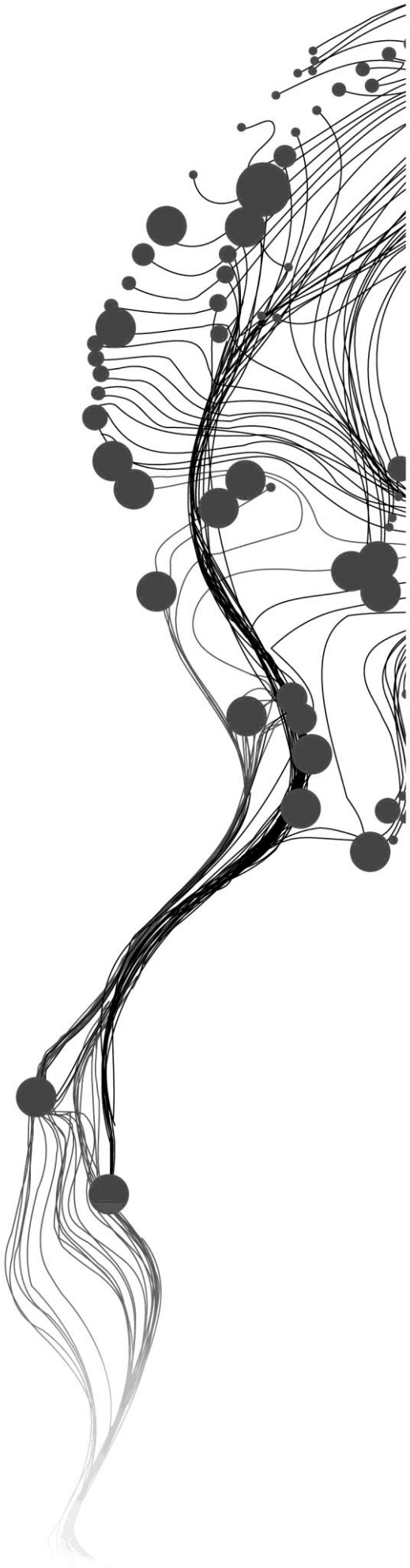
IDENTIFYING FACTORS THAT INFLUENCE TERTIARY STUDENTS' PREFERENCES, CHOICES, PERCEPTIONS AND USE OF URBAN PARKS IN ENSCHEDE

TAHANI AHMED ELBONDIRA
February, 2013

SUPERVISORS:
Dr. J.A. Martinez
Drs. E.J.M. Dopheide



IDENTIFYING FACTORS THAT INFLUENCE TERTIARY STUDENTS' PREFERENCES, CHOICES, PERCEPTIONS, AND USE OF URBAN PARKS IN ENSCHEDE

TAHANI AHMED ELBONDIRA

Enschede, The Netherlands, February, 2013

Thesis submitted to the Faculty of Geo-Information Science and Earth Observation of the University of Twente in partial fulfilment of the requirements for the degree of Master of Science in Geo-information Science and Earth Observation.
Specialization: Urban Planning and Management

SUPERVISORS:
Dr. J.A. Martinez
Drs. E.J.M. Dopheide

THESIS ASSESSMENT BOARD:
Prof.Dr.Ir.M.F.A.M van Maarseveen (Chair)
Ms. Dr. K.S. Buchanan (External Examiner, Wageningen University)

ABSTRACT

Although tertiary students are becoming large, active and unique population in cities, they are still unrecognized in research on urban green space (UGS) preference studies. It is argued that the way tertiary students perceive and use public spaces, generally, differ from other population groups, in particular the older and the less active groups. Therefore, their preferences are important to be understood and realized when creating and managing UGSs if it is sought to attract them, and potentially other groups, to use these UGSs. This study then addresses this lack of understanding by capturing the preferences, choices, perceptions and use of urban parks, particularly, in Enschede by tertiary students who are assumed to be a potential source of creative ideas that may help in re-imaging the city parks to be more interesting, attractive and inviting for use.

An adapted socio-ecological framework was used to understand the factors that influence these preferences, choices, perceptions and use patterns. These influences are organised into individual and environmental factors, at two levels; city and park level, to facilitate determining whether social or environmental interventions are more needed. In total 43 semi-structured interviews were conducted with students from both Saxion School and Twente University, and a participatory GIS (PGIS) approach was used to enable students' views to be communicated and visualized in a selected case study parks.

The results show that individual factors were the main influences on the non-use behaviour among the interviewed students. These factors mainly were; availability of free time and personal preferences for recreating in other outlets. In terms of preferences; managed and unmanaged nature of the landscape and presence of other users were found to differentiate between students in their park preferences. A more ecologically oriented group preferred Ledeboerpark and Van Heekpark for their more natural landscape setting and less presence of other users that enhance the feeling of being in a forest, while the other group preferred Volkspark for its managed nature and more presence of people that make the park more pleasant. When it comes to choice, although youth are hypothesized to be less influenced by proximity, distance appeared as the main factor influencing students' choice of their most frequently used park. Lack of free time availability coupled with the quite unnoticeable difference between the characteristics of the different case study parks could be a possible reason for them to choose closer parks.

At park level, the use of mapping approach during the interviews allowed to identify activity, favourite and problem areas. Places where natural landscape elements like lakes and fauna exist were the most utilized and appreciated for providing pleasant sceneries, while, more trees are needed in some parts to provide a visual separation from the city, especially in Volkspark. On the other hand, lack of some facilities could explain adapting some areas for studying, playing soccer or picnicking in some parks by students. However, generally the parks are perceived positively as safe and satisfactory.

These findings were used in formulating recommendations for urban parks planning, design and management in the city; in particular the case study parks, in addition to specific recommendations for follow-up this research. Also recommendations for UGS preference studies to utilise socio-ecological models and to develop more innovative methods that ensure effective consideration of communities' preferences in the creation and management of UGSs were formulated.

ACKNOWLEDGEMENTS

At the beginning, without the will of my God I would not have got this opportunity. I would like to thank my God who kindly answered my prayer and gave me the chance to travel and learn in a top universitiy and who always help me and look after me throughout my life and study.

I would like thank the European Union's Erasmus Munds program for providing me and many students around the world the financial support to study in prestigious universities in Europe. I would thank them for the opportunity they gave me to travel and to communicate with people from different cultures which provided me with invaluable social and cultural knowledge as well.

Without the constant support of my very patient and my very dedicated supervisors I would not have been able to pursue my research. I deeply acknowledge and appreciate the precious and long meetings Dr. Javier Martinez and Drs. Emile Dopheide have dedicated to guide me throughout the research period. Without their help I would not have come across many effective ideas and valuable documents because of the language which was sometimes a barrier that they helped me to overcome . I would never forget the patience and the kind support they gave me throughout my research. Truly, I am praying to God to find such honest and dedicated supervisors in my next step in my life.

I acknowledge the support I got from the Municipality of Enschede to my research. I am so grateful for the time, meetings, documents and emails they dedicated to my work. I would like to thank particularly, Dr. Jan Schukkink, senior communication advisor at the Municipality of Enschede, Dr. Rolf Oldejans and Mr. Stefan Volmer, policy advisors at the Urban Development Department and Public Space Administration at the Municipality of Enschede, Mr. Remco van Hogen and Mr. Oude Booyink, district managers at the Wesselerbrink district. I would also like to thank Dr. Violette van Heek and Mr. Hans Schutte, members of the management committee of Volkspark, for the precious time they gave me. I would also like thank Ms. Josette Minten from De Woonplaats, the housing corporation, and Drs. Joke Grooters, from KISS.

I am so grateful to Dr. Essam Badran, Dr. M. Refaat and Dr. U. Nassar who supported me to take that chance and for their constant moral support to me during my study period. I would also like to thank my family and especially my dad who supported me from the first moment I got my scholarship. I would like to thank my friends; Asmaa and Samaneh for joining me to my fieldwork at the UT and Saxion and for being more than sisters to me.

Finally, the convenient study environment at ITC and the hospitality of the city was really something that helped me a lot during my study and my short staying at that great place.

Tahani Ahmed Elbondira

Enschede, February, 2013

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

1.1. Background and justification

Urban green space (UGS) is a main component in the urban fabric of any city. It can be considered as public good that is mostly should be provided and managed by local governments (Choumert & Salanie, 2008; del Saz Salazar & García Menéndez, 2007). They are essential in enhancing the quality of life and well-being for the city dwellers by providing places for social interactions, recreation, rest and relaxation in addition to their health and psychological benefits to urban residents (T. Brown & Bell, 2007; Chiesura, 2004; Gidlöf-Gunnarsson & Öhrström, 2007; Seeland, Dübendorfer, & Hansmann, 2009). Social benefits of UGSs do not only stop at their recreational potentials but they do also contribute in enhancing deeper social values such as; community attachment, social integration and social cohesion which can be strengthened through providing space for interaction in public spaces including UGSs (Arnberger & Eder, 2012; J. Francis, Giles-Corti, Wood, & Knuiman, 2012; Seeland et al., 2009) .

The UGS does not only benefit the residents but also, in case of proper design and planning, it helps in controlling urban sprawl and suburbanization by providing the suburban life that city dwellers seek to so that they become less motivated to move to the suburbs (Mieszkowski & Mills, 1993). Moreover, the environmental benefits of urban green spaces is much appreciated as they help in mitigating the impact of heat islands, air pollution and noise experienced by urban residents (Gidlöf-Gunnarsson & Öhrström, 2007; Kuttler & Strassburger, 1999; Wong & Yu, 2005).

However, in spite of these benefits, the current pressure on urban land may undermine realizing such importance of UGSs by urban planners and land use policies. More than 60% of world population is expected to reside in cities by 2030 (United Nations Population, 2005) which increase the demand on residential ,commercial, recreational, business parks and community facilities land uses in cities at the expense of UGSs. This current trend in land development inside cities has resulted in depletion and shrinkage of the UGSs (Bento, Franco, & Kaffine, 2011; Chiesura, 2004; Van Herzele & Wiedemann, 2003).

1.1.1. Societal relevance of the study

This increased demand on urban land has lead the planning, design and management process to be decided upon and dealt with at higher levels .Because of the pressure that the provision of UGSs is facing, the current focus is mainly oriented towards more ecological concerns and nature preservation initiatives of larger-scale ecological structures with much fewer attention paid to the urban human-scale green spaces (Chiesura, 2004). While in planning for the human-scale UGSs, most of the attention is given to factors as demand, supply and accessibility without much consideration given to the more subjective human needs (Mahmoud & El-Sayed, 2011; Neema & Ohgai, 2010; Van Herzele & Wiedemann, 2003). As a result, many UGSs despite being available and accessible, they fail in functioning properly.

However, this is not to underestimate the importance of a factor like proximity, as in fact, proximity of green spaces to urban residents have been found in many studies to affect urban park attendance in particular for users who use non-motorized modes to reach their destinations (Kienast, Degenhardt, Weilenmann, Wager, & Buchecker, 2012). Instead, it is meant for arguing that proximity should not be

considered alone as the main factor affecting people choices. As a study in a Latin American context found that the existence of sports fields in the nearby green spaces led women to perceive the park as a place for men and in turn to be less frequent users of the space (Wright Wendel, Zarger, & Mihelcic, 2012). Another study in a Danish city found that almost half of the residents of the central part of the city did not choose their nearest green as the most visited urban green destination as probably they have other preferred parks and they are able to travel farther to reach their destinations(Schipperijn et al., 2010).

At the level of park design there is no much difference. With a full recognition of their creativity and professionalism in the design processes, landscape architects need not to treat parks as aesthetic pieces in order not to create pleasant yet disused green spaces (pps-a, 2012). Perceptions and opinions are found to differ between designers, the space users and among the users themselves, which affects the satisfaction of the users (Hershberger & Cass, 1988; Laing et al., 2009; Newman, 1972). According to Lynch (1971) ideally the users are the group who should be designing their spaces, but since design professionals are undertaking the task, understanding the interaction between man and the existing built environment can be used to extract information to be used in managing current spaces and in the creation of new spaces that reflect the needs of the users. Thus, planners and designers need to understand factors that affect people choices and green space use if the use of green spaces sought to be improved.

In fact the significance of understanding preferences and needs of current and future users in public spaces, parks and green areas among them, is not a new concept. Lynch and Hack (1985) in their book *Site Planning* have assigned a full chapter discussing one of the main principal tasks in open space planning which is creating places that fit the users' needs. They criticized how planners omit current and future users' preference in the planning of open spaces. In the case of historical landscapes in particular, understanding the needs of current users is more significant as these needs evolve as human, cities and communities evolve, which imply that the functions of these historical landscapes would not anymore satisfy the needs of current users (SAUL, 2006; Tyrväinen, Mäkinen, & Schipperijn, 2007).

