). In Ljubljana, not only is this park branded as a city park, it is also used as it. Both in Rožnik and Moste, this park is the top one mentioned. Almost all other parks show a clear function for one of the two districts. Park Kodeljevo is almost exclusively used by residents of Moste. At the time of surveying, multiple residents pointed to park Kodeljevo as a park that serves the community, a place where lots of activities for the areas around the park were organized.

Rožnik is not only the name of a district, it is also the hill that is (partly) within this district. It is located directly behind Tivoli and is used as a park mostly for residents of Rožnik (the district). Similarly, Golovec is also a hill, but is located at the edge of Moste. Therefore, the residents of that area are likely to go there.

Park Zvezda is a little park on Kongresni trg (Congress square), one of the main squares of Ljubljana. Zvezda literally means 'star', referring to the layout of the park.

It's paths form a cross diagonally and vertically/horizontally. It seems that this park is barely in use for residents in Moste and more for residents in Rožnik. However, something else could explain this pattern. As it is a city park in the city center, most of the respondents that go to park Zvezda are students (14 out of 19). Since a lot more students live in Rožnik, there are relatively more respondents of this district going to this park than of Moste.

Koseški Bajer is a pond to the north of the park Rožnik. It is barely used by residents of Moste, but residents of Rožnik do go there. Fužine is a park within the district of Moste, therefore used by its residents. Lastly, the Path of Remembrance and Comradeship is a trail that is already briefly mentioned in chapter 3. It is often abbreviated as PST, or just Pot (literally 'path'). The trail goes around the whole city, crossing both Moste and Rožnik. It is 32.5 kilometers long and it symbolizes the barbed wire fence that was put around the city during its oppression in World War II.
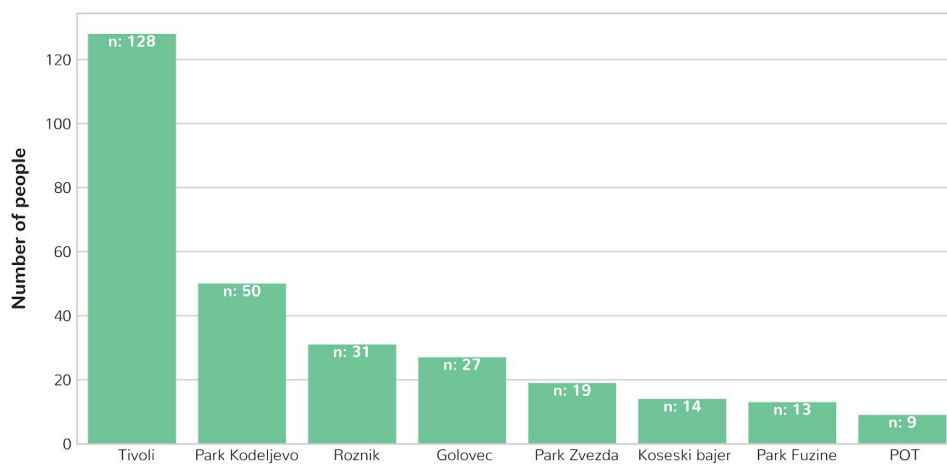

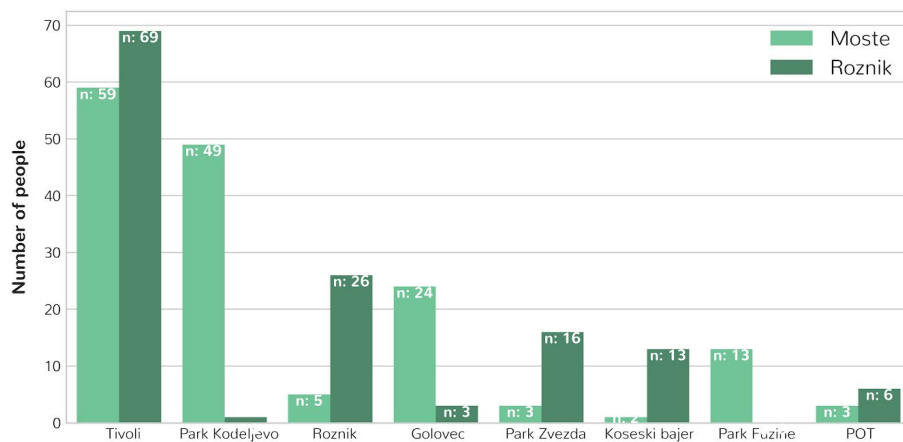*Figure 5.2a. Park visitors in 8 most frequent visited parks*

Figure 5.2b. Park visitors in 8 most frequent visited parks, for Moste and Rožnik
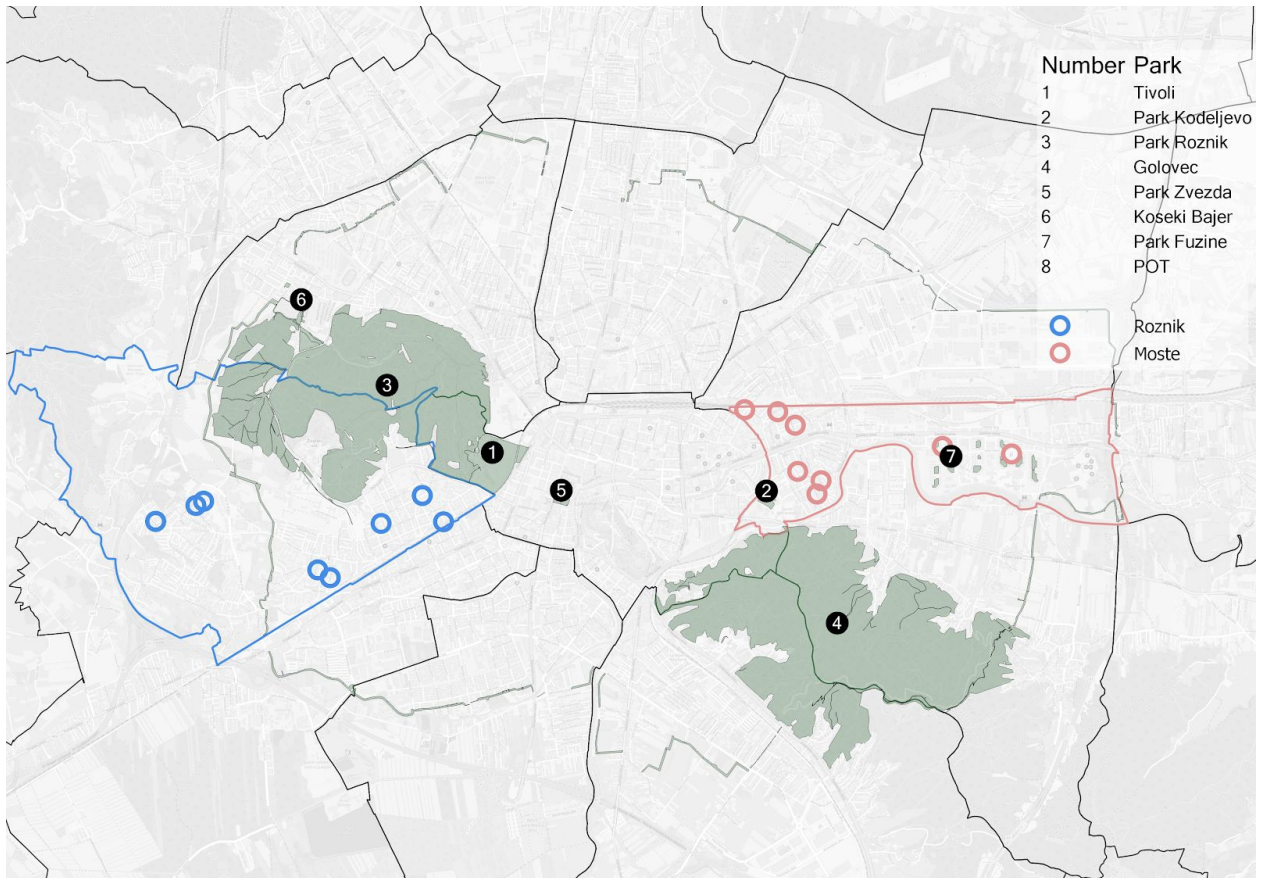
Figure 5.3. Spatial layout of most visited parks by residents in Moste or Rožnik in Ljubljana (blue and red dots are streets that are visited for data collection).

The overall park rating is very good (see fig 5.4). This is not surprising, the respondents were asked about the top three parks they attend, naturally selecting the parks that are best in the opinion of the respondent. While there are no big differences between the rating of parks and the sub-questions about accessibility, amenities and aesthetics, it can be seen that accessibility is rated slightly better than the other two. The amenities is rated the worst, although there is not so much difference with the aesthetics of the park.
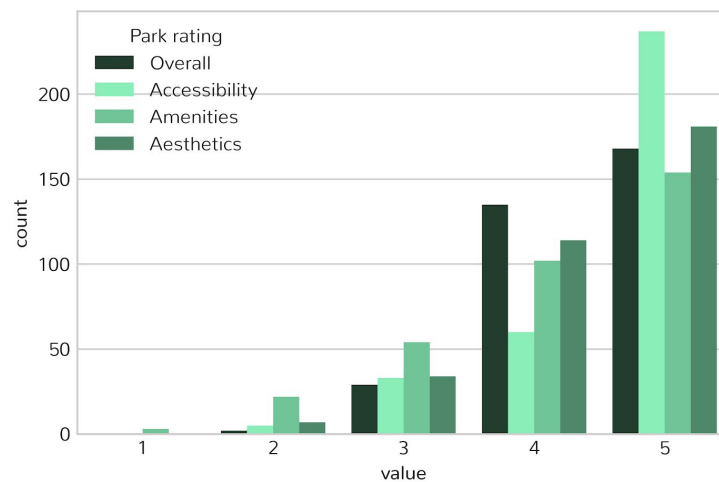

Figure 5.4. Park rating in categories accessibility; amenities; aesthetics.