Therefore, knowing where do people go and which parks do they use more is not enough for informing the planners, designers and managers of UGSs and parks in creating responsive green spaces. Understanding the preferences and understanding the factors behind these choices, perceptions and use patterns of the current community is a fundamental requirement in supporting the planning and development policies and interventions to create places that respond to these evolved and complex needs and where different groups in the community would be encouraged for using them.

1.1.2. Academic Relevance of the Study

In the academic field, the research on the human and social dimension of UGS planning is recognized to be less addressed than the economic and the ecological dimensions (Gobster & Westphal, 2004; Jansson & Lindgren, 2012). The experience of UGSs by its users and by the urban population is one out of the five key themes identified by James et al. (2009) to form a research agenda for UGS planning that need further understanding. One of the questions that is posed to be answered by research is to identify the quantities and qualities of urban green that lead to their regular use by different segments of the society. Bell et al. (2008) stated that the perception of green space by users is one of the gaps in the research on green space planning asserting the need for more qualitative approaches to gain better insights on how different people view green spaces . According to Swanwick (2009) , the interrelations between the factors that shape the preferences of green spaces are not comprehensively investigated, moreover, most of the research in that area are concerned with rural other than urban landscapes.

1.1.3. University students as park users

From a planning perspective, as Lynch and Hack (1985) argued; in order to benefit a planning or management project of open space, it is important to make a careful selection of the user group to be involved. In green space preference studies, older age groups are more likely to be involved although youth are more active users of these green spaces; indeed, they are found to form around half of the active users of urban parks. However, since older groups are more likely to respond to mail surveys, which are the main methods used in these studies, their participation surpasses the youth participation (Dunnett, Swanwick, & Woolley, 2002; Tyrväinen et al., 2007). Therefore, this study aimed at bridging this gap by involving younger groups, and in particular tertiary students.

The choice of tertiary students was not only motivated because they are a less studied group but more importantly because they are believed to be a creative group. Tertiary students are proved in a study in Melbourne to provide creative, different and rich perceptions, preferences and uses that helped in realizing more social and physical potentials of the centre of the city (Fincher, Carter, Tombesi, Shaw, & Martel, 2009; Fincher & Shaw, 2007; Tsutsumi & K. O'Connor, 2006). Therefore, choosing students was expected to enrich the current perceptions on parks which go in line with the principles of making responsive, interesting and attractive urban parks, which is the main objective behind studying the preferences, choices, perceptions and use of urban parks in this study.

Moreover, when tertiary students inhabit cities in large numbers adhering to their educational institutions, they are believed to be a potential, if not actual, gentrifies of the cities, in particular non-local and international students. That can be explained by the mutual influence between the students and the organization of the urban space; on housing sectors, especially for non-local students whose presence exert more pressure on housing stocks, commercial sectors and on the cities' public spaces; however, their experiences in cities are less researched (Fincher R. & Shaw, 2009; Tsutsumi & K. O'Connor, 2006). Therefore, the study was motivated to choose such a dynamic and influencing user group in order to bridge this acknowledged gap in involving and understanding the perceptions of that group.

1.2. Research problem

Indeed, understanding the factors that influence the preferences, choices, perception and use is not an easy task and the findings in a spatial context will not necessarily fit into another context. Moreover, as the preference, choice, perception and use can be explained as interaction between individual, physical environmental and socio-cultural factors (Giles-Corti, 2006), what suit a group of population might not suit other groups. Therefore city planners need to realize that different people, different spatial contexts and different cultural environments would need different solutions (Schipperijn et al., 2010)

Many studies and European projects have been trying to involve communities in green space planning and management. This participation is realised through examining peoples' preferences, choices, perceptions and use patterns of green spaces in order to inform city planners, urban designers and management officials with the possible areas of intervention (Bell et al., 2008; G. Brown & Weber, 2011; Chiesura, 2004; Gobster & Westphal, 2004; Luymes & Tamminga, 1995; Oguz, 2000; pps-a, 2012; SAUL, 2006; Schipperijn et al., 2010; Tyrväinen, Silvennoinen, & Kolehmainen, 2003; Van Herzele & Wiedemann, 2003; Werquin, Duhem, & Lindholm, 2005). However it is recognized that there is still a lack of people participation and also there is still a need for more empirical and methodological studies that assist planners and designers of green spaces in understanding users' preferences, choices, perceptions and use patterns. This understanding is essential in allowing planners and designers to create places that better suit

users' expectations with emphasizing the recognized lack in that research area on younger age groups in particular (Laing et al., 2009; Tyrväinen et al., 2007; Werquin et al., 2005).

In Enschede, a study focusing on the perception and use of a single park "*Wesselerbrinkpark*" has been conducted. The researcher has examined the perceptions and use patterns of different age, gender and ethnic groups of the park users. Respondents are residents of the district that is characterized by high concentration of residents from non-Dutch background (van Vianen, 2010).

The study has examined perception and use of different user groups. Alternative design proposals that aim at realizing the users' requirements are presented, however, the study has not examined the factors behind choosing the park in particular among other parks nor the qualities experienced in different parks in the city(van Vianen, 2010). Therefore, it does not allow for the city and park managers to locate (and understand) areas (and diversity) of certain qualities, needs and problems that are needed so that areas of intervention could be defined and further planning and design decisions can be informed (G. Brown, 2008; G. Brown & Weber, 2011).

Therefore this study addresses the lack of understanding of factors affecting the preferences, choices, perceptions and use of green spaces, in particular urban parks, by current users focusing on tertiary students. On one hand because students' experiences in cities, including public spaces, are believed to be less researched (Fincher R. & Shaw, 2009), and as an age group that is recognized to be less considered in the research on green space preferences(Dunnett et al., 2002; Schipperijn et al., 2010; Tyrväinen et al., 2007). At the other hand, to realize the potential that tertiary students, national or international, can provide if they are involved in terms of their creativity that can enrich the place and help in creating more attractive and desirable parks (Fincher et al., 2009; Fincher & Shaw, 2007; Fincher R. & Shaw, 2009).

Factors that lie behind preferring and choosing certain park for visiting along with perceptions of these parks and the using patterns are all investigated in these parks in order to provide information for the urban parks planners, designers and managers.

1.3. Relevance of the study to Enschede

Enschede parks can be characterised as long-standing parks that were created during the era of the textile industry. Two out of the ten parks in the city were created to act as relaxation places for the workers in the textile industry while most of the other parks were created early in the beginnings of the 20th century upon the donation of the textile barons' estates to the municipality (Parkeninenschede, 2012). However, the economic structure of the city has changed since then, as the industry left the city and more educational institutions have settled in the city affecting its demographic composition in turn.

In Enschede, youth are found to be less active participants in the projects launched by the municipality that aim at involving the public into the planning and management of the built environment, including the urban green[1]. Since the users of urban green space can be categorized according to their age-group and in an organized classification into preschool, schools…etc.(Jansson & Lindgren, 2012), the study will focus on that younger group of urban park users considering students pursuing their tertiary education in the city as the study population. It is their assumed higher mobility that might enhance their perception and

[1] According to one of the interviewees at the municipality of Enschede.

impressions on different green spaces and parks in the city which in turn would feed rich information into the study.

In addition, students following their tertiary studies are chosen in particular as they constitute a unique population of the city. Enschede is one of the nine largest cities in the Netherlands in terms of the student population and the highest in the east of the Netherlands (Tsutsumi & K. O'Connor, 2006). Moreover, in realizing one of the objectives of the regional agenda of Twente, students are considered as one of the targeted population in the improvement process of the quality of life of the residents. Attracting students to the region and the highly educated residents are encouraged to help in raising the international orientation of the region as a knowledge and technology region (Management Committee Regio Twente/ Netwerkstad, 2008). Therefore, students' preferences in urban green space are aimed to be involved in the planning, design and management of urban green.

1.4. Research Objective and questions

- Main objective

The main objective of the study is to explore the preferences and actual choice and perceptions and use patterns of urban parks in Enschede by tertiary students in order to enhance the use of the city parks.

- Sub-objectives

Sub objective 1: *To understand contemporary urban park issues identified by policy makers*

Q1: How is the provision of urban parks in the city supplied and managed?

Q2: What are the contemporary issues in the parks that are considered to be significant by urban park managers and policy makers?

Q3: How is the state of community involvement in the planning and management of parks? Are there any visions on involving students into the planning, design and management of urban parks?

Sub objective 2: *To identify the factors that affect students' preference for, and choice of, urban parks in Enschede*

Q1: What are the factors that influence non-use behaviour of parks?

Q2: What are the factors and the spatial distribution of these factors influencing the preference for the parks?

Q3: What are the factors and the spatial distribution of these factors influencing the choice of the parks?

Sub objective 3: *To identify the factors that affect students' perception and use of the case study parks in Enschede*

Q1: How are the parks used and what are general perceptions of the parks?

Q2: What are the factors and the spatial distribution of these factors that affect that perception inside the case study parks?

Q3: What are the factors and the spatial distribution of these factors that affect that use inside the case study parks?

1.5. Conceptual framework

In order to make responsive parks that attract users and cater for their requirements and needs, preferences, choices, perceptions and use patterns of users, tertiary students as a study population, need to be understood. The use of qualitative approach in this study is expected to generate rich and complex information that needs to be categorized in order to define the final factors and influences. Therefore, an adapted version of socio-ecological models of two studies (Lachowycz & Jones, 2012; Schipperijn et al., 2010) is used to structure the interrelated factors, extracted from literature, into the following framework that will guide the analysis and discussion of the findings.

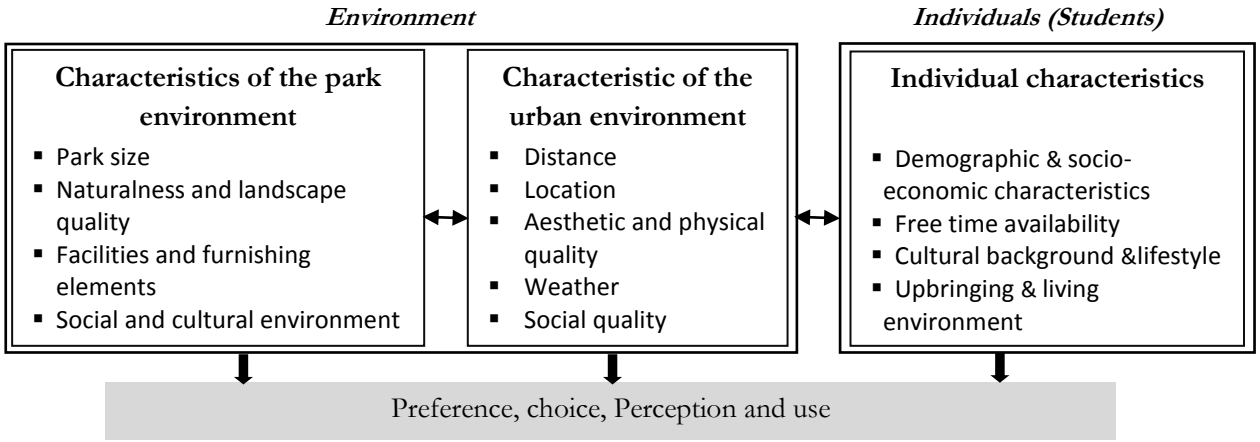


Figure 1: conceptual framework

The model suggests that preferences, choices, perceptions, and use are outcome of the interaction between individual and environmental factors. After reviewing literature on factors, environmental factors are categorized at two spatial levels; city level (urban context) where planning policies can be done and the park level where more finer design and management decisions can be taken. For more detailed explanation refer to section 2.3.

1.6. Thesis Structure

The thesis is organized in the following structure;

Chapter one: Introduction

The chapter introduces the background information and justification of the research leading to the research problem statement, main objectives, sub objectives, research questions and the conceptual framework for the study.

Chapter two: Understanding preferences, choices, perceptions and use of urban parks and green spaces

Clarification of the main terms used in this study is presented in the first section. The second section reviews literature on theoretical concepts, initiatives and projects that explain the significance of studying users' preferences, choices, perceptions and use patterns. In the third section, many empirical studies that deals with the human dimension of the green spaces were reviewed which led to conceptualizing and identifying the factors that affect the users' preferences, choices, perceptions and use patterns. The last section deals with the methodological approaches that have being followed in that area of research. The theoretical base of selecting the methods that deals with involving users perceptions in landscape design and management was reviewed. Current methods that utilize the potentials of GIS in analyzing and presenting users perceptions and experiences are reviewed and discussed leading to the selection of the research method.

Chapter three: Research methodology

The chapter reports on the methodological approaches that were followed in order to collect the primary and secondary data, indicating the format and the type of the data collected by each method. Methods of data preparation and analysis were also reported and discussed in this chapter.

Chapter four: The urban parks in Enschede: main characteristics and current issues in the park planning, design and management

The following chapter discusses in more detail the characteristics of the study area. This includes; general overview of the city parks and discussion on the main physical, use and spatial characteristics of the case study parks. Finally current policies on parks planning and management, including community involvement initiatives, along with current concerns and visions identified by interviewees from policy and management departments were discussed, concluding with the main questions and issues raised by the interviewed policy makers.

Chapter five: Factors behind tertiary students' preferences, choices, perceptions and use of urban parks in Enschede

The chapter discusses the results in relation to the finding of previous studies, concerns of policy makers and park managers and in relation to the features of parks concluding with the main findings of these discussions.

Chapter six: Conclusion and recommendations

The chapter concludes with the main findings of the study indicating how the research objectives have been achieved. Recommendations for policy makers and for practioners in urban parks design and management are presented; also the limitations of the research and recommendations for further studies are formulated.

2. UNDERSTANDING PREFERENCES, CHOICES, PERCEPTIONS AND USE OF URBAN PARKS AND GREEN SPACES

This chapter reviews theoretical, empirical and methodological principles embraced in the scope of understanding the users' preferences, choices, perceptions and use in UGSs including the urban parks.

First a clarification is given of what is meant by the "users" of the public space, including urban parks and what is meant by preferences, choices, perceptions and use of UGSs.

The following section discusses the significance of understanding the preferences, choices, perceptions and use of urban green reviewing some initiatives, projects and theoretical concepts concerned by the involvement of different segments of the community. In that section these different users' categories are identified with argumentation on the potential of involving students as an innovative group of the community.

This is followed by discussing different factors found to affect the preferences, choices, perceptions and use of UGSs by reviewing empirical studies on UGS preference. The use of the socio-ecological model in understanding the complex interrelations between these factors is then discussed.

The last section reviews different methodologies applied in understanding the preferences, choices perceptions and use of UGSs and relevant planning concerns as perceived by local communities. The section discusses the potential of using participatory GIS (PGIS) approaches in representing and deepening the understanding of the preferences, choices, perceptions and use of UGSs (including urban parks). Finally the selected method is identified and the rationale behind that selection is discussed.

2.1. Clarification of terms

The research seeks to understand the preferences, choices, perceptions and use of urban parks by a group of users, who are tertiary students. Thus first; some terms need to be clarified from a theoretical and empirical background with identifying the definitions that are employed in the research.

2.1.1. Users of public spaces

In their book *Site Planning*,Lynch and Hack (1985) defined users of public space as: " all those who interact with the place in any way, live in it, work in it, pass through it, repair it, control it, profit from it, suffer from it, even dream about it."(p.67). However they further explained how users can be categorized based on their demographic characteristics and environmental backgrounds, which are responsible of varying their responses and interaction with the public spaces.

This, in turn, would generate a wide range of user classes for each project with various needs and requirements. However, neither the project resources nor the emerging conflicts, if all users were involved, would make involving these conflicting viewpoints feasible. Therefore, they asserted that the planner is forced to make a choice of a user class that concerns the project objectives and that represents general needs and requirements of other groups. Sections 2.2.1 and 2.2.2 describe further the users' categories/groups and discuss the potential of considering tertiary students as users of public space, urban parks among them.

2.1.2. Preference, choice, Perception and use

The way the UGS is planned, designed and managed plays a principal role on how the users respond to it. However, these responses are also influenced by the personal characteristics of the user. These responses are shaped in form of preferences for certain green spaces, perceived meanings, experienced qualities, perceived problems and requirements, and use patterns (M. Francis, 1989; Lynch & Hack, 1985; Swanwick, 2009).

The research focuses on understanding the influences on the responses to the urban parks focusing on understanding the factors that affect preferences, choices, perceptions and use patterns in particular. Although these terms have no clear cut definitions and they are used loosely in literature (Swanwick, 2009), this section tries to present some definitions from the literature and tries to give operational definitions that are followed in this study.

- Preference and choice

Preference is defined as: "greater liking for one alternative over another or others" (Oxford Dictionaries, 2012). Swanwick (2009) has defined preference as: "liking one area of land or landscape better than another". He used that term trying to understand why some green spaces are more favoured by people than others. In this study, this definition of preference is adopted, as it is meant by which parks are the most preferred or favoured by participants.

However, although understanding the preferences is principal in creating places that best suit the expectations and requirements of the users. The actual behaviour need to be understood. There could be, for instance, strong environmental factors such as big distances that hinder the user from visiting the preferred park. Then investigating factors that affect their choice, (defined as: "an act of choosing between two or more possibilities" (Oxford Dictionaries, 2012)), in relation to the preference would assist in considering the related planning, design and management aspects (e.g. distance) when urban parks are created or managed. So, the study looks into *Choice* besides *Preference*.

- Perception

"Perception is concerned with both sensual (usually visual) responses to landscape and with the way that people attach meaning and value to it" (Swanwick, 2009). In a more empirical term, perception can be meant by; the value that users assign to parks (i.e. places for recreation, social interaction, ecological and environmental values, etc), the requirements of additional green spaces or needs for additional amenities and facilities, the experienced qualities or the perceived problems and dangers (Sanesi & Chiarello, 2006).

In this study, perception is meant by the general meanings or characters that students attach to parks; classified into eight parks' characters according to Stigsdotter and Grahn (2002) as; wild, serene, festive, culture, pleasure garden, space, rich in species and the common. Other than the meanings, perception is also used in describing the perceived and experienced positive qualities, problems and requirements that can be investigated to inform park landscape designers and managers. According to Sanesi and Chiarello (2006) , perceived qualities or problems can range from; perception of safety, privacy, perception of lacking/or having necessary facilities and others.

- Use

Analyzing use patterns is considered to be the most suitable task for site planners according to Lynch and Hack (1985). Exploring which activities are performed in a particular site, like a park, what is the

frequency of visiting that park and for how long and with whom are all meant by use or use pattern (Lynch & Hack, 1985; Sanesi & Chiarello, 2006).

In terms of activities, many uses have been identified in previous studies; mostly they were classified into passive and active uses. Passive uses include; sitting, relaxing, enjoying the surroundings, gathering with friends, and having picnics while active uses include running, playing sports and others. Study or reading activities were classified either as cognitive or passive uses in some studies (Dunnett et al., 2002; Jim & Shan, 2012; Lo & Jim, 2012; Northeasttrees, 2013; Oguz, 2000). Another classification can be found in paper of Kaźmierczak (2013) where activities are classified into necessary (i.e. passing through the park), optional (i.e. relaxing) and social (i.e. gathering with others, group sports,...). In general, the use or the activity carried out is believed to be influenced by the park characteristics. For instance bigger parks with rich sports facilities would facilitate engaging in active uses. However, necessary activities are performed regardless of the quality of the parks (Kaźmierczak, 2013; Lachowycz & Jones, 2012).

In this study, the use is meant by the activities that students perform, and would like to perform. Mainly they are named without classification (i.e. walking, sitting, cycling, reading, studying, running, picnicking etc). However, in some cases; passive, active and cognitive classifications are used to group the activities for the sake of contraction, in particular for instance, when there is a pattern of perceptions (requirements, problems...) related to a group of activities that can be grouped under one of these classifications. Also, the use in this study includes frequency, duration of visiting, with whom the students usually visit parks and using which transport modes.

However, it should be mentioned that preferences, choices perception and use are also influencing each other. For instance, according to Swanwick (2009), perception is closely linked to preferences. It might be that certain park is preferred because it is perceived as a wild and more natural place. Also, lack of sports facilities in a park might be perceived as a problem by a person who uses the park for sports activities. Therefore these concepts may not be understood in separate from one another (Lynch & Hack, 1985; Swanwick, 2009). However, in this study, preference and choice are used as rooming terms in understanding why students prefer certain parks in the city and why they eventually choose a park to be their frequent destination over others in the city, without ignoring the influence of the perception and use. While perception and use focus mainly on the more specific problems and requirements perceived inside each park, that are developed through using the park, so that proper design and management decisions can be made at this level.

2.2. The art of "creating places"

If these preferences, choices, perceptions and uses are well understood and then considered in creating and managing the urban parks , and in general public spaces, then a place ,and not just a design, that caters and respond for the users' needs and expectations is realized. According to Lynch and Hack (1985), to make places that respond to the human needs both the nature of the place and the way its users act in it and value it are significant to understand.

Indeed, many European and American projects have adopted that concept in planning, creating and managing UGSs and public spaces in general. The main approach in realizing that concept of making responsive and attractive public spaces is by adopting bottom-up approaches that emphasize involving the users of the space in the planning, design and management processes (Bullock, 2005; pps-a, 2012; SAUL, 2006; Werquin et al., 2005).

One of these projects; GREENSPACE Project; examines the value of parks by utilizing participatory, visualization and users' surveys methods in order to define green spaces, public spaces and other landscapes that best respond and satisfy the needs of the users. The outcomes of that project intend to create a decision support framework where planners, decision makers and community can interact to shape the green space decisions (Bullock, 2005).

In the United States, an approach of planning, designing and managing public space, Placemaking, can be seen as a translation to the concept of making responsive places. Indeed, it aims at creating places that attract people because they are interesting. In that course, it asserts the need to understand the values and the experiences of the space users in order to create places and not just spaces (pps-a, 2012).

However, involving "community" or the" public" is a general term that needs more specification. This community can be categorized into many user groups that have various preferences, choices, perceptions and use patterns As referenced before, Lynch and Hack (1985) have confirmed the unfeasibility of including all categories of users, they mentioned that a careful selection of user classes ,that most suit the project objectives and that ensures minimal representation of others requirements ,needs to be made. Therefore, first, understanding of the user categories is required;

2.2.1. Users' categories

For urban parks and UGSs, Jansson and Lindgren (2012) mentioned that a classification can be made between organized users (pre schools, schools...etc) and unorganized users based on age, gender…etc.Dunnett et al. (2002) in their report of the Urban Green Space Taskforce, have categorized users of urban parks mainly based on demographic characteristics (i.e. age, gender, ethnicity and disability) and the type of use; active or passive. However, they only explained the impact of these characteristics on the frequency of use and not on the preferences, choices or perceptions.

However, in the literature on green space preference; demographic characteristics, age, gender and other characteristics are actually proven to create various preferences and perceptions, thus, creating users' categories (section 2.3). Therefore generalizing what elderly, for instance; prefer, perceive and need over other user categories from other age groups is doubtful (Lynch & Hack, 1985). If the principles of making responsive parks, yet interesting and attractive, then younger age groups, that are normally absent in participating in UGS preference studies and initiatives, can be a potential creative agents in making urban parks more attractive and viable; based on the evidence that their choices and requirements in urban parks are not subordinate to only proximity, like the older and less mobile groups (Dunnett et al., 2002; Tyrväinen et al., 2007).

2.2.2. Students as potential category

Tertiary students as a potential representative for that younger age group can be even a more creative group, in particular when there is category of international groups of students who might enrich the perception of green spaces due to their varied cultural backgrounds (Fincher & Shaw, 2007; Lachowycz & Jones, 2012; Lo & Jim, 2010). The way tertiary students and the international students affect the cities has being, quite recently, recognized as the impact on the social, physical and economic characteristics of cities is considerable (Fincher et al., 2009; Fincher & Shaw, 2007; Tsutsumi & K. O'Connor, 2006).

In relation to the public spaces, it is believed that there is a mutual interaction between both; the students and the public space. In one hand, public spaces should be prepared for that kind of temporary residents as the housing sectors for instance are prepared, in particular for international students, and on the other

hand, this group can enrich the initiatives for creating more usable responsive and interesting public spaces according to Fincher et al. (2009) who observed the ability and creativity of students in making central Melbourne a lively place for their social interactions. However, the degree on which students, in particular international students, interact with public spaces depends on common and uncommon factors shared with other researched user groups. For instance, distance to UGS is a significant factor for groups of reduced mobility like elderly (Schipperijn et al., 2010) while two main factors were found to affect the choice of students in central Melbourne to visit public spaces those are; information on public spaces and the social environment and inclusion into the host community(Fincher & Shaw, 2007).

The second factor in particular has led RMIT University to a creation of City-Street strategy that aims at connecting the university students to the surrounding urban environment through a creation of a ring that host creative activities; music and art performances, studios and workshops for companies and students in order to render the student community into the city (Fincher & Shaw, 2007).

It can be, then, argued that choosing the students as user group will not only help in considering a less studied group, but in line with the principles of making responsive and attractive urban parks, which is the main objective behind studying the preferences, choices, perceptions and use of parks, students are a creative group that is expected to enrich the current perceptions in public spaces and in particular for this research, the urban parks.