5.2.1 Park visits

More than half of the respondents (59%) goes to parks at least weekly (see fig 5.5a). Only 20% of the respondents does not go to a park at all. In Rožnik (see fig 5.5b), this value is significantly ($p < 0.01$; N = 201) higher (26%) than in Moste (14%), while the amount of residents going to parks daily is lower in the former than in the latter. This is in congruence with earlier research that residents in neighbourhoods with lower SES go to parks more often than residents in neighbourhoods with higher SES.
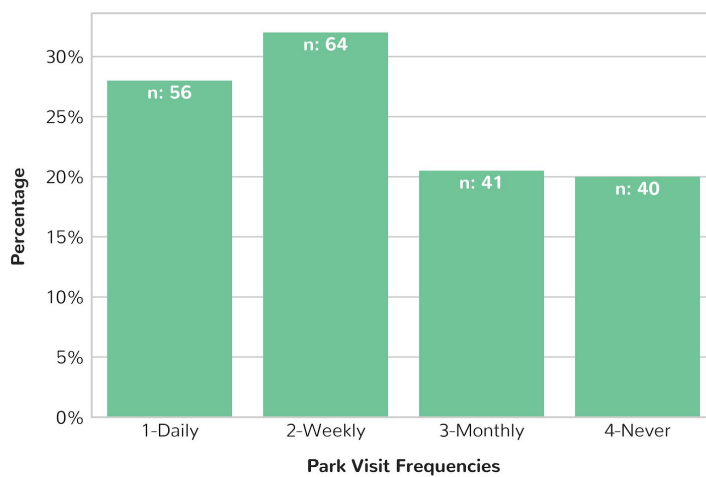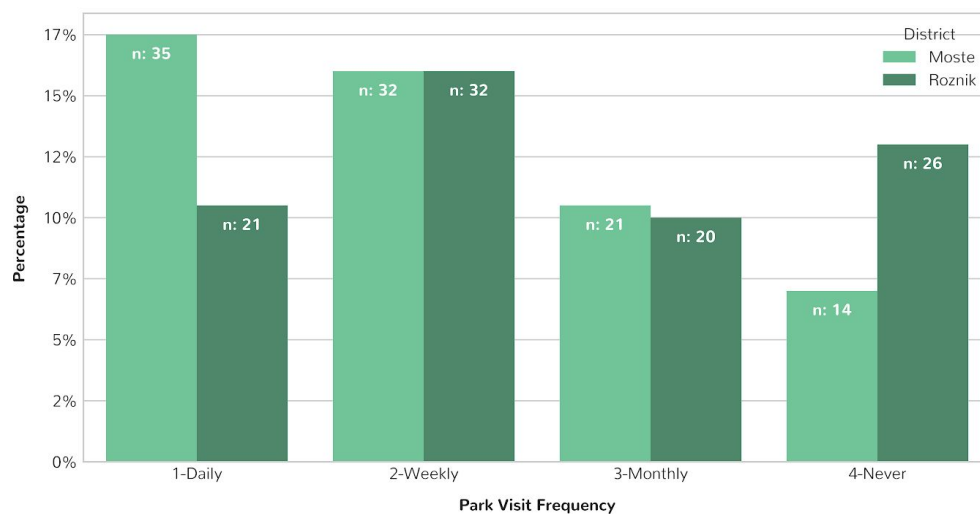

Fig 5.5a Park attendance (n=201)

Fig 5.5b Park attendance for Moste and Rožnik (n=201)

A logistic regression (see table 5.1; see regression 1[1]) is performed to find out what influences the chance that people go to parks or not. In the theoretical framework, a few factors are named. These are age; gender; ethnicity; having children below 15; and the district. The logistic model is significant (χ2(5)=25.4, p<0.001), with Nagelkerke R^2 0.193. Age, having children below 15 and the district are all significant, while ethnicity and gender are not. The chance to visit parks decreases as age increases (exp(B)=0.975, p=0.010). The chance to visit parks increases when the respondent has children below 15 (exp(B)=3.97, p=0.034). This is in congruence with Kaźmierczak (2013). The chance to visit parks is higher in Moste than in Rožnik (exp(B)=0.291, p=0.003). A quadratic or cubic effect of age is tested, but this didn't lead to significant results (see regression 2).

Table 5.1. *Logistic regression coefficients for visits to parks with regard to gender; ethnicity; children below 15 at home; district; age; and whether someone is a student in Roznik.*

	Visits to parks	Visits to parks < 1km (model 1)	Visits to parks < 1km (model 2)	Visits to parks > 3km
Gender	0.554 (0.217)	0.876 (0.269)	0.849 (0.282)	0.872 (0.268)
Ethnicity	2.288 (1.533)	1.746 (0.792)	2.240 (1.156)	0.75 (0.33)
Children below 15 at home	3.97 (2.584)	0.961 (0.354)	1.772 (0.743)	2.299 (0.915)*
District	0.291 (0.123)**	0.248 (0.792)***	0.103 (0.043)***	0.412 (0.133)**
Age	0.975 (0.01)**	0.975 (0.008)**	1 (0.010)	0.987 (0.008)
Students in Roznik			17.836 (10.797)***	
Constant	27.042 (19.335)	6.553 (3.627)***	1.534 (0.945)	4.061 (2.14)**

Data given as odds ratio, with an estimation of the standard deviation in parentheses (odds-ratio*SE). * p<0.05; **p<0.01; ***p<0.001

5.2.2 Park distance and size

Figure 5.6a shows the distance to parks that are visited by respondents. As respondents could fill a maximum of three parks, there is a chance that they would only visit parks that are nearby (< 1km), only far away (> 3km) or both. About 31% visits both parks that are far away and parks that are near to their street. Around 29% only go to parks that are further away, while 19% only go to parks that are near. 21% never goes to parks. The distance that respondents are willing to go to visit a park, is dependent on some factors. As can be seen in figure 5.6b, this is influenced by which district respondents lived.

A logistic regression (see table 5.1, model 1; see regression 3) is performed to find the influence of age; having children below 15 and the district of a respondent on the chance of going to parks that are less than a kilometer from the respondents' home. This model is significant (χ2(5)=24.67, p<0.001), with Nagelkerke R^2 0.16. Parents with children below 15 do not go to neighbourhood parks more than others (p=0.914). Residents of Moste go to neighbourhood parks more often than residents of Roznik (exp(B)=0.248, p<0.001). An increase in age shows the opposite effect than

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[1] See Attachment D for the exact output of all regressions. Every regression found in this thesis will have a number that corresponds to a regression in the attachment.

expected, where younger respondents go more often to parks nearby than older (exp(B)=0.975, p=0.003). The quadratic and cubic effect of age are tested, but not significant (see regression 4). There is an explanation for the opposite relationship of age with visiting neighbourhood parks. Most of the respondents below 25 lived in Rožna Dolina, a neighbourhood with student blocks in Rožnik. This neighbourhood is situated right next to Tivoli, the city park. Therefore, even if they would rather go to a park that suits their lifestyle, this park is still closeby. This could be tested by adding a variable of students that live in Rožnik and running the regression again. In this new regression (see regression 5), age becomes an insignificant factor (p=0.973), while students that live in Rožnik are 17.8 times more likely to go to parks in the neighbourhood than others (exp(B)=17.8, p<0.001). The district becomes an even more important factor than in the previous model, where residents of Moste are now 10 times more likely to go to neighbourhood parks than residents of Rožnik (exp(B)=0.103, p<0.001).

A similar logistic regression model (see table 5.1; see regression 6) could be performed for parks that are more than 3 kilometers away. This model is also significant ($\chi2(3)$=16.54, p=0.005), with Nagelkerke R^2 0.11. Age is not a significant variable (p=0.111). Residents in Moste go do parks further away more than residents in Rožnik (exp(B)=0.412, p=0.006). Residents with children below 15 go to places further away more often than residents without children below 15 (exp(B)=2.299, p=0.037). This is remarkable, since Schipperijn et al. (2010) found the opposite relation, reasoning that residents with young children are less mobile than others, because of their child. The quadratic and cubic effect of age are tested, but are not significant (see regression 7).
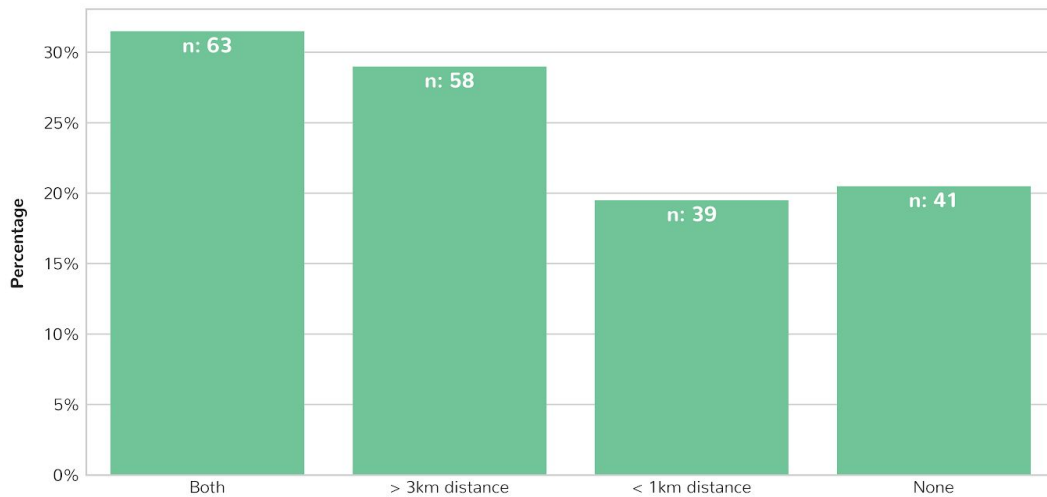