First, before identifying and studying these preferences, choices, perceptions and uses and factors influencing them, a review on factors from the previous and current studies is presented. This review helps in framing a conceptual framework that guides the current study findings in order to fit into that area of research.

2.3. Preferences, choices, perception and use of urban green space: empirical studies

As discussed previously in order to make usable places that attract users and respond to their requirements, their preferences, choices, perceptions and use patterns need to be understood. As the determinants of these preferences and behaviours are complex and interrelated, many researchers quite recently started to use and develop socio-ecological models to understand these factors (Lachowycz & Jones, 2012; Schipperijn et al., 2010; Veitch, Bagley, Ball, & Salmon, 2006).

2.3.1. The use of socio-ecological model

The socio-ecological model developed by Lachowycz and Jones (2012) (fig. 2) suggests that the preference, choices, perception and use patterns are results of interacting individual and environmental factors. Therefore these underlying interrelated factors needs first to be understood if the use is aimed to be improved.

The model is developed to understand the relation between the health outcome of using green spaces, however, in this study the focus is on the preference, choice, perception and use of green spaces without looking into the consequences of that use on health or other ecological or social benefits. Therefore the study will focus on understanding the students preference, choice, perception and use of the parks inside the city and whether these are influenced more by their personal and background characteristics or the environmental characteristics (of the city or of the parks). However, Lachowycz and Jones (2012) acknowledged that their hypothesized model can be developed when evidence on other factors emerges and they suggest that the model can be adapted to more other specific study objectives.

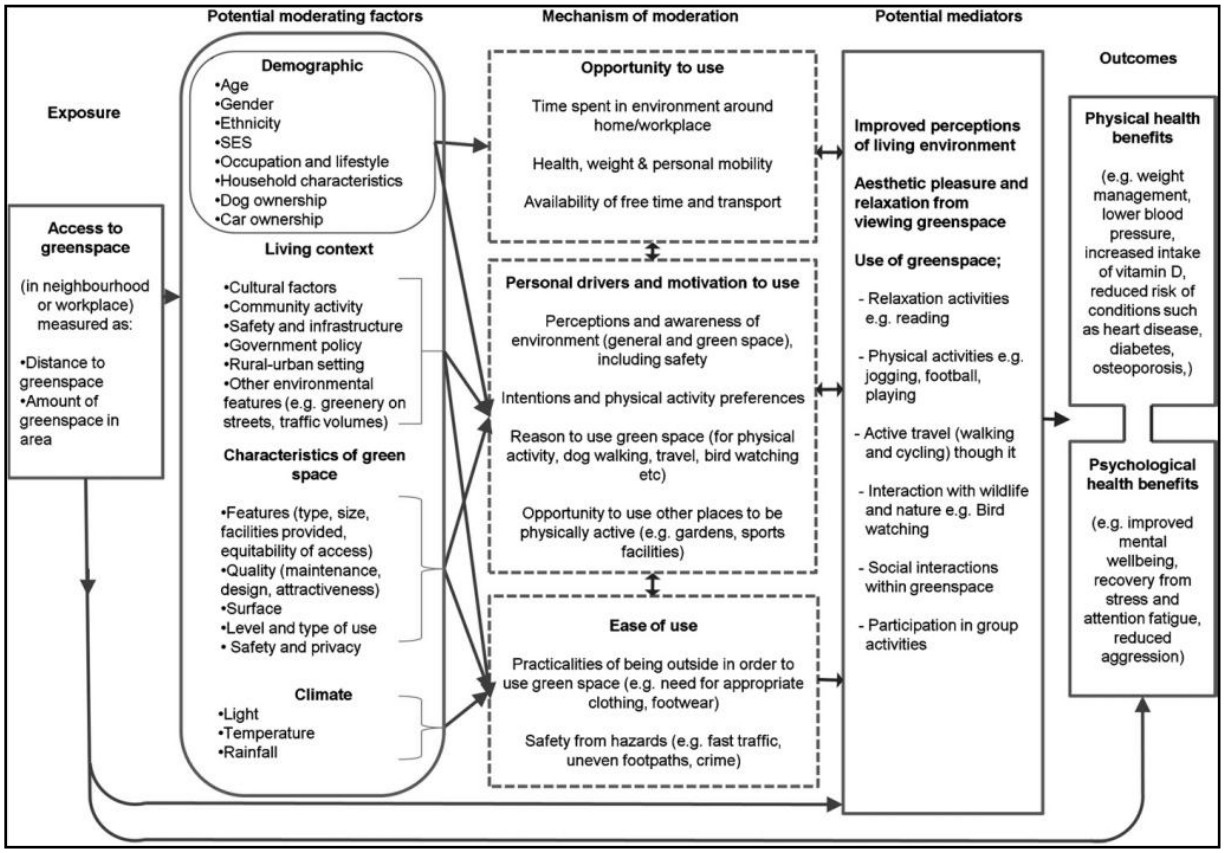


Figure 2: Socio-ecological model.
Source: Lachowycz and Jones (2012)

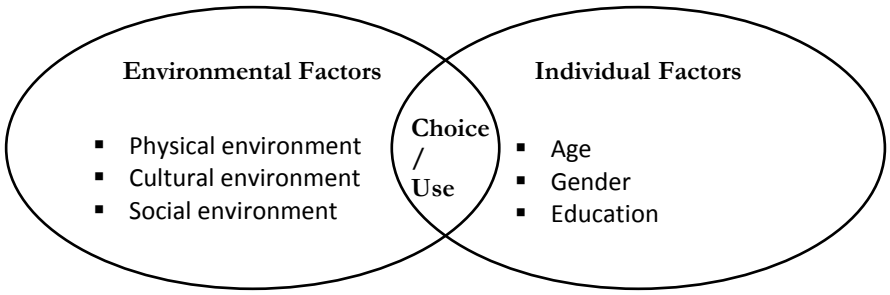


Figure 3: Socio-ecological framework.
Source:Schipperijn, Stigsdotter, Randrup, and Troelsen (2010)

A more simplified model is applied in Schipperijn et al. (2010), indicated in figure 3, attributes the use of UGS to the interaction between individual (i.e. age, education and gender) and environmental factors (i.e. distance, size and presence of facilities).

In this study, as a qualitative approach is applied, rich information on the influences is expected to be generated. The socio-ecological model then will be adapted from both aforementioned models to organize the studied influences on the preferences, choices, perceptions and use of the city parks by students. In that model the factors are organized into individual and environmental (including both social and physical) factors. Environmental factors are divided at two spatial scales; the urban context and the park scale in order to; allow for better allocation of the areas that need interventions, and to understand whether design and management decisions at park levels are needed or planning decisions at the city level.

The different factors that influence the preference, choice, perception and use are reviewed and presented then in the following subsections and organized within the adapted conceptual framework (fig. 4).

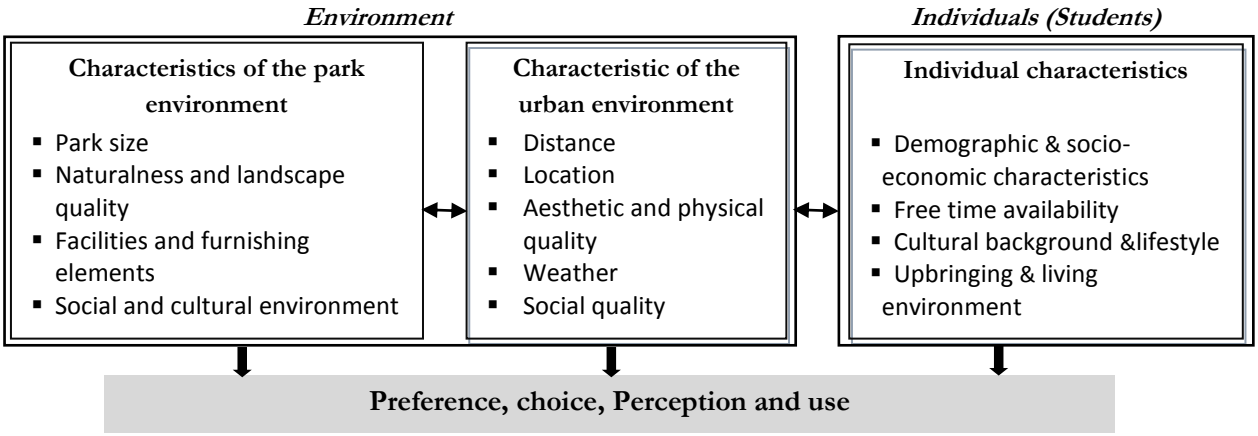


Figure 4: conceptual framework

The model organizes the influencing factors into interrelating individual and environmental factors. Environmental factors are categorized at two levels; the contextual environment and the park environment.

2.3.2. Environmental factors

Environmental factors can be classified into the physical and non-physical aspects (social, cultural and weather conditions) of the environment (Lachowycz & Jones, 2012; Laing et al., 2009; Schipperijn et al., 2010). If we looked into the social aspects of the environment, for instance, there is evidence from previous studies that both the social environment of the neighbourhood and the park can undermine or encourage the use of parks. High crime rate in the neighbourhood will discourage travelling to the park and if there is a drug dealing or anti-social behaviour inside the park many users will be deterred from using the park (Bullock, 2005; Lachowycz & Jones, 2012; Luymes & Tamminga, 1995). Therefore, instead of classifying the environmental factors into physical and non-physical factors, the adapted framework mainly looked at the spatial scale. All environmental factors were classified at two levels (fig. 4); the park level and the city level (urban context), which might help in deciding on which scale should an intervention be made.

- **Characteristics of the urban context**
  - Distance

Distance or proximity to green spaces has been receiving the attention for many researchers interested in the green space preference and use. Being a primary variable in traditional accessibility measures, distance has been considered as the principal factor in encouraging the use of UGSs; however attractiveness of the destination and the socioeconomic variables of the individuals should not be omitted (Giles-Corti et al., 2005; Handy & Niemeier, 1997).

Van Herzele and Wiedemann (2003) have considered proximity to be a precondition of park use. In terms of visiting frequency, some studies found a distance-decay trend with decreased use frequency by increase in distance from parks due to the fatigue and costs of travelling longer distance (Giles-Corti et al., 2005; Schipperijn et al., 2010; Ward Thompson, Aspinall, Bell, & Findlay, 2005).

On the other hand, it is argued that considering proximity primarily cannot capture the complex mechanism of people choice and use and then would undermine the potential of making responsive parks

(Lachowycz & Jones, 2012). For instance, distance is found to be sensitive to age as Schipperijn et al. (2010) found that Danish youth in their study did not use the nearest green space the most, rather they travel farther distances to reach their favourite destinations which assert the need for creating not only accessible parks but also attractive and responsive parks if different users are aimed to be attracted.

- Location

Location of parks in relation to infrastructure systems; like public transport, and the location in relation to other service or recreational outlets may exert both positive and negative influence on the use of parks. Availability of other outlets might act as motive for users to choose the park where located in an attractive and well-serviced area but on the other these outlets might work as competent for parks in attracting visitors in particular if the park is perceived to be less satisfactory (Lachowycz & Jones, 2012; Lo & Jim, 2010; Skärbäck, 2007).

- Aesthetic and physical quality of the environment

The aesthetic and the physical condition of the urban environment where users would travel through to reach their destination are also argued to either encourage or hinder people from visiting parks (Lachowycz & Jones, 2012; Skärbäck, 2007). Security from road traffic, safe crosswalks, convenient walking paths in addition to the aesthetic quality of the environment all can encourage the movement in the urban environment and thus positively influence the park visiting (Lachowycz & Jones, 2012; Lo & Jim, 2010; Van Herzele & Wiedemann, 2003).

- Weather conditions

Rainfall, light and temperature are argued to affect the easiness of being outside using the park and the perception of safety through the degree of lighting and the clarity of the atmosphere (Lachowycz & Jones, 2012; Laing et al., 2009).

- Social quality of the environment

According to Lo and Jim (2010), social qualities of the neighbourhood were more important than the physical aspects of parks in influencing park visiting. Both positive social aspects; like community cohesion, and negative aspects; like the presence of homeless, vandalism and gangs, affect the perception of public security in the neighbourhood and in turn may encourage or undermine the use of parks and public spaces in general (Lachowycz & Jones, 2012; Lo & Jim, 2010; Skärbäck, 2007).

- **Characteristics of the park environment**

Characteristics of the park itself is one of the main components that determine the motivation and the using pattern of the park through the opportunities or barriers it gives through both its physical and social environment (Giles-Corti et al., 2005; Lachowycz & Jones, 2012; Lo & Jim, 2010; Schipperijn et al., 2010).

- Park size

Size of parks has being considered as one of the most significant factors in determining the preference, choice, perception and use of green spaces in literature (G. Brown, 2008; Giles-Corti et al., 2005; Van Herzele & Wiedemann, 2003). Giles-Corti et al. (2005) found in their study that size, after distance, is more significant than attractiveness in encouraging the park use. The opportunity of larger green spaces in providing variety of nature and recreational experiences and in giving the users the feeling of losing themselves in nature are given as explanations (Giles-Corti et al., 2005; Van Herzele & Wiedemann, 2003). In fact, G. Brown (2008) found a relation between the size of parks and the variety of park values that participants assigned, as he found more various qualities were assigned to larger parks in his study.

However, in their suggested socio-ecological model, Lachowycz and Jones (2012) were uncertain about a definitive evidence on that. Schipperijn et al. (2010) also have argued for the need of more scientific evidence on the significance of park size on the choice and use frequency of parks.

- Naturalness and landscape quality

Appreciation of green elements in particular grass, trees and other natural elements in parks like water ponds, water streams and domestic animals receive significant attention of users as they enhance the perception of being in nature through both visual and acoustic effects (Bell et al., 2008; Bullock, 2005; Gobster & Westphal, 2004; Tyrväinen et al., 2007). The presence of these elements has a direct relation to four out of eight perceived qualities in green spaces identified by Stigsdotter and Grahn (2002).

Degree and type of management of greenery can enhance the feeling of being in a forest which affect for some users, in particular younger and educated, the preference for more unmanaged or ecologically-oriented management (Bell et al., 2008; Tyrväinen et al., 2003). However, for other users, in particular for less educated older users, dense green may affect the perception of safety by decreasing the visibility of some parts in the park motivate them to prefer more managed parks, (Bell et al., 2008; Lo & Jim, 2010; Luymes & Tamminga, 1995; Tyrväinen et al., 2003). However the relation between safety the green management condition per se is argued to have no clear pattern and that cultural difference is the factor that can explain this relation (Bell et al., 2008).

Landscape quality in terms of maintenance of greenery, presence of litter and cleanliness of water bodies is a principal factor affecting the preference, choice, perception and use of green space. In many studies, participants tend to link it to the perception of safety and if perceived negatively, it can deter them from using the green space (Bell et al., 2008; Gobster & Westphal, 2004; Lo & Jim, 2012; Tyrväinen et al., 2007).

- Facilities and furnishing elements

Facilities and furniture of the park provide for the user the practical opportunity to experience and uptake different activities (Lachowycz & Jones, 2012; Van Herzele & Wiedemann, 2003). Both natural landscape elements and park facilities define the attractiveness of the park which is assumed in some studies to be a third principal element affecting the park use, after distance and size (Giles-Corti et al., 2005; Van Herzele & Wiedemann, 2003). However, the previous claim was opposed by Kaczynski, Potwarka, and Saelens (2008) who found park facilities more influential on use levels than size and accessibility.

Availability of good quality paths for walking, sports fields, benches, toilets and cafes for longer stays and picnic equipment are all mentioned by park users to be important to find in the park (Van Herzele & Wiedemann, 2003). Furnishing elements in terms of illumination inside the park and the availability of signs on the other hand are found to affect the perception of safety and orientation inside the park and in turn the use of park (Lo & Jim, 2010; Luymes & Tamminga, 1995).

- Social and cultural environment

The social environment in the park is also a factor that may encourage or discourage the use of parks. Presence of alcoholic and drug users, youngsters and gangs in parks affect the perception of safety and in turn the use (Lo & Jim, 2010; Luymes & Tamminga, 1995; Wright Wendel et al., 2012). Overcrowding and the resulting noise on the other hand also are found to negatively affect the quietness of parks and in turn deter some users from using these parks (Bell et al., 2008; Lo & Jim, 2010; Tyrväinen et al., 2007).

2.3.3. Individual factors

Demographic, socioeconomic and upbringing background characteristics are believed to exert a fundamental influence on the preference, choice, perception, and use of UGSs supported by a evidences from many empirical studies (Garcia-Ramon, Ortiz, & Prats, 2004; Jim & Shan, 2012; Lachowycz & Jones, 2012; Lo & Jim, 2010; Oguz, 2000; Schipperijn et al., 2010; Swanwick, 2009; Wright Wendel et al., 2012).However it should be reminded that these factors do not influence the preference, choice, perception and the use independently according to the socio-ecological model (Lachowycz & Jones, 2012; Schipperijn et al., 2010).

- Age, gender, economic status and ethnicity

In many studies gender, age, ethnicity and economic status are found to affect the preference, choice, perception and use of public spaces including the parks (Bell et al., 2008; Garcia-Ramon et al., 2004; Giles-Corti et al., 2005; Lo & Jim, 2010).

Due to the unequal distribution of domestic tasks between men and women, the use of a public promenade *Via Julia* in Barcelona was dominated by men, usually retired and elderly, who find the promenade a satisfactory closer substitute of the Ramblas (Garcia-Ramon et al., 2004). In terms of perception of safety; elderly, women and children are believed to feel less safe in parks and to be, in turn, more prone to avoid using them (Bell et al., 2008; Jim & Shan, 2012; Lo & Jim, 2012). This group is also characterized a less mobile group and in turn is found to be more sensitive to distance to parks than younger, male, users (Schipperijn et al., 2010; Wright Wendel et al., 2012). Also Lo and Jim (2010) found that elderly are more sensitive to the inconvenient housing conditions and thus tend to use UGSs more frequently as extension for their small houses than their younger counterparts.

Economic status also is found to be correlated with the preference and use pattern of green spaces. G. Brown and Weber (2011) found that while higher income groups inclined to more trail-based use, middle income preferred discovery and learning activities and the lower income had longer overnight stays. Also lower income is considered to have a limited mobility and thus they tend to use closer green space as they are more sensitive to distance than other income groups (Jim & Shan, 2012; Wright Wendel et al., 2012).

Ethnicity is also found to differentiate the way people use urban green space. Caucasians are found to use green space more frequently mainly alone or with a member of their acquaintances in contrast to other ethnic groups who are found to be less frequent users and more inclined to use parks in big groups (Bell et al., 2008; Giles-Corti et al., 2005).

- Availability of free time

Occupation status mainly was found to affect the availability of free time to be spent in green spaces. Being unemployed or employee is found to affect the availability of time to recreate and to contact with nature which influences the use pattern of public spaces. In Barcelona, retirees and unemployed were found to be the major users during the whole week while the employed were only found to use the *Via Julia* promenade mostly on weekends(Garcia-Ramon et al., 2004). A similar finding by Sanesi and Chiarello (2006) in Bari (Italy) who found that employed tend to use parks mostly in weekends while students and housewives tend to use it during the whole week.

- Cultural background and lifestyle

Lifestyle, personal and cultural preferences in recreating and in spending leisure time are also believed to be factors that determine whether the individual would use green spaces or not (Burgess, Harrison, &

Limb, 1988; Lachowycz & Jones, 2012; Lo & Jim, 2010). Lo and Jim (2010), for instance, found that personal preference for spending leisure time in other recreational options like bars, shopping malls or fitness centres has influenced the non-use behaviour of the younger residents in one of their study areas.

Also, the preference of having a company is found to affect the frequency of visiting parks in some studies according to Kaźmierczak (2013). She found higher proportion of non-users of parks among those who do not have children to accompany to parks than who have children. Based on previous literature she discussed that this can be explained by the fear of being judged by other users when they are alone.

- Upbringing and living environment

Upbringing natural or rural environment rather than urban environment is argued to positively influence the attitude toward UGSs as it is assumed that growing up in a rural environment raises the attachment to green spaces and motivates the use of urban green in adulthood (Burgess et al., 1988; Jim & Shan, 2012; Swanwick, 2009).

Smaller scale of the living environment, housing and/or neighbourhood environment, might also affect the use of UGSs. Attachment to green might also be developed through living in a house with a backyard. Schipperijn et al. (2010) found that having a garden in the house was correlated to more frequent visits to UGSs, assuming that those residents might be more attached to perform their outdoor activities in green spaces . However, this finding is contradicted by another finding. Lo and Jim (2010) found that unsatisfactory housing condition in terms of size and unavailability of green space reflected more visits to nearby green spaces as an extension to their houses, which was confirmed by Lachowycz and Jones (2012) who suggested that exposure to green spaces in work or residential environment might lessen the benefit of visiting other UGSs.

2.3.4. Tertiary students as user group

By considering tertiary students as user group, some differences are expected due to the differences in individual characteristics from most of the researched groups. Non-local students, in particular, whom figures suggest them being the overwhelming majority of the students living in the city, might have different preferences, choices, perceptions and use due to their lack on information, their housing conditions or their temporal living condition (Fincher & Shaw, 2007; Fincher R. & Shaw, 2009; Tsutsumi & K. O'Connor, 2006).

Although younger age group are found to be less sensitive to housing condition than elderly as mentioned by Lo and Jim (2010), due to the clear disparity of the housing and studying environment of the study population, availability of campus green may act as a differentiating factor in the preference, choice, perception and use of green spaces in particular when around 25% of students enjoy spacious green space in both their living and studying environment over the majority of students (Wegstapel & Kalisvaart, 2010). As availability of green space in campus is found to affect the perceived quality of life and to be necessary to students (McFarland, Waliczek, & Zajicek, 2010), the absence of it along with the absence of green space in the mainstream of student housings (Wegstapel & Kalisvaart, 2010) ,in particular non-local, students might seek for extending their housing or studying environments that lack sufficient green into the urban parks, generating a similar pattern of that generated by elderly (Lo & Jim, 2010).

On the other hand, their younger age category, characterizing them as a mobile group, may mitigate the strong influence of distance on the choice of parks unlike elder groups, in line with the finding of the Danish study (Schipperijn et al., 2010).

Fincher and Shaw (2007) found that non-local students in central Melbourne tended to avoid public spaces where they feel they are excluded or unwelcomed. It might then in this study exists a similar pattern where non-local students in particular would avoid travelling to certain parks because of its social or physical character that generate the feeling of alienation. Also, some of the aforementioned factors might be found to be less relevant, for instance, the positive impact of social cohesion in the neighbourhood on the use of parks might be less relevant in particular for non-local students who are less likely to interact with local residents (Fincher & Shaw, 2007).

Other factors on the other hand might emerge to have more significant impact on the use of parks. Information in the park and in the city might emerge as significant influence in particular for non-local students (Fincher & Shaw, 2007). In addition, since students are found to use parks in groups (Fincher & Shaw, 2007; Sanesi & Chiarello, 2006), park facilities that foster group activities like picnic equipments and team sports facilities might be a principal requirement of students in parks.

Although this study is examining the emerging findings through the findings of current research, initial expected findings, based on the previous discussion, can be formulated as follows;

- **Expected findings**

1. The availability of campus green in living or studying environment might affect the perception and use of the park.
2. In contrast to the significance impact of distance on the choice of users with limited mobility, for students it can be expected that there will not be significant impact of that factor on their choice; the choice is expected to be a reflection of their preference.
3. Certain physical and/or social characteristics in parks may generate a feeling of alienation of students, in particular non-local, which might affect their preference, choice, perception and use of the park.
4. Being a group who tend to use parks in groups, facilities that support group activities; like barbeque and team sports, might be perceived as essential element in the park.

These expected findings are examined through the research and discussed in the conclusion section.

2.4. Capturing users' preferences and perception: review on methods

According to Lynch and Hack (1985),in order to investigate complex landscape issues related to users preferences, choices, perceptions and use patterns, first preliminary interviews of open-ended questions is preferred to be used to get preliminary impression and understanding of the complex issues and factors followed by more structured large scale surveys once these issues became clear. This is recognized by Burgess et al. (1988) who mentioned that most useful studies combine both quantitative and qualitative approaches.

2.4.1. Quantitative Versus qualitative approaches

However, most of the research on uses' preferences in green spaces follow quantitative approaches using users' surveys (Chen, Adimo, & Bao, 2009; Oguz, 2000; Schipperijn et al., 2010). Although they are recognized to provide statistical validity to the results of the issues under investigations, they fail in providing more meaningful understanding of these issues, in particular complex ones which is believed to be addressed by qualitative approaches (Swanwick, 2009). In addition, quantitative approaches emphasizes the researchers' concerns instead of populations' views and values, which is the subject of that study (Bryman, 2012; Burgess et al., 1988; Swanwick, 2009).