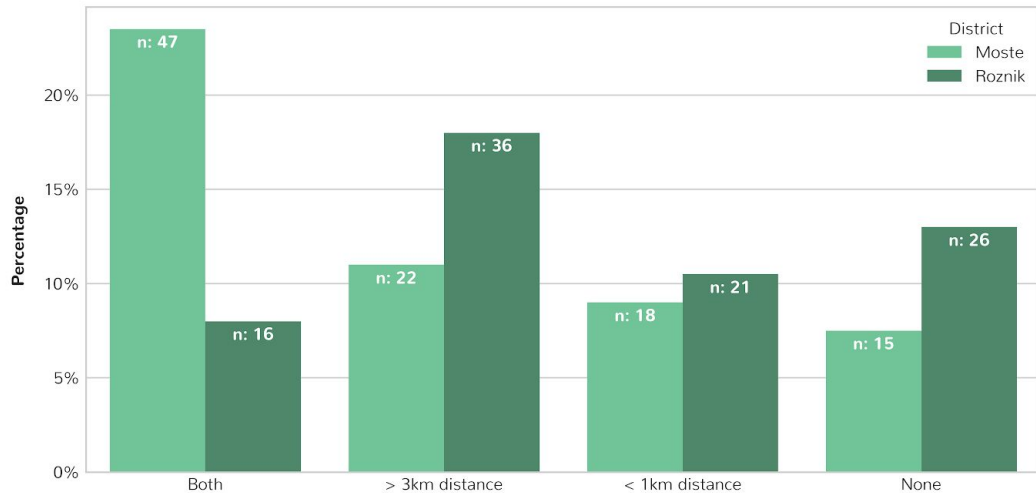*Figure 5.6a. Park visit distance (N=201)*

Figure 5.6b. Park visit distance for Moste and Rožnik (N=201)

5.2.3 Activities and amenities in parks

In total, 155 of the 201 respondents go to parks. Of these, only 5 do not do any of the social activities (To meet family; To meet new people; To meet neighbours; To meet friends; To walk the dog; To go to the playing field with kids). This illustrates how important social activities are. More than two-thirds of the park visitors (110) meet family, the most important activity. The second-highest number of respondents go to parks 'to enjoy in solitude'. So, while social activities are very important, there are also numerous citizens that go to parks on their own. Other important activities are to meet friends, to go to the playing field with kids and to meet friends. While a fair number of respondents say they meet neighbours in parks (42), this is actually one of the less popular activities. Only 12% of the respondents say they go to parks to meet new people, indicating that parks are not (consciously) used for the development of new social ties. Since only 5 respondents never perform social activities in parks, this variable will be omitted in further tests.

There are parks in Ljubljana that do not have amenities: 66 (28%) do not have any work-out places or playing fields, while 17 (7%) do not have benches or tables. However, none of the respondents replied that they visited one of these parks. All parks that are visited by the respondents have these amenities. Since there is no variation in the data, no statements can be made about amenities in this research. However, it seems that these amenities are an important factor of parks, since residents did not choose parks that do not have amenities.
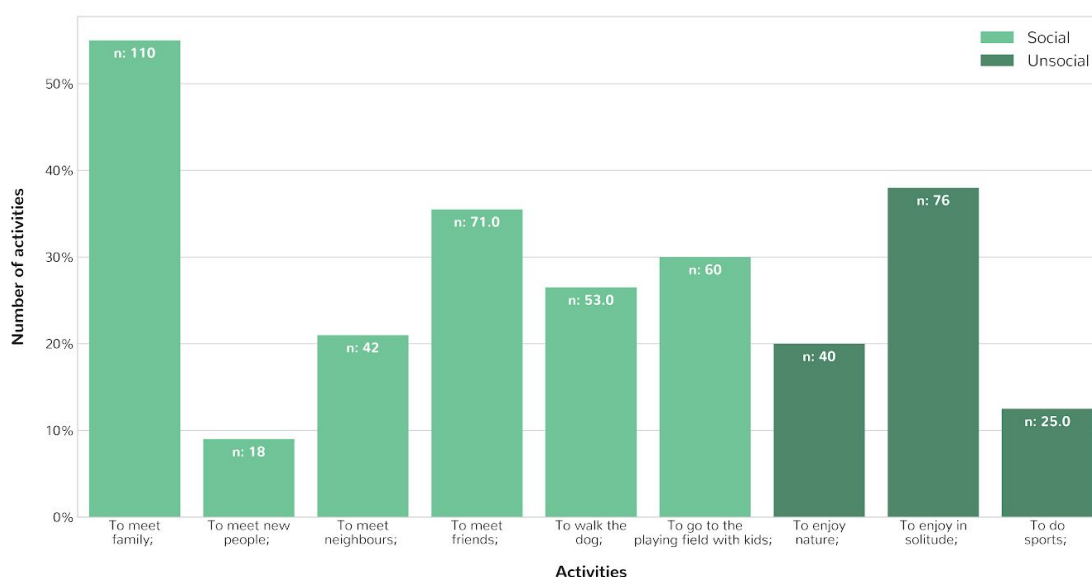
Figure 5.7. Activities performed in parks (N=201, multiple activities per respondent were possible)

This section dealt with the visits to parks. Most residents of both Moste and Rožnik go to park Tivoli, the city park. While residents of both districts go to Tivoli, other parks show a clear division in visitors from either Rožnik or Moste. In the former district, residents visit parks slightly less compared to the latter. Parents with children are among the ones visiting parks most frequently, while age is of negative influence on visiting parks. The chance of visiting parks within the neighbourhood (< 1km) is higher for students in Rožnik and for residents of Moste. The chance of visiting parks further away (> 3km) is higher for residents of Moste as well, but also for parents of children below 15. While both the social activities and amenities in parks are important factors in parks, they cannot be used to test hypotheses 6 and 7 (*Visitors of public green space with amenities will have more social ties than visitors of public green space without amenities; and Visitors of public green space that perform 'social' activities in parks have more social ties than those visitors that do not perform 'social' activities*). The two variables will be excluded from further research.

5.3 Social Network

The following section deals with the relation between park visits and social ties. Figure 5.8 is a boxplot of the park frequencies and the number of strong ties that individuals have. It can be seen that park visitors have more strong ties than non-visitors. However, this relationship is more fuzzy regarding the frequency of visit. Weekly visitors have more strong ties than daily visitors. There is no immediate explanation for this.
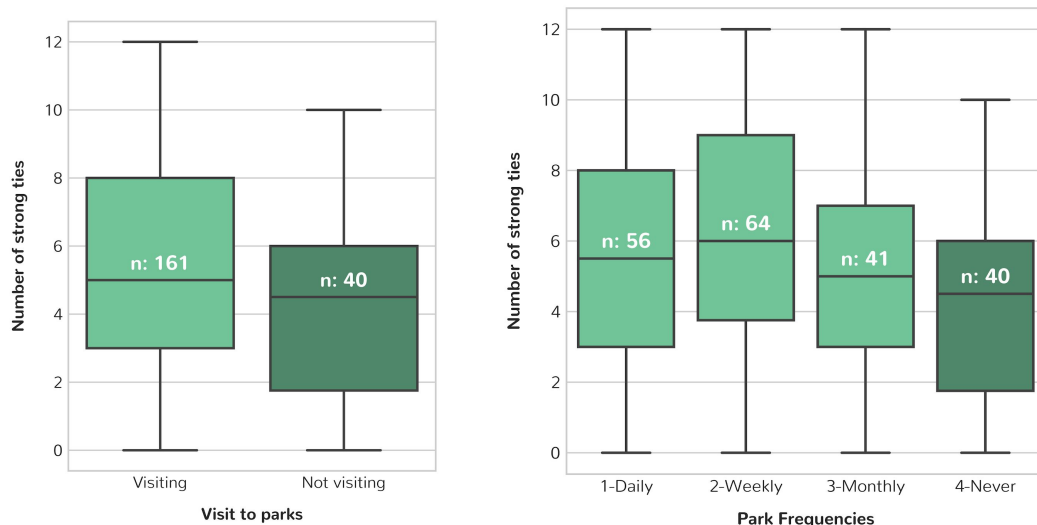
41

Figure 5.8. Boxplot of respondents' number of strong ties and frequency of visits to parks (N=201)

Table 5.2. Regression coefficients for strong ties with regard to visiting parks, controlling for gender; ethnicity; district; and age.

	Strong Ties (Linear Regression)	Strong Ties (Poisson Regression)
Visiting parks	1.265 (0.597)*	9.237 (0.924)**
Gender	0.962 (0.455)*	0.835 (0.052)**
Ethnicity	0.974 (0.670)	0.853 (0.072)
District	0.402 (0.482)	0.933 (0.061)
Age	-0.028 (0.012)*	0.995 (0.002)**
Constant	4.82 (0.986)***	9.237 (0.970)***

Model 1 (linear regression) given as unstandardized coefficients, with standard deviation in parentheses. Model 2 (poisson regression) given as odds ratio, with an estimation of the standard deviation in parentheses (odds-ratio*SE). * p<0.05; **p<0.01; ***p<0.001

A linear regression (see table 5.2; see regression 8) is performed to find the relation between the number of strong ties and visiting parks, controlled for age; gender; ethnicity; and district. The number of strong ties is the dependent variable and whether an individual visits parks or not is the independent variable. The regression is significant ($F(5)=4.16$, $p<0.001$), with R^2 0.10, indicating a small effect. Visiting parks is significant, where visitors have more strong ties than non-visitors (p=0.035), so are the gender (p=0.036) and age (p=0.023). Women have more strong ties than men and age has a negative relation with strong ties. For a linear regression to be valid, the residuals need to be normally distributed. This can be tested with a Shapiro-Wilk test. The residuals are not normally distributed (p=0.008). There are no outliers (cook's distance is not above 0.027), so it is likely caused by the fact that the amount of strong ties, or the dependent variable, is not normally distributed either. A log- or square root-transformation of the amount of strong ties does not solve this problem of a distribution that is not normal. There are relatively a lot of respondents that have 0 strong ties, or 12, the maximum (see fig 5.9). Because the dependent variable is a

count data type, a poisson model could fit better here. A poisson regression (see table 5.2; see regression 9) with the number of strong ties as dependent variable and the visits to a park as independent variable, controlled for age; gender; ethnicity; and district yields the same results (χ2(5)=39.21, p<0.001). Visitors of parks have more strong ties than non-visitors (p=0.004), age has a negative correlation with strong ties (p=0.002) and women have more strong ties than men (p=0.004). A quadratic and cubic effect of age is tested and, while both are significant, they show no effect on the model (see regression 10).