In Enschede, a previous study has been conducted on the appreciation of urban parks in the city (Last, 2004). The study followed a quantitative approach using surveys and has quantified the reasons behind peoples' visiting and non- visiting to the different parks. However, there is no investigation of how are these different reasons or factors are perceived (i.e. why safety is considered a factor of non-visiting to that specific park and how it is perceived).Therefore, to answer the research questions a qualitative approach is followed in order to obtain better understanding of the complexity and patterns of the factors that influence the preferences, choices, perceptions and use of the urban parks in Enschede by students.

2.4.2. The use of PGIS/PPGIS methods

The potential of utilizing GIS in either representing the local qualitative information and different perceptions like that followed in PGIS methods or the more collaborative PPGIS methods that aim at a wider use of GIS by the public themselves(Hawthorne et al., 2006), have influenced the studies on green space preferences to depart from the traditional quantitative and qualitative methods, as shown in the current research on green space preference.

Many studies have combined the use of GIS and qualitative methods in representing and involving community members and different user groups into shaping their preferences and priorities; in capturing the perception and reaction of residents to rail-to-trail projects (Hawthorne, Krygier, & Kwan, 2008), in examining visitors' park experiences, their use of parks and their perception of environmental impact (G. Brown & Weber, 2011), in examining the preference of residents in urban forests (Tyrväinen et al., 2003) and others (G. Brown, 2008; Gobster & Westphal, 2004; Hawthorne et al., 2006)

Therefore, the study will utilize the potential of using GIS in representing and geo-referencing the views of the students that would give deeper insight and understanding of the parks issues and preferences as perceived by the participants. However; although a web-based PPGIS approach is recommended by many scholars to be used in representing community views and in understanding the preferences , and in particular in involving younger groups such as students who are believed to have higher capability in dealing with web-based technologies (Hawthorne et al., 2006; Tyrväinen et al., 2007; Tyrväinen et al., 2003), the need for instant participation limited by the time frame of the research has undermined the opportunity of using such a method that needs a considerable time if a well-designed interface sought to be developed.

The main focus in this study, then, is on the participation; communication and visualization of the different perceptions of the place by the participants. Therefore, the collected qualitative information, in form of text and paper maps, is then represented in GIS by the researcher, following the methodological approach of Hawthorne et al. (2006).

3. RESEARCH METHODOLOGY

This chapter reports on the different phases of the research with main emphasis on the methodological approach that was employed to answer the research questions. The criteria for selecting the case study area, the detailed procedures in collecting both primary and secondary data and the methods of data analysis are explained.

3.1. Research Design

The research consisted of four main phases; the concept development phase, fieldwork phase, data analysis and finally discussion and reporting of the results. Introduction and literature review chapters addressed the first phase of the research. This chapter, however, focuses on the second and the third phases where the justification of selecting the study area is discussed, the study population and the sampling strategy are described, the method applied in collecting the data and the methods that employed in analyzing these qualitative data are finally described and explained. Figure 5 shows in more detail the structure of the research phases.

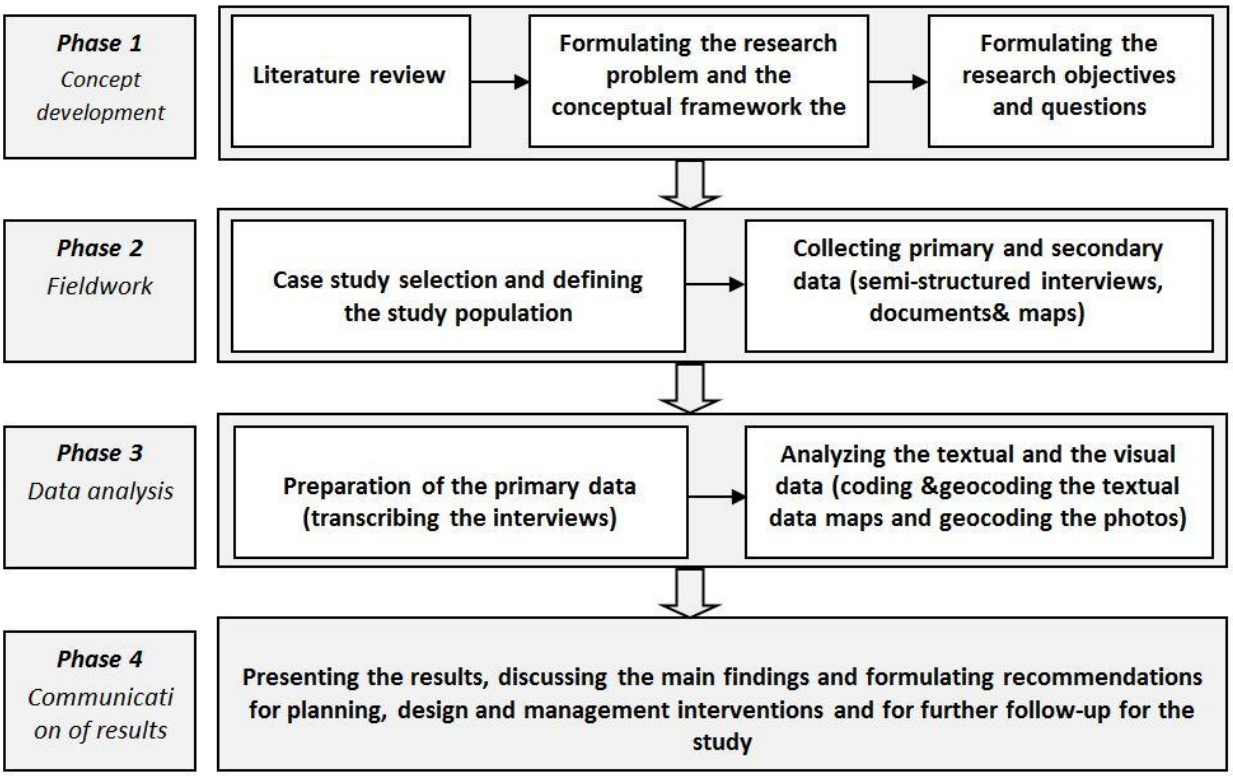


Figure 5: The structure of the research phases (Research design)

3.2. Criteria of case study selection

3.2.1. Criteria for selecting Enschede as study area

Enschede was selected to be the study area for the research based on a combination of theoretical, practical and societal aspects that made the city to be deemed an appropriate fieldwork area. First, Enschede is one out of nine Dutch cities with biggest students' population (Tsutsumi & K. O'Connor, 2006) . With the municipality realizing the potentials of involving the students in restructuring the city

parks (section 4.3.5) that were created in earlier era over the history , the city is considered suitable for the study from a societal perspective.

Furthermore, from the scientific perspective of the study, Enschede is the only city in the Netherlands that has a university campus (UT campus), which would allow for the research to investigate the impact of the availability of campus green spaces on the preferences, choices, perceptions and use patterns of the participants; who are students studying at either off-campus or on-campus colleges (expected finding No.1, section 2.3.4). In addition, by observing the spatial distribution of the city parks in relation to the spatial distribution of the educational institutions and students' residential areas, where they are highly concentrated (figures 6 & 7), it is clear that the students have a relatively good access, in terms of proximity, to most of the city parks. This fact is considered to benefit the research objective as; it is assumed that the students would have plausible impression on many parks in the city and that they would be selective in their choice of the park to visit, which may help in presenting a comparative overview of many parks from the students' perspectives.

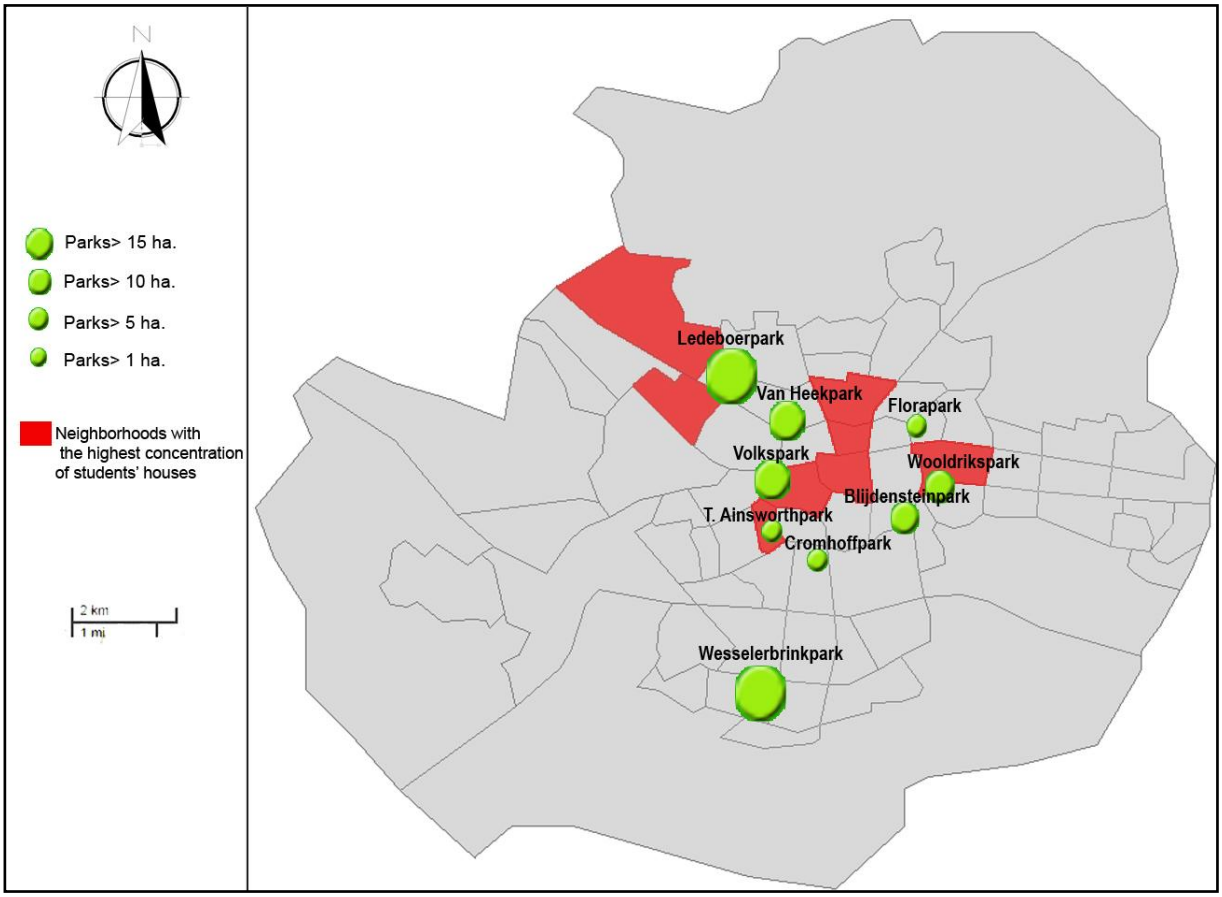


Figure 6: Neighbourhoods with highest concentration of students' houses and the city parks
Source: Enschede Promotie (2012)

For practical considerations; the feasibility of contacting the appropriate policy makers at the municipality and the relevant contact persons of the parks' management committees gave a priority for Enschede to be selected as the study area. Also, the ease of the access to the students, due to the relatively plausible local knowledge of the researcher to the relevant students' places in the study area, was a factor, in addition to the availability of the required secondary data, all made the city to be the first choice in that instance.

3.2.2. Criteria for selecting parks

According to the official website of the municipality of Enschede parks (Parkeninenschede, 2012), the city has ten parks and some cemeteries in addition to historical states with large landscapes (are introduced further in chapter four). This study focuses on the city parks mainly, however, only some parks were considered during the interviews with the students. This does not mean that interviewees were not given the opportunity to discuss about in any other park; in fact this selection was done for practical purposes in particular in using the maps and the orienting photos. Initially, these parks are the Volkspark, Van Heekpark, Ledeboerpark, Blijdensteinpark and Wooldrikspark.

The reason for that selection was threefold; first; they are located nearby the areas with highest student population (fig. 7), secondly; on the municipality website for students living in Enschede, (Enschede Promotie, 2012), these are the parks that are recognized to be introduced for the students, and lastly; during the pilot study, none of the students referred to any park out of these ones, except for the Rutbeek, which was mentioned by three students, but it was not included however as two of them mentioned that they do not visit it frequently because of the distance (appendix 1).

In fact, that last criterion made the Blijdensteinpark to be eliminated. The main reason for that omission was that; although some students did recognize the park visually, they did not refer to it as a park, instead, they referred to it as *a green lot*. Therefore, the final selected parks to be included in the interview mapping tools were the Volkspark, Ledeboerpark, Wooldrikspark and Van Heekpark.