To find out if there relation between visiting parks and strong ties differs for the two districts, a moderator could be added (visiting parks * district). However this moderated variable is not significant, indicating that there is no difference between districts in the relation between visiting parks and strong ties. Hypothesis 1a, "*More frequent visits to public green space is positively associated with the amount of strong social ties*" is supported.
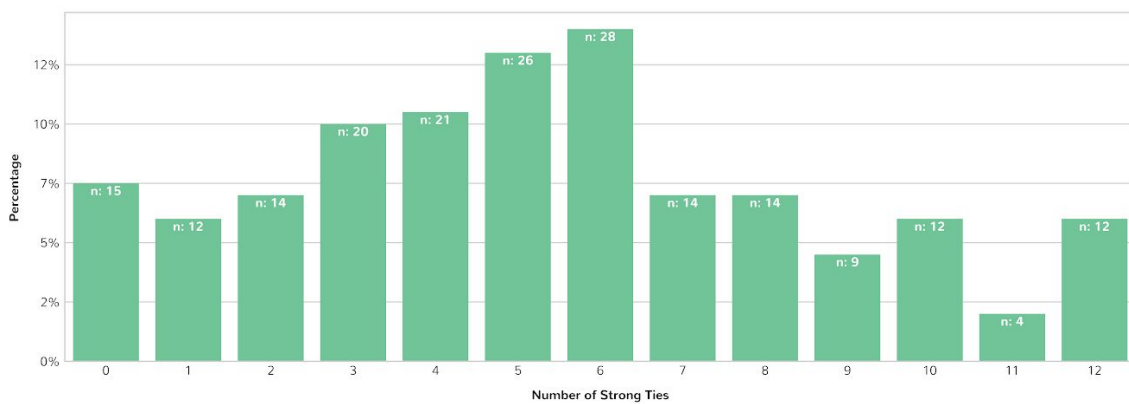

Figure 5.9. Distribution of number of strong ties

Table 5.3. Linear regression coefficients for weak ties with regard to visiting parks, controlling for gender; ethnicity; district; and age.

	Weak Ties Factor	Weak Ties Class Average
Visiting parks	0.232 (0.191)	4.109 (3.079)
Gender	-0.149 (0.146)	-2.022 (2.344)
Ethnicity	0.134 (0.213)	1.722 (3.427)
District	0.134 (0.213)	-1.48 (2.484)
Age	-0.002 (0.004)	-0.04 (0.063)
Constant	-0.015 (0.314)	20.484 (5.047)***

Data given as unstandardized coefficients, with standard deviation in parentheses. * p<0.05; **p<0.01; ***p<0.001.

The amount of weak ties per type (family; friends; neighbours; co-workers) is measured as an ordinal variable, with ranges differing in size (0; 1-4; 5-10; 11-20; 21+ persons). A factor analysis tries to find a latent variable that reflects all variables. There are two premises to a factor analysis: the Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) Test. The Bartlett's test is significant (χ 2 (6) = 93.77, p < 0.001) and the KMO Test is 0.69, above the recommended 0.6. Communalities are

fair, ordered from low to high: 0.35 for co-workers, 0.47 for neighbours, 0.51 for family and 0.59 for friends. One variable meets the Kaiser-Criterion (Eigenvalue ≥ 1), explaining 48% of the variance. No items were eliminated, since the primary factor loadings are at least 0.59 (see table 5.4). With the help of principal axis factoring, one variable is construed. A linear regression (see table 5.3; see regression 12) is performed, with the weak ties factor as dependent variable and visiting parks as independent, controlled for age, gender, ethnicity and district. This is not the case (p=0.45). The regression model is not significant (F(5)=0.82, p=0.539). Neither park visits, nor the control variables are found statistically significant.

The factor might not reflect the amount of weak ties of a person. Therefore, to be sure that there is no relation between park visits and weak ties, another test is also performed. The classes are transformed into the class averages (0; 2.5, 7.5; 15.5; 23). Since the last class, 21+ persons, does not have a limit, the arbitrary number of 23 persons is chosen. The sum of the class average of all weak tie types is computed to a new variable. A linear regression on this variable is performed with regard to visiting parks, controlling for gender; ethnicity; district and age (see table 5.3; see regression 13). Also this model is not significant (F(5)=0.852, p=0.515). Therefore, hypothesis 1b, "*More frequent visits to public green space is positively associated with the amount of weak social ties*" could not be supported. More frequent visits to public green space is positively associated with the amount of strong ties, but not with the amount of weak ties. This result is quite remarking, since it deviates from other studies that weak ties are affected by green space (Kaźmierczak, 2013). On the other hand, most park visitors say they go to parks with family, friends or kids. Therefore, they might have a bigger group of strong ties, that they meet in parks. This would mean that having more strong ties and going to parks go hand-in-hand: the chance to go to parks could be bigger with more strong ties, but these ties are also strengthened in parks.

Table 5.4. Primary factor loadings of weak ties variables

	Weak Ties
Family	0.512
Neighbours	0.474
Co-workers	0.352
Friends	0.587

Extraction Method: Principal Axis Factoring.

a 1 components extracted.

Table 5.5. Poisson regression coefficients for strong ties with regard to visiting parks, controlling for gender; ethnicity; district; and age.

	Neighbourhood Strong Ties
Visiting parks	0.59 (0.29)
Gender	1.954 (0.649)*
Ethnicity	0.461 (0.169)*
District	1.143 (0.391)
Age	1.011 (0.008)
Constant	0.156 (0.083)***

Data given as odds ratio, with an estimation of the standard deviation in parentheses (odds-ratio*SE). * p<0.05; **p<0.01; ***p<0.001

The next question is if visitors of neighbourhood parks (< 1km from residents home) have more neighbourhood ties. To find out if this is true for strong ties within the neighbourhood, a poisson regression is performed. This model (see table 5.5; see regression 13) can control for age; gender; ethnicity and district. The model is not significant (F(5)=1.75, p=0.126) and therefore there is no influence of going to neighbourhood parks on strong ties. The quadratic and cubic effect of age is also tested, but is not significant (see regression 14). Hypothesis 2a: more frequent visits to public green space within 1km of the resident's home is positively associated with the amount of strong social ties with neighbours. This hypothesis is rejected. The amount of neighbourhood strong ties is not higher.

Table 5.6. Ordinal regression coefficients for weak ties with regard to visiting parks, controlling for age.

	Neighbourhood Weak Ties (model 1)	Neighbourhood Weak Ties (model 2)
Visiting parks in neighbourhood	-0.774 (0.293)**	-0.691 (0.315)*
Visiting parks	-	-0.276 (0.486)
Age (below 25)	-1.233 (0.465)**	-1.24 (0.465)**
Age (25-34)	-1.225 (0.406)**	-1.272 (0.412)**
Age (35-44)	-0.061 (0.458)	-0.099 (0.461)
Age (45-54)	0.476 (0.538)	0.487 (0.539)
Age (55-64)	-0.269 (0.529)	-0.290 (0.530)
Age (65+)	*reference*	*reference*

Data given as unstandardized coefficients, with standard deviation in parentheses. * p<0.05; **p<0.01; ***p<0.001.

To find out if visitors of neighbourhood parks have more weak ties within the neighbourhood, an ordinal regression model is performed. This is controlled for age; gender; ethnicity; and district (see regression 15). This ordinal regression is significant ($\chi 2(5)$=14.45, p=0.013), but 77.6% of cells are empty. Since in this ordinal regression, the district, gender and ethnicity of a person is not significant, the model is run again without these control variables (see regression 16). Age will be converted into bins of 10 years, with below 24 as lowest bin and 65+ as highest, because using age as a

ratio-variable will leave 70.1% of the cells still empty. Even in the regression model with age as bins (see table 5.6, model 1; see regression 17), 17 cells (28.3%) are empty and therefore the Goodness-of-Fit-value should be handled with care. The model is significant (χ2(6)=21.8, p=0.001), with Nagelkerke R^2 0.119, accounting for a weak relation between the two. Age categories below 24 (p<0.008) and between 25-34 (p=0.003) significantly have less weak neighbourhood ties than other age categories. Going to parks in the neighbourhood contributed to the amount of neighbourhood weak ties (p=0.008). Hypothesis 2b: *more frequent visits to public green space within 1km of the resident's home is positively associated with the amount of weak social with neighbours*, is supported. The amount of neighbourhood weak ties for those that visit parks within 1km of their home is higher than for those that do not.

Hypothesis 3 is: "*Residents that do not go to neighbourhood parks (< 1km), but do go to parks, do not have more social ties with neighbours than residents that do not go to parks*". This hypothesis will only be tested for weak ties. Since strong ties are not significantly higher for residents that only go to parks within 1km of their home, it will not be useful to test the hypothesis for strong ties. This would yield a result that is similar to any park in the city, which is already tested at the start of this section. An ordinal regression (N=201) is performed to find the difference between visitors of parks outside the neighbourhood (< 1km) and non-visitors in the amount of neighbourhood weak ties, controlled for age (see table 5.6, model 2; regression 18). The reference category is the visitors of parks inside the neighbourhood. The regression model is significant (χ2(7)=22.34., p=0.002). While people that do not visit neighbourhood parks have significantly less neighbourhood weak ties (p=0.028), those that do visit parks in general do not have significantly less weak ties. This supports the hypothesis that there is no difference of social ties within the neighbourhood between residents that go to parks outside 1km of their home or do not go to parks at all.

5.4 Social support
At last, we arrived at the relation between parks and social support. The social support, or rather the lack of it, is measured by six questions, found in table 5.7. Moste and Rožnik are very similar in lacking social support. If someone lacks at least one of the social support dimensions, the individual is at risk of social exclusion (Sarason et al., 1983, p. 7). Of the 201 respondents, 69 lack at least one of the six dimensions of social support, which is about ⅓. Most that lack one, also lack multiple. Out of those 63, 55 say that they cannot count on someone to console when they are very upset. About ⅓ (23) of those lacking at least one type of social support is above 65. 22, or roughly 10% of the total amount of respondents, lack all types of social support.

Table 5.7. Lack of social support (N=201)

Lacks social support	Total (%) N=201	Moste (%) N=102	Roznik (%) N=99
(1) Whom can you really count on to listen to you when you need to talk?	17.9	18.6	17.2
(2) Whom could you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?	19.4	20.6	18.2
(3) Whom can you really count on to be dependable when you need help?	16.4	18.6	14.1
(4) With whom can you totally be yourself?	20.4	21.6	19.2
(5) Whom do you feel really appreciates you as a person?	19.9	21.6	18.2
(6) Whom can you count on to console you when you are very upset?	27.4	26.5	28.3
At least one of the above	31.3	32.4	30.3
None of the above	68.7	67.6	69.7

To find a latent variable that reflects all types of social support, a factor analysis is performed. The premises of a factor analysis are met: A Barlett's test of sphericity is significant ($\chi 2$ (15) = 1368.89, p < 0.001) and the Kaiser-Meyer-Olkin measure of sampling adequacy is 0.9, which is far above the recommended value 0.6. Lastly, all communalities are above 0.75, therefore sharing a strong common variance. The factor analysis could be performed. The total variance that is explained by the model, or the sum of squared loadings, is 0.801. There is only one factor that meets the Kaiser-criterion (eigenvalue ≥ 1), but this one factor explains all variables. No items were eliminated, because all had a primary factor loading of at least 0.87 (see table 5.8). A factor analysis needs a lot of respondents and this thesis has only 200 (a 'fair' amount for factor analysis). Because the primary factor loading per item is so high, it is still allowed to perform a factorization of the variables. The variable is constructed with the use of principal axis factoring.

Table 5.8. Primary factor loadings of social support variables

	Social Support
(1) Listens	0.868
(2) Crisis situation	0.889
(3) Helps when in ned	0.897
(4) Be yourself	0.904
(5) Appreciates	0.911
(6) Consoles	0.905

Extraction Method: Principal Axis Factoring.

a 1 factors extracted. 4 iterations required.

Now, it could be tested if social support is related to visiting parks. I argue that this relationship between visiting parks and social support is mediated by the strong ties of a person. To test this relationship, four regressions need to be performed, that all need to be significant: (1) a regression on social support with regard to visiting parks; (2) a regression on strong ties with regard to visiting parks; (3) a regression on social support with regard to strong ties; and (4) a multiple regression on social support with regard to both parks and strong ties on social support. If, in this last regression, the correlation between visiting parks and social support is not significant anymore, the variable is fully mediated by strong ties. If it is still significant, but the strength of the relation is less, it is partly mediated by strong ties.

Table 5.9. Regression coefficients for social support with regard to visiting parks and strong ties, controlling for gender; ethnicity; district; and age.

	(1) Social Support	(2) Strong Ties (Poisson Regression)	(3) Social Support	(4) Social Support
Visiting parks	0.365 (0.174)*	9.237 (0.924)**	-	0.108 (0.127)
Strong ties	-	-	0.205 (0.015)***	0.203 (0.015)***
Gender	0.236 (0.133)	0.835 (0.052)**	0.031 (0.096)	0.04 (0.097)
Ethnicity	-0.099 (0.196)	0.853 (0.072)	-0.288 (0.141)	-0.296 (0.142)*
District	0.134 (0.141)	0.933 (0.061)	0.032 (0.098)	0.053 (0.101)
Age	-0.013 (0.004)***	0.995 (0.002)**	-0.008 (0.003)***	-0.008 (0.003)**
Constant	0.141 (0.288)	9.237 (0.970)***	-0.728 (0.178)***	-0.838 (0.22)***

Model 1, 3, 4 given as unstandardized coefficients, with standard deviation in parentheses. Model 2 given as odds ratio, with an estimation of the standard deviation in parentheses (odds-ratio*SE). * $p<0.05$; ** $p<0.01$; *** $p<0.001$

(1) A linear regression is performed to find the relation between going to parks and the amount of social support one gets, using the factor that is construed before (see table 5.9; regression 19). This regression model is found to be significant ($F_{(5,190)}=7$, $p=0.009$), $R^2=0.11$. People that visit parks have more social support ($p=0.037$). Age is also important, where the younger generations have more social support than the older ($p<0.001$). (2) We have already seen in section 5.3 that the those that go to parks park visits significantly have more strong ties ($\chi 2(5)=39.21$, $p<0.001$; see table 5.9;; see regression 9). (3) The relation between strong ties and social support is significant ($F_{(5,190)}=20.60$, $p<0.001$; see table 5.9; see regression 20). R^2 is very high: 0.550, which means that 55% of the variance is explained by the amount of strong ties. (4) The last regression model is on social support, with regard to both strong ties and visiting parks (see table 5.9; see regression 21). Also this regression is significant ($F_{(6,189)}=38.819$, $p<0.001$), with $R^2=0.552$. Strong ties is a significant variable ($p<0.001$), while being a park visitor is not anymore ($p=0.276$). Therefore, the relation between going to parks and social support is fully mediated by the strong ties of a network. Age is still significant ($p=0.003$) and has a negative correlation with social support. Ethnicity becomes a significant variable ($p=0.038$), where someone that is not Slovene, also has less social support. It can not be tested how weak ties are related to social support. The reason is the way the question about

strong ties is formulated in the questionnaire. A name is asked, that is also automatically a strong tie.

Table 5.10. Regression coefficients for social support with regard to visiting parks and strong ties and meeting people in the park, controlling for gender; ethnicity; district; and age.

	Social Support (model 1)	Social Support in neighbourhood (model 2)
Strong ties	0.201 (0.015)***	0.068 (0.028)*
Gender	0.048 (0.096)	-0.348 (0.174)*
Ethnicity	-0.288 (0.140)*	0.094 (0.247)
District	0.053 (0.099)	0.032 (0.183)
Age	-0.007 (0.003)**	0.008 (0.005)
Meeting friends or family	0.187 (0.103)	-
Meeting neighbours	-	-0.128 (0.199)
Constant	-0.896 (0.200)	-0.487 (0.323)

Table 5.11. Primary factor loadings of social support variables

	Neighbourhood Social Support
(1) Listens	0.907
(2) Crisis situation	0.844
(3) Helps when in need	0.749
(4) Be yourself	0.901
(5) Appreciates	0.871
(6) Consoles	0.899

Extraction Method: Principal Axis Factoring.

a 1 factors extracted. 5 iterations required.

Parks can be used as places to reaffirm an individual's relationship with friends and family. The parks works as a place to meet for your friend and family ties. Therefore, it could be questioned if residents that go to parks with family or friends, also also receive more social support. A linear regression (N=201) is performed on social support with regard to meeting family and/or friends in the park, controlled for strong ties; gender; ethnicity; district and age (see table 5.10, model 1; regression 22). The regression is significant ($F_{(6)}=39.77$, $p<0.001$), accounting for 55.8% of the variance. However, meeting friends and/or friends in the park is not significant ($p=0.071$). Hypothesis 4, *residents that go to parks with friends or family often, receive more social support*, is not proved. Next to that, the amount of social support given by neighbours can be different for people that do meet neighbours in parks or not. Also this is not significant: $t(198)=-0.698$, $p=0.49$.

To find a latent variable that reflects the types of social support given by neighbours, a factor analysis has to be performed. A Barlett's test is significant

(χ2(15)=1244.7, p<0.001). The Kaiser-Meyer-Olkin measure is 0.857, well above 0.6. A factor analysis could be performed. One variable meets the Kaiser-criterion and explains a total of 74% of the total variance. The factor loadings can be found in table 5.11. The neighbourhood social support factor is construed with help of principal axis factoring. A linear regression can test if the respondents that go to parks with neighbours, also get more social support by neighbours, controlled for age; gender; ethnicity; district; and number of strong ties (see table 5.10, model 2; regression 23). The model is (barely) significant (F(6)=2.161, p=0.049), but the only significant factor is the number of strong ties (p<0.022). Therefore, hypothesis 5, *Residents that go to parks in the neighbourhood often receive more social support by neighbours*, is not proved.

6. Discussion

6.1 Conclusion

The main goal of this research was to find the relation between public green space, social networks and social support in Ljubljana. The main question of this research was: *How does the use of public green space influence access to social support of residents in Ljubljana, mediated by social networks?* In order to answer this, the spatial lay-out of the parks were investigated, following the relation between social networks and park use and lastly the relation between social networks and social support.