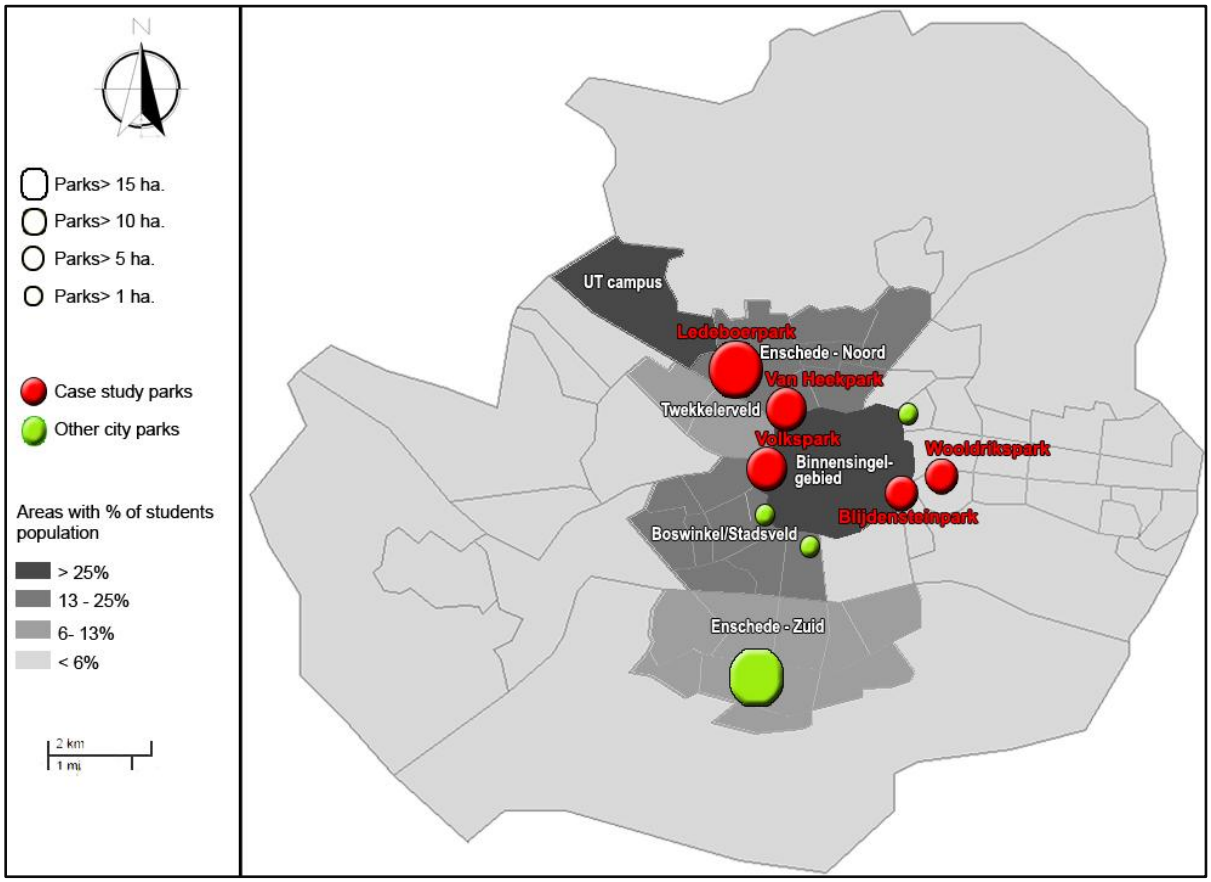


Figure 7: The five parks and the districts with highest population of students
Source :Wegstapel and Kalisvaart (2010)

In chapter four (section 4.2); an overview on the characteristics of the four parks is presented. It should be mentioned that since the study focuses mainly on the city parks, any of the other six parks would have been included in that analysis (section 4.2) if it was considered by the interviewees. Therefore, since no mentions of any of these parks by the interviewees, they were also eliminated from that analysis.

3.2.3. Study population and criteria of sampling

The research utilized a qualitative approach in collecting the main body of the data through conducting semi-structured interviews with students. The following subsections describe the main characteristics of the population of that study and the method followed to sample that population.

A. Study population

According to Wegstapel and Kalisvaart (2010), there are around 22000 students studying in Enschede at one of the following three institutions; University of Twente (UT), Saxion Hogeschool and ArtEZ. Around 9650 (44%) students live permanently or temporarily in the city, the minority of them (only 13.5%) lives with their families. Table 1 and figure 8 show the total population of students, their distribution over the educational institutions and their distribution by the city of residence.

Table 1: student population in Enschede by the education institution and the city of residence
Source :Wegstapel and Kalisvaart (2010)

Characteristics		**Student population**	
		Numbers	**Percentages**
Education Institution	Saxion	12600	57.5%
	UT	8600	39.2%
	ArtEZ	800	3.6%
Residence city	Lives in Enschede	9650	44%
	Lives outside Enschede	12300	56%
Total		21950	100%

For the students who live in Enschede, it can be noticed that most of them are studying at the UT, on the opposite, most of Saxion students come from outside the city. Figure 8, shows the percentages of students who live in Enschede by the education institution. Therefore, the representation of UT students was higher than Saxion students in the sample, as explained below in *sample size* subsection.

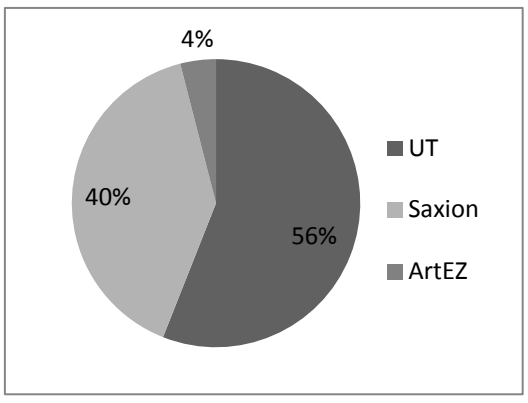


Figure 8: Students living in the city by education institution
Source :Wegstapel and Kalisvaart (2010)

Another category of the students who live in the city can be characterized by their living environment in terms of the housing characteristics. Out of the 9650 students living in the city, around 1300 live with their families (less than 13%). Most of them are enrolled at Saxion (73%) and only 23% of them are studying at the UT.

Out of that population, the sample was selected in a way that ensures that the views of different groups of students, according to different established criteria, were considered. The following subsection describes the followed strategy in sampling the population indicating the criteria of the categorization.

B. Sampling Strategy

Sampling of the context

The student population in this study is distributed over three educational institutions; Saxion, UT including ITC and ArtEZ. In selecting the schools (sampling of the context), purposive sampling was used. The criteria for selection were;

- The number of students enrolled at the school and;
- The availability of campus green space.

Institutions with high and representative numbers of students were selected. According to Wegstapel and Kalisvaart (2010), as shown in table 1, almost Saxion and Twente University have the whole population of students enrolled in their system(around 97% in total; 57.5 % Saxion and 39.2 % UT). Therefore, Saxion and Twente University formed the contextual units where the participants were selected.

The other criterion, the availability of campus green, was selected because it is assumed that availability of campus green space might affect the motive of students to travel to other green spaces, like parks. Therefore, Saxion and ITC were considered to represent the off-campus schools while the other schools of Twente University that are located inside the campus, including ArtEZ AKI, represent the campus schools.

Sampling of participants

In selection of the participants (sampling of participant), because of the unavailability of a sampling frame of the population "*students*", probability sampling was not possible to be applied in this study. Snowball sampling was utilized preceded by convenient sampling in some cases.

- Sampling criteria

To represent views of various groups of students, the following criteria were set to define these different groups;

1. Students who live independently (the majority) and who live with their family (both should be living in the city).
2. Students live and study both on campus and off campus.
3. For off-campus, to ensure the spatial variation in their accessibility/proximity to different parks, students living in different areas were targeted (mainly; Binnensingelgebied, Campus/UT and Boswinkel/Stadsveld, because of their high students population(Wegstapel & Kalisvaart, 2010)).
4. Frequent users and students who are less or non-users of the parks.
5. For UT; students in PhD, masters and bachelors, as for Saxion the majority are undergraduates.

The first two criteria were set assuming that the residential and learning environment could have an impact on the preference, choice, perception or use patterns of the parks by students; for instance; living in an apartment having no access to a backyard or a neighbourhood green space might be motivating for visiting parks on the other hand, studying and living on the campus with access to many buildings, spacious open green spaces and facilities might suffice the need for visiting green and open spaces.

The third and fourth criteria were selected for the potential of obtaining rich perceptions on many parks and different factors behind students' preferences and choices. As if the sample was spatially distributed around single or fewer parks, the possibility of understanding perceptions on parks would be highly limited to these few parks. Also, if all of the respondents were frequent users, the views and suggestions of the non-users would be omitted which will impede our understanding of why some students are discouraged to visit parks and what could be done to attract them.

The last criterion was selected in order to allow the study to examine whether there is a pattern of preferences, choices, preferences or use patterns among the participating students in relation to their study grade and, inherently, their age group.

- Sampling procedure

At the UT campus, students were approached in different areas, in front of the sports centre& the café, inside educational buildings and in the O&O plaza that is surrounded by different faculties, including ArtEZ (fig. 9). Where possible, the interviewed students were asked to refer other students of certain individual characteristics (in this study; residential location, their living situation; with family or independently and the study grade; all were considered the most relevant, with the latter implicitly represent the age group of the participants). Being concerned with parks, or a frequent user of them, was not used as a fourth criterion for all of the cases, in order to represent the concerns of the non-users as well.

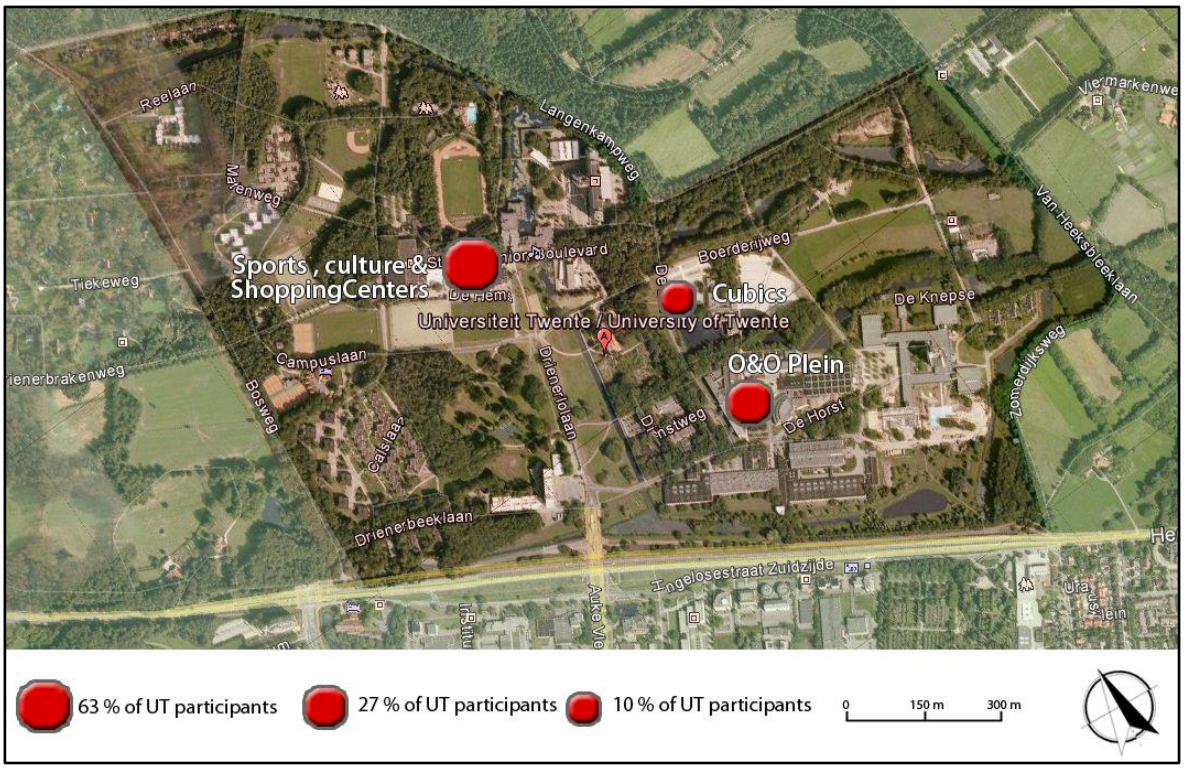


Figure 9: Areas where the participants were approached

At ITC, snowball sampling approach was followed by which the participants were selected based on the above criteria, with the fourth, again, being not dominant in selecting all cases. Both MSc and PhD students were interviewed inside the ITC building either inside the class rooms and offices or outside the rooms. In addition, due to the more controllable environment of the study area (in terms of the limited number of building, only one building, and the fewer number of students), a fifth criterion was included

that the length of residence should be at least for one year in order to ensure that the participant has a minimum level of perception on a handful of parks in the city.