6.1.1 How are parks spatially organized in neighbourhoods of Ljubljana?

Nearly the whole area of Ljubljana is in close proximity of parks (<300 meters). Every citizen has a park on at most 1km distance. People are willing to travel more for parks bigger than 5 ha. These parks are a bit further away from individuals, but most of the citizens are still within 1km reach of a park that is 5 ha. 20% of the respondents do not go to parks at all. 50% of the respondents have a park that is one kilometer of their home in their top three. 55% of the respondents have a park in their top three, that is further than three kilometers of their home. So, while neighbourhood parks are used, plenty of respondents seek the parks that are somewhat further away. Residents of Moste go to neighbourhood parks more often than residents of Roznik, but also go to parks that are more than 3km away more often. This is probably because most residents of Moste go to the Tivoli park, that is more than 3km away from Moste, but also to a park that is nearby. Residents of Roznik also go to Tivoli often, but for many respondents, the park is less than a kilometer away. In total, 81% of the park visitors go to the Tivoli city park.

The overall quality of the parks is considered very high by the respondents. The quality is only measured by the top three parks that respondents go to, so no statement could be said about parks in Ljubljana in general. Nevertheless, the citizens of Ljubljana have the option to go to parks that are of very good quality. 50% of the respondents go to parks within 1km of their home, so even close to the respondents there are parks of high quality.

Park amenities (benches and tables; sport and playground facilities) are existing in every park that respondents stated in the questionnaire. Since other parks (that are not returned as answer) do not have any amenities, it could be that residents choose parks for their amenities. This is speculation, since it could be that the parks that have no amenities, are not near Roznik or Moste, or are also not aesthetically pleasing, therefore have other reasons why respondents did not go there.

6.1.2 How does the use of parks contribute to the social network of individuals in Ljubljana?

The relation between parks and social networks can be found in numerous ways. Park visitors have a higher amount of strong ties than those that do not, but they do not have more weak ties. Conversely, visitors of neighbourhood parks do have a higher amount of neighbourhood weak ties, but do not have a higher amount of neighbourhood strong ties. Going to parks in the neighbourhood could increase public

familiarity of an individual, therefore having more local weak ties. Those that do go to parks, but not to parks in the neighbourhood do not have more local weak ties. Therefore, those that go to parks in the neighbourhood are more locally oriented on their weak social ties, compared to both those that do not go to parks at all and those that do go to parks, but not to neighbourhood parks. Respondents often went to parks together with family and/or friends, so parks are used as a physical entity to plan social activities around. It was proposed that residents of more vulnerable areas benefit more from parks than residents of less vulnerable areas. In this research, this is not the case: residents of Moste did not benefit more from park visits in terms of social ties than residents of Rožnik.

6.1.3 How does the social network of individuals influence the amount of social support?
This research focused on one subtype of social support: emotional support. Around a third of the respondents lack at least one type of emotional support. 10% of the respondents lack all types of social support. The influence of strong ties on social support is very high. Individuals that have many strong ties, also get more social support. The relation between park visits on social support exists at first, but is eliminated when the amount of strong ties is added to the model. This indicates that the relation between park visits and social support is fully mediated by the amount of strong ties .

Now the main question 'How does the use of public green space influence access to social support of residents in Ljubljana, mediated by social networks?' could be answered. The amount of social support of strong ties that one gets is related to park use, but this is fully mediated by the amount of strong ties of this individual. While it is clear that there is a relation between strong ties and park use, it is not clear how this relation exactly works. It could be that parks are the physical entities where strong ties build their social activities around, therefore reaffirming their tie. It could also be that individuals that have many strong ties, have more opportunities to go to parks. Lastly, it could be an unforeseen variable explains both going to parks more and having more strong ties, such as individuals being more outgoing.

The relation between social support of weak ties and park use is not tested in this research. To get a more complete answer on the research question, this should also be investigated. This is not investigated due to the way the social support is measured in the questionnaire, where only strong ties could give social (emotional) support (see attachment A/B).

Weak ties in the neighbourhood do relate to the use of local parks. Users of local parks have more local weak ties. Local social (emotional) support does neither relate with the use of local green space, nor with meeting neighbours in the park. This can also be due to the fact that only the social support of local strong ties is tested. It would be interesting to see how green space is related to social support of local weak ties, in terms of both emotional and instrumental support.

6.2 Implications

This research underlines once again the importance of public green space for the social benefits of citizens. The found relations between social networks and use of green space - for example the relation between strong ties and park visits or the relation between weak neighbourhood ties and neighbourhood park visits, are very weak. This, however, is expected. Individuals have many foci in their daily life. Other locations - the local supermarket, a sports club, the library - are among many of the other locations that could possibly be of influence on the social network of an individual. Parks are a small part of one's daily life, therefore the influence on the social network is not expected to be high.

This research took the step to measure actual park use, instead of green space in proximity, as previous research did (Kuo et al., 1998; Maas et al., 2009). The results of this research are in line with Kuo et al. (1998). They found that having neighbourhood green space is of influence on the amount of contacts within the neighbourhood. Similarly, the amount of weak ties in the neighbourhood are more for those that go to neighbourhood parks. Results differ from the study by Maas et al. (2009). In contrast to Kuo et al. (1998), they did not find a relation between social contacts in the neighbourhood and more green space in the neighbourhood. They did find an increase in social support, especially for those with a lower SES. In their research, the increase in social support could not be explained by an increase in social network. My research found an increase in social support as well, but this could fully be explained by the increase of the amount of strong ties. Kaźmierczak (2013) sees that parks are not only the places where social ties are developed, but also are reaffirmed. This research could underline that result. Park visitors do have more strong ties than those that do not visit parks.

The relation between visiting parks and the strong ties of an individual show that parks are not necessarily the places where new bonds are created, but rather a place to go to and spend time with those that are important in someone's life. These parks do not have to be within the neighbourhood. That does not mean that parks in the neighbourhood do not have a function. The individuals that went to neighbourhood parks, did know more residents in the neighbourhood. So, while distance does not matter for spending time in parks with those that are important, distance to parks does matter for the amount of local ties. Where visitors of parks outside the neighbourhood do not have an increase in local ties, compared to those that don't visit parks, the visitors of parks inside the neighbourhood do.

6.3 Limitations

The relation between the amount of strong ties and visits to parks exists. However, the mechanisms that can explain this relationship are still not determined. Do people have more strong relationships with others, because they see each other often in parks? Do people that have more strong ties, have more incentives to go to parks? Or are they generally more outgoing than those that do not visit parks, therefore also having more strong ties? This research cannot answer these questions.

There is a strong relation between social support and strong ties. While this relation is existing, it is also biased by the way the questions about social networks and social support were asked (see attachment B - translated survey). To save time

that it takes the respondent to fill the survey, the questions were asked together. The respondent was asked to fill the persons that are important to them and what kind of support these persons could give. The result is that only strong ties could give social support and no one else. Therefore there is a bias in the results, that people that receive a lot of social support, automatically have more strong ties. On top of that, only the support of strong ties is tested and the support of weak ties is omitted. There are two reasons this approach was chosen. First of all, the survey should not take too much time to complete. To reduce the amount of filling out the survey, the weak ties are asked as number of persons, instead of every name of every person that could be a weak ties. Social support of specific weak ties could not be asked. On top of that, this research focused on emotional support. Since strong ties are the ones that give emotional support (Heaney & Israel, 2008), it was not seen as a drawback to ask the two questions together.

The fact that residents of Moste go to parks further away than residents of Rožnik is explained by the fact that almost everyone (80%) goes to the city park Tivoli. While this park is nearby for a lot of residents in Rožnik, it is not for those in Moste. Residents of Moste have to travel more to get there, therefore the residents go to parks further away more than residents of Rožnik. The fact that residents of Moste go to neighbourhood parks more than residents of Rožnik is not so clear. There are many high rise buildings in Moste, while there are not so many in Rožnik. It could be that those that do not have their private green space - a garden - use neighbourhood parks more than others. To find out if this is really the case, more research is needed.

6.4 Recommendations

Now the relation between green space, social networks and social support is found, it is fruitful to look for mechanisms that are possible explanations for this phenomenon. Using different research designs, more information could be obtained about how ties are formed and reaffirmed in parks. Another study could be observational, where field visits to parks could serve as basis for new insights. A qualitative research with interviews to those that do or do not go to parks would be useful to show how relations form over time and how parks would play their role.

To limit the scope of the research, the social support was limited to emotional support. As other research finds, the individuals living next door are those that give instrumental support the most (Heaney & Israel, 2008; Unger & Wandersman, 1985). New research should look into the relation between green space in the neighbourhood, social networks and instrumental support. This could give interesting insights into the function of neighbourhood parks. To add to this, it is important to notice that types of ties overlap: a family member can live in proximity. In the survey of this research it was not possible to note down someone as both neighbour and friend, or neighbour and family. As neighbours "are simply defined by proximity: the people who live next door, the people who live on the block" (Unger & Wandersman, p.141), it should be possible to say someone is both. Family that lives nearby can be a very valuable source of both emotional and instrumental support.

There might be parks that residents choose not to go to. It would be valuable to know why someone chooses to go to parks that are further away, and leaving the neighbourhood parks unvisited. Is it because the quality of the parks is not good

enough? Are the parks in the neighbourhood unsafe? What implications does that have for the social network in the neighbourhood?

All-in-all, there is no question about the value of urban green space. This research tried to give insights on the relation between social networks, social support and green space. Nonetheless, many questions are yet to be answered. It is for future research to find out if social interaction in parks is the cause that people that go to parks have enhanced social networks. It is for future research to discover if instrumental support is related to park use and to explain the contrast between neighbourhood parks of good or bad quality.

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Attachment A: survey Slovene

Najlepša Vam hvala, da ste si vzeli čas in boste izpolnili ta vprašalnik. Sem Laurens in prihajam z Nizozemske, kjer zaključujem študij urbane geografije. Moje zaključno delo je raziskava na temo prednosti urbanih parkov in njihovega vpliva na neformalne odnose in medsebojno sodelovanje.. Vprašalnik je kratek in Vam bo vzel le 5-8 minut. Vaši odgovori in podatki bodo skrbno varovani. Če imate glede raziskave ali vprašalnika kakršnokoli dodatno vprašanje, me lahko kontaktirate na: l.oostwegel@gmail.com.

A. Osebni podatki

Starost: ....

Spol: ◯ Moški ◯ Ženski ◯ Drugo

Število članov v gospodinjstvu : ....

Število otrok, ki živijo doma (pod 15 let): ....

Primarno se idetificiram kot:

◯ Slovenec ◯ Srb ◯ Bosanec ◯ Hrvat ◯ Madžar

◯ Albanec ◯ Rom ◯ Črnogorec ◯ Italijan ◯ Drugo:...........................

B. Ekonomski status

Mojo sedanjo zaposlitveno situacijo bi opisal kot:

◯ Plačana zaposlitev ◯ Nezaposlen ◯ Študent

◯ Neplačana zaposlitev ◯ Vodenje gospodinjstva ◯ Upokojenec/ka

◯ Drugo: ....

Moji bruto mesečni dohodki so:

◯ Nižji od 950 € ◯ Med 1850 € - 2800 € ◯ Ne želim odgovoriti

◯ Med 950 € - 1850 € ◯ Višji od 2800 € ◯ Ne vem

C. Aktivnosti
Obkrožite katere aktivnosti imate in/ali si jih želite

	Imam	Želim	Ne želim
Teden dni počitnic v drugem kraju vsaj enkrat letno	◯	◯	◯
Večer zunaj vsakih 14 dni	◯	◯	◯
Večerja v restavraciji/gostilni enkrat mesečno	◯	◯	◯
Hobij ali prostočasne dejavnosti	◯	◯	◯
Pogostitev prijateljev pri sebi doma	◯	◯	◯

Internetni dostop   ◯   ◯   ◯

D. Kdo je pomemben v vašem življenju?

Napišite imena vseh pomembnih oseb v vašem življenju. Ne potrebujete zapolniti vseh praznih mest, vpišite le imena oseb, ki so vam zares pomembne.

Poleg imena in odnosa, preverite če za osebo velja ena ali več spodaj naštetih trditev in pravilne v tabeli obkljukajte.

1. *Nanj/nanjo lahko računam, ko potrebujem nekoga, ki me zna poslušati*
2. *Naj/nanjo lahko računam v primeru krizne situacije, tudi če zanje ni ustrezen trenutek*
3. *Naj/nanjo lahko računam, ko potrebujem pomoč*
4. *Z njim/njo sem lahko takšen/na kot sem*
5. *Vem, da me ceni kot osebo, ki sem*
6. *Nanj/nanjo lahko računam, da me pomiri v trenutkih razuburjenosti*

Ime	Vrsta odnosa				Trditve					
	Družina	**Sosed**	**Prijatelj**	**Sodelavec**	**1**	**2**	**3**	**4**	**5**	**6**
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

E. S koliko ljudmi ste redno v stiku?
Ne vključuje pomembnih oseb z vprašanja D

Družina	0	1-4	5-10	11-20	21+	oseb
Sosedje	0	1-4	5-10	11-20	21+	oseb
Sodelavci	0	1-4	5-10	11-20	21+	oseb

Prijatelji   0   1-4   5-10   11-20   21+   oseb

Pod pojem park štejemo vse od malega igrišča v ulici do velikih mestnih parkov.
F. Park v Ljubljani obiščem:

○ Dnevno   ○ Mesečno   ○ Enkrat na leto

○ Tedensko   ○ Vsake pol leta   ○ Nikoli

Če ste pri vprašanju F odgovorili Dnevno, Tedensko ali Mesečno, vam na vprašanje G ni potrebno odgovoriti.
G. V parke ne zahajam pogosteje, ker:
Možnih je več odgovorov

☐ Niso varni   ☐ Se zunaj ne počutim   ☐ So parki predaleč stran

☐ V parkih ne uživam   prijetno   ☐ Nimam časa

☐ Drugo: ....

Če ste pri vprašanju F odgovorili z Vsake pol leta, Enkrat na leto ali Nikoli, vam na vprašanja H, I in J ni potrebno odgovarjati.
H. V katere parke najpogosteje zahajate v Ljubljani?
Če imena parkov ne poznate, jih lahko označite na zemljevidih na zadnji strani vprašalnika, lahko pa jih tudi opišete.

Park 1: ....

Park 2: ....

Park 3: ....

| **I. Vsak park ocenite s številom od 1-5** *1 = zelo slabo, 2 = slabo, 3 = srednje dobro, 4 = dobro, 5 = odlično*	**Park 1**	**Park 2**	**Park 3**
Izgled parka	....	....	....
Opremljenost parka	....	....	....
Dostopnost do parka	....	....	....
Varnost parka	....	....	....
Kolikšna je vaša generalna ocena parka?	....	....	....

J. Zakaj obiskujete parke?
Možnih je več odgovorov

☐ Tam sprehajam psa   ☐ Tam se srečam z družino   ☐ Tam uživam v naravi

☐ Tam srečam nove ljudi ☐ Tam se srečam s sosedi   ☐ Z otrokom obiščem otroško igrišče

☐ Tam sem lahko sam   ☐ Tam se srečam s prijatelji ☐ Tam se ukvarjam s športom

☐ Drugo: ....

Zemljevida za pomoč pri vpra G.

Rožnik
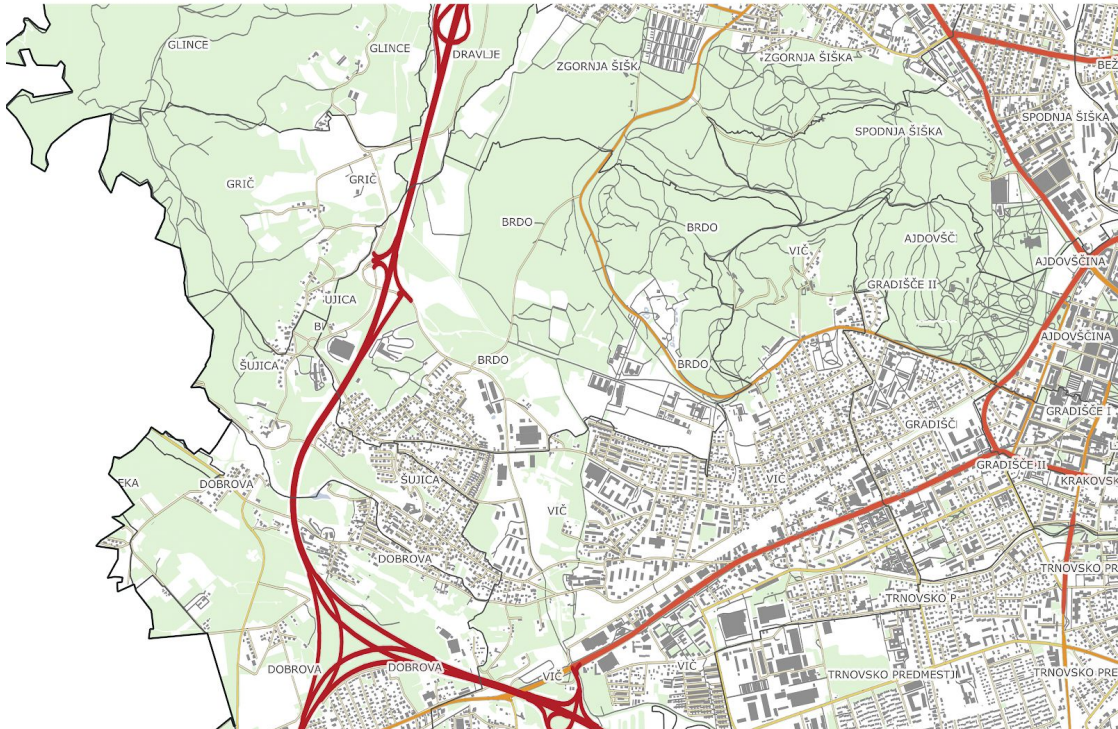
Ljubljana

Attachment B: translated survey

Thank you for your time to fill out this questionnaire. I am Laurens and I come from the Netherlands, where I finish my studies in urban geography. My thesis is a research on the benefits of urban parks and their impact on informal relationships and interaction. The questionnaire is short and will only take you 5-8 minutes. Your answers and information will be carefully guarded. If you have any additional questions regarding the survey or questionnaire, please contact me at: l.oostwegel@gmail.com.

A. Demographics

Age: ....

Gender: ○ Man ○ Woman ○ Other

Number of household members: ....

Number of children below 15 living at home:..

I primarily identify as:

○ Slovene   ○ Serb   ○ Bosnian   ○ Croatian   ○ Macedonian

○ Albananian ○ Roma   ○ Montenegrin ○ Italian   ○ Other:........................

B. Economic status

I would describe my current employment situation as:

○ Paid employment   ○ Unemployed   ○ Student

○ Unpaid employment ○ Working in the house ○ Retired

○ Other: ....