For Saxion, although the number of Saxion students is the highest, according to Wegstapel and Kalisvaart (2010), most of the students do not live in the city (around 70%) which made the process of seeking students who live in the city more challenging . A first trial to interview students in the entrance and the reception of the building has resulted in all the approached students to be travelling daily outside Enschede. Therefore, other places; like student residences and the bikes' parking area, were visited seeking participants. The parking area of the bikes was selected assuming that students would use bikes mostly if they live in the city.

For student residences, a student housing building next to the Volkspark and Saxion *Macandra Building* was visited because of its trait of accommodating large number of students inside one building. However, it might also have an unfavourable effect by limiting the choices of students to the Volkspark; therefore, a sweeping perception over many parks in the city might be missed. So, in order to cope with that, the parking shed area of the bikes was visited to interview students who live in different areas in the city.

It should be mentioned that, although the number of UT students who are studying on the campus are much larger than those who attend the off-campus school, the sample was biased towards the off-campus students (ITC). The main reason for that bias was mainly attributed to the tendency of most of the interviewed campus students to refer to the availability of green spaces and study facilities on campus as a substitute for the utilities they would have obtained by travelling to the parks; even some students have described the campus green as *Park*. Other practical reasons can justify that bias such as; the practicality of using a snowball sampling approach to reach students that represent different selection criteria besides the potential of conducting the interviews in an inside quiet and convenient environment for the participant which facilitated the mapping process and allowed for more elaborated interviews.

Sample size

It is recognized that in qualitative studies it is hard to decide on the sample at first in particular if theoretical saturation is aimed to be reached (Bryman, 2012). In this study, a theoretical saturation was followed in deciding on the sample size. The criterion of the data saturation is achieved when a thematic exhaustion is reached in relation to the targeted categories of participants. Thus, when no more new themes or codes are generated and when the various defined groups of participants are represented, then the size of the sample would be deemed sufficient.

However, it should be mentioned that when choosing for participants of the various defined groups, the choice was biased towards the majority in each of these categories. That means that;

- In terms of the education institution, the sample was biased towards UT students as most of the students who live in Enschede (56%) are UT students.
- In terms with living condition, most of the targeted students are living independently as most of them do not live with their families (87%).
- In terms of the place of residence, most of the sample was biased towards the students living on the campus, neighborhoods city and Stadsweide (figures 6& 7).
- Since it was assumed that students who live and study off-campus do not enjoy that green campus space therefore they might be more concerned with the off-campus green spaces like parks, the sample of the UT students was biased towards the off-campus students, ITC, over the on-campus.

3.3. Methods of Data Collection

3.3.1. Primary data collection

A. Semi-structure interviews with policy makers

In order to answer the research questions regarding the planning and management policies of UGSs, key officials from the government and parks management were interviewed in order to get their insight on the current planning and management issues in the parks. Therefore, In order to understand the current visions and plans for the city parks and the current challenges in the physical and social environment of the parks, officials at both policy and implementation levels were targeted. Snowball approach to seek the informants was followed. Through a *senior communicatieadviseur* (Senior Communications Advisor) at the municipality of Enschede, relevant officials at the Urban Development department and the department of Strategy and Policy; Public Space Administration, were contacted.

In total, two semi structured interviews were conducted with policy advisors from the departments of Urban Development and Strategy and Policy at the municipality of Enschede. Also, comments from other policy makers and landscape designer were communicated through one of the interviewees from the Urban Development department at the municipality in addition to two members of the Volkspark park management committee. The interviews were recorded and some notes were taken during the interviews and the others after the interviews, by listening to the recordings, in a form of summary of the main points discussed.

The core of discussions in the interviews revolved around the current visions of the parks in Enschede viewed by the policy makers, the challenges that park managers face and the potentials that are expected to enhance the use of parks, from the managers' perspective. The topic of community involvement in the planning, design and management was widely discussed with reference to the challenges that face the citizen participation initiatives that are launched by the municipality, in particular in involving youth.

The interviews concluded with some questions raised by the park management and the policy makers that are believed to require more investigation and understanding. In addition, some documents of studies that are conducted at the city were obtained through as one of the outcomes of these interviews.

The results and the implications of these interviews are discussed in more detail in *chapter four* of the thesis.

B. Semi-structure interviews with students

This phase forms the core of the data collection method where most important data was collected. Among other well-known qualitative data collections methods; (i.e. focus group discussions, unstructured interviews, questionnaires with open-ended questions…etc.); semi-structured interviews were selected as the data collection method as it best suits the nature and objectives of the study.

In general, face to face interviews are preferred over the open-ended self-completed questionnaire as the possibility of the participant to omit some questions is far less than if self-completed questionnaires are used. In addition, in interviews, the interviewer can depart from one point to another in following up her/his interviewee, while probing is impossible in the self-completed form of the qualitative questionnaires (Bryman, 2012).Semi-structured interviews was selected over the unstructured interviews as according to Bryman (2012), when the research focus is fairly clear ,not a very general notion on a topic, then semi-structured interviews is likely to be used.

Interview guide

The use of interview guide in semi-structured interviews aims at listing the issues or questions of the topics to be covered in the interviews. However, the wording or the sequence of the questions are not necessarily being followed during the interview, in addition, other questions can be asked depending on the answers of the interviewee (Bryman, 2012).

In this study, the conceptual framework that was developed based on the literature review (presented in the *Introduction* chapter), was used to frame the main issues to be investigated in the study. The questions were formulated later based on these issues. Also, some questions were included in order to investigate some of the issues mentioned by the interviewed policy makers and parks managers. A pilot study was conducted and some of questions that led to misunderstanding were reformulated based on the responses of the interviewees.

In general, the issues and the questions included in the guide aimed at discussing the following issues;

- *The preference and choice of the park:* this issue was covered by two main questions; one on the favorite park and the other on the most visited park, which allowed observing the difference between the preference and the choice for further investigation of the reasons.
- *The perception and use of the park:* in terms of the use patterns, the preferred places, the least used spaces and the activities that are performed there
- *Expectations and needs*: this last section aimed at generating ideas on what could be done in the parks in order to attract more students and people in general. In addition to asking them about what they would like to have or practice in the park, students were asked to give their opinion on some of the issues perceived by policy makers to attract more people and in particular students, like introducing WIFI access in the park, creating study areas and venues for events.

The interview guide document is presented in appendix 2.

Tools and materials

- Audio-recording interviews

Recording qualitative interviews is believed to have many advantages; one of these is that it compensates for the memorizing limitations of the interviewer who may, unintentionally, place personal intuitions on interviewee's answers. Moreover, it allows for repeated, unbiased, examination of the interviews. However, in case of the interviewee refused the interview to be recorded, the interviewer should continue in interviewing the respondent by taking notes instead of the recording (Bryman, 2012).

Therefore, most of the interviews have been recorded after asking the participants for their permission. Out of 43 interviews, five interviews were not recorded, due to expressed unsatisfaction of recording the interviews by the five participants, and one was failed to be recorded because of an error in the device. However, this was compensated by taking brief notes during the interview, followed by writing more elaborated notes and quotes right after finishing the interview.

- Mapping exercise

Using maps

To register the places where the students prefer to spend most of their time at, the spaces that they like and the places that they dislike or the places where they have negative perception about inside the parks, maps of the different parks in Enschede were prepared to assist the participants to locate the spaces of their certain perceptions and use.

In the pilot study, the *Satellite* view in *Google maps* was used to create the maps, the *Map* view hides many details in the parks that are required to be viewed; like the spaces of dense green that would be used in the study. However, using that option has resulted in an observed difficulty of students in orienting themselves in the parks which had resulted in presenting other options for the students to test the best map view to be used in presenting the parks' maps.

The colored maps of the different parks, are available on the WebPages of these parks, were evaluated in comparison to the satellite photos. After evaluating both options, it was found that the *satellite* view of *Google Maps* view, although is not so clear, is more readable than the colored maps that are available on the parks websites. However, for Van Heekpark, the colored map was considered more readable than the satellite one (fig. 10).

Figure 10: The satellite view in Google Map (on the right) and the colored map (on the lift)
Source: Parkeninenschede (2012)

It was also concluded that the use of photos and pictures of different parts of the parks would help in better and faster orientation for the participants. Therefore, photo-orientation approach was utilized in order to facilitate the orientation process. In addition, the use of photos in landscape perception studies, and in qualitative interviews in general, is believed to help the interviewee in recalling situations, events and feelings that may have been forgotten (Bryman, 2012).

Using photos (Photo-orientation)

Therefore field visits to five parks, the criteria of their selection explained in section 3.2.2 in this chapter, was done and many parts in the different parks were photographed with ensuring that all parts of the parks are represented in the pictures, based on subjective evaluation. Then a paper poster of each of the parks was created and presented with the paper maps during the interviews (appendix 3 for an example of Volkspark map & poster).

However, during the interviews, some of the interviewees showed a desire to map their locations in relation to the parks of the city on a city-scale map. Therefore, a simplified map of the city using the *Map* view option in *Google Maps* was used to create that map. In addition four photos of the four familiar parks for students (Volkspark, Ledeboerpark, Van Heekpark and Wooldrikspark), were added to the map to facilitate the process of orientation. The four photos were selected based on their familiarity to students, identified through the pilot study (fig.11). The map is shown in appendix 4.

[1] *Ledeboerpark* [2] *Wooldrikspark* [3] *Heekpark* [4] *Volkspark*

Figure 11: Photos students pointed to when they recognize the park that they visit or prefer
Source of Volkspark photo: architectuurgidsenschede (2012); the others: the researcher

In general, the interviewees were approached and a brief description of the study was explained for them. Then if the interviewee agreed to participate, they were asked either to write or to mention some personal information (age, nationality, study grade and residential place if possible). Then, they were asked for a permission to record the interview. During the interview, they were asked, whenever possible and feasible for them, to locate the spaces or to point to the pictures that represent the spaces they have specific meaning, use or perception about.

In general, the process was more feasible and flexible when it was conducted in an indoor environment with seating settings where the participant is more comfortable and was less in hurry. This was reflected in the variations in the length of each interview. In total, 43 interviews were conducted, most of these interviews lasted between 3 to 20 minutes with an average of 7 minutes. In chapter 5 that discusses the results, the characteristics of the interviewed students are provided in table 3.

Although one of the criteria of sampling the students was that they should be living in the city, three of the approached students are not living in Enschede; however, their interest in the city parks has motivated the interviews to be conducted with them.

3.3.2. Secondary data collection

Secondary data that are required in that study was collected using different sources. Documents of previous studies on parks and green spaces in Enschede were provided by interviewee at the municipality of Enschede and at the Volkspark management committee.

Online sources, in particular governmental websites, were accessed to obtain data on the residential places of the students in Enschede; however it does not provide exact figures or the exact locations of these residences, instead only the neighbourhoods that are occupied by large number of students are giving (Enschede Promotie, 2012). A report ,done in 2010, on students' accommodation in Enschede gives more detailed figures on the distribution of students' residences, however at district level. The report also provides information of number of students enrolled at the tertiary education categorizing them based on the school, city of residence and type of residence (Wegstapel & Kalisvaart, 2010).

Data on the urban parks in Enschede, in form of information on parks' characteristics, historical information, the maps and the layouts of the parks were acquired using online sources. Governmental websites mainly were used as trusted source of information. The main source was the *Parkereninenschede* website (Parkeninenschede, 2012).

3.4. Data Preparation

3.4.1. Transcribing the interviews

The next step after recording the interviews is the transcription of these interviews. Transcribing is believed to have the advantage of preserving the interview words without being influenced by the researcher (Bryman, 2012).

Therefore, in preparing for the analysis phase, the interviews recordings were transcribed following the transcribing conventions mentioned in Bryman book *Social Research Methods* (Bryman, 2012). The field notes of the recorded interviews that were taken after the recorder was switched off, were also transcribed and headed as "*off the record"*. Unrecorded interviews were prepared for the analysis, as well.

3.5. Methods of Data Analysis

The textual data was analyzed by applying qualitative framework analysis. Predefined themes, based on the elements of the conceptual model, were extracted from the data with allowing new themes to emerge. The following points explain the process in more detail;

3.5.1. Coding:

The first step in analyzing the textual data is by coding the transcripts. The coding in framework analysis method is applied by defining some categories and variables that guide the extraction of the themes out of the material; however, there should be some flexibility that allows for new themes to be extracted (Bryman, 2012). In this study, the conceptual framework has led the categorization and extraction of the codes & themes out of the textual data. Other categories and themes were extracted and later discussed in relation to the developed conceptual framework.

The observed relations between some codes