My gross monthly income is:

○ Below 950 €   ○ Between 1850 € - 2800 €   ○ Prefer not to answer

○ Between 950 € - 1850 € ○ Above 2800 €   ○ I don't know

C. Activities
Circle what activities you have and/or want

	I have	I want	I don't want
A week's vacation in another place at least once a year	○	○	○
An evening out every 14 days	○	○	○
A dinner at a restaurant / pub once a month	○	○	○
A hobby or leisure activity	○	○	○

Having friends over at home   ◯   ◯   ◯

Internet access   ◯   ◯   ◯

D. Who is important in your life?

Write down the names of all the important people in your life. You do not need to fill all the blanks. Enter the names of the people who really matter to you. In addition to the name and type of relationship, write down if the person is subject to one or more of the statements below and circle the numbers that match in the table

1. *Nanj/nanjo lahko računam, ko potrebujem nekoga, ki me zna poslušati*
2. *Naj/nanjo lahko računam v primeru krizne situacije, tudi če zanje ni ustrezen trenutek*
3. *Naj/nanjo lahko računam, ko potrebujem pomoč*
4. *Z njim/njo sem lahko takšen/na kot sem*
5. *Vem, da me ceni kot osebo, ki sem*
6. *Nanj/nanjo lahko računam, da me pomiri v trenutkih razuburjenosti*

Name	Type of relation				Support number					
	Family	Neighbour	Friend	Co-worker	1	2	3	4	5	6
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
_____	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

E. How many people are you in regular contact with?
This question does not include the persons from D

Family	0	1-4	5-10	11-20	21+	persons
Neighbours	0	1-4	5-10	11-20	21+	persons

Co-workers	0	1-4	5-10	11-20	21+	persons
Friends	0	1-4	5-10	11-20	21+	persons

The term park includes everything from a small playground in the street to large city parks.
F. I visit parks in Ljubljana::

◯ Daily   ◯ Monthly   ◯ Once a year

◯ Weekly   ◯ Once a semester   ◯ Never

If you answered question F with 'daily', 'weekly' or monthly', you do not need to answer questions G.
G. I don't go to parks, because:
Multiple answers are possible

☐ It's not safe   ☐ I don't feel comfortable   ☐ The parks are too far

☐ I don't enjoy parks   outside   ☐ I don't have time

☐ Other: ....

If you answered question F with 'every half year', 'once a year' or 'never', you do not need to answer questions H, I and J
H. Which parks in Ljubljana do you go to most often?
If you do not know the name of the park, you can mark it on the map on the back of this questionnaire or describe them.

Park 1: ....

Park 2: ....

Park 3: ....

| **I. Rate the quality of each park from 1-5**	**Park 1**	**Park 2**	**Park 3**
1 = very bad, 2 = bad, 3 = okay, 4 = good, 5 = very good			
Park aesthetics	....	....	....
Park amenities	....	....	....
Park accessibility	....	....	....
Park safety	....	....	....
Overall rating	....	....	....

J. Why do you visit parks?
Multiple answers are possible
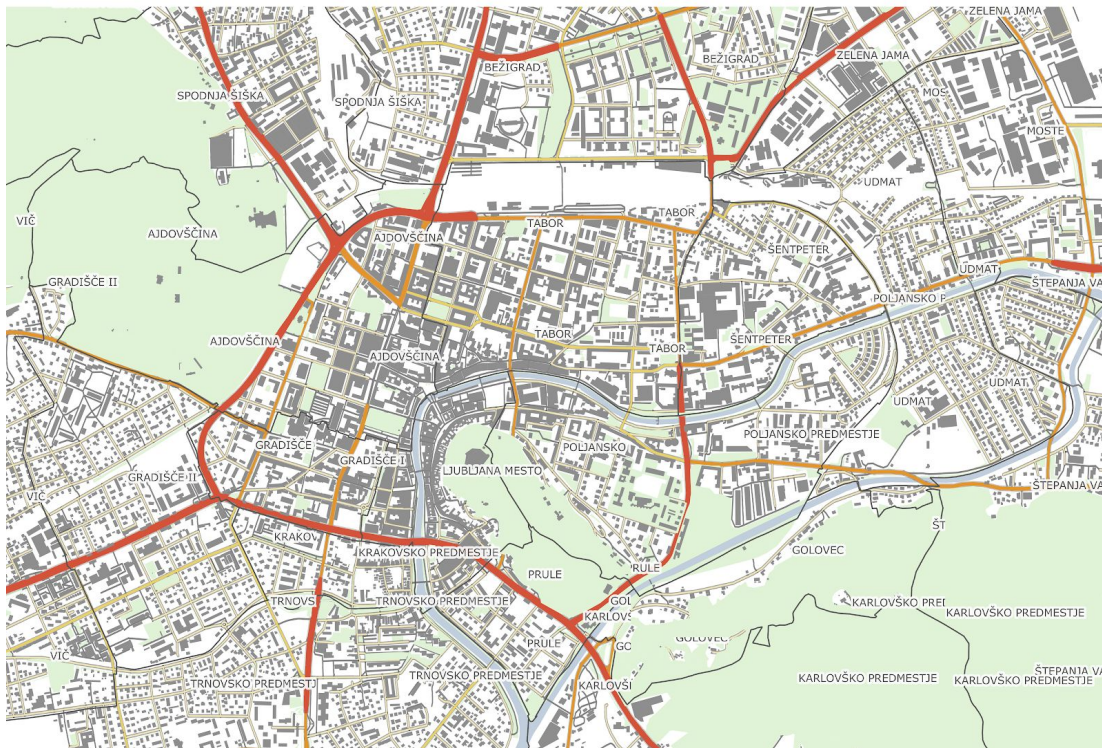
☐ To walk the dog   ☐ To meet my family   ☐ To enjoy the nature

☐ To meet new people   ☐ To meet my neighbours   ☐ To go to the playfield with my child

☐ To enjoy in solitude   ☐ To meet my friends   ☐ To do sports

☐ Other:..

Maps to help with Question H.

Rožnik
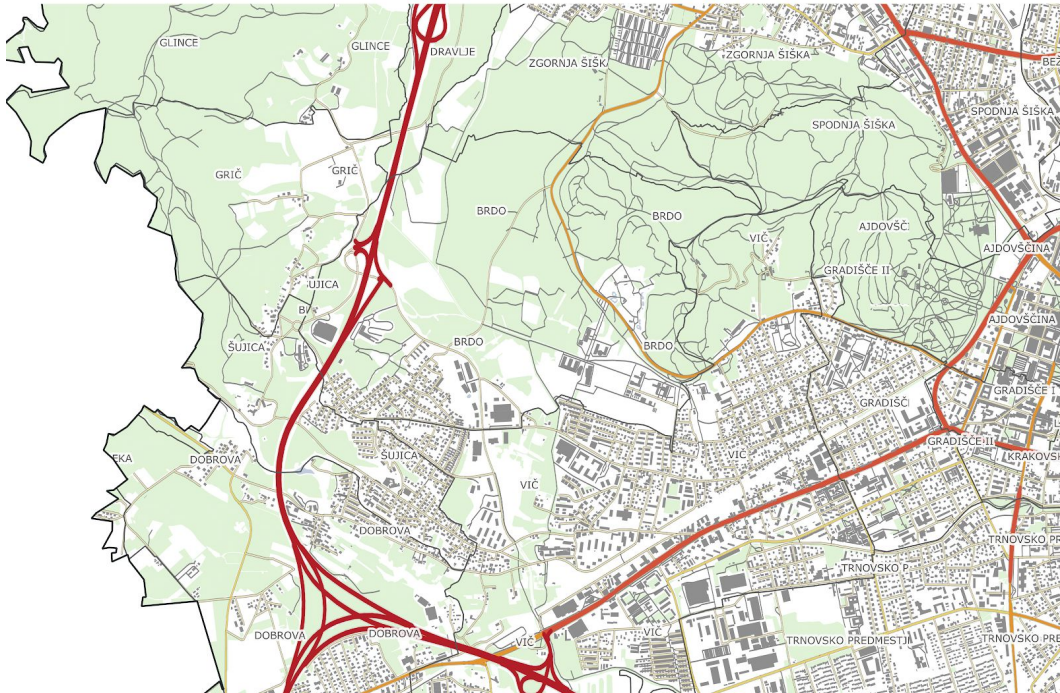
Ljubljana

Attachment C: Procedure of fieldwork

1. Announcement of fieldwork

Draga prebivalka/Dragi prebivalec,
jutri, 8.7., bi se študent urbane geografije med 16.00 in 20.00 oglasil pri Vas. Izvedel bi namreč anketo o parkih v Vaši soseski. Raziskavo dela za svojo magistrsko nalogo, ki jo izvaja v sodelovanju z IPoP-om (Inštitutom za politike prostora). Študent prihaja z Nizozemske in žal ne govori slovensko, vendar pa je anketa prevedena v slovenščino. Hvala za razumevanje in pripraljenost za sodelovanje.

Dear resident,
"Tomorrow, 8th of July, a student urban Geography will come by in between 16.00 and 20.00. He will do a survey about parks in your neighbourhood. He is doing research for his master's thesis, in collaboration with IPoP (Institute for Spatial Policies). The students comes from the Netherlands and unfortunately does not speak Slovenian, but the survey has been translated into Slovenian. Thank you for your understanding and willingness to participate"

2. Fieldwork

"Zdravo, sem študent z Nizozemske in v Ljubljani pišem magistrsko nalogo. Govorim samo malo slovensko, morda govorite angleško?"

"Hi, I am a student from the Netherlands and I am writing my master thesis in Ljubljana. I only speak a bit of Slovene, but do you speak English?"

If yes:
  Continue in English
If no:

"Moja naloga je raziskava o parkih, bi jo lahko morda izpolnili? Traja le pet minut."

"My master thesis has a survey about parks, would you like to fill it? It takes five minutes"

  If yes:

"Lahko pridem čez 15 minut nazaj po ankete?"

"Could I pick up the survey in 15 minutes?"

If nimam časa/I don't have time:

"Jo lahko izpolnite kasneje in jo pustite pred vašimi vrati, da jo lahko vzamem jutri"

"You could fill it out later and leave it at your door so I can pick it up tomorrow"

If multiple doorbells:

"Živijo v tej hiši še druge družine?"

"Do other families live in your house?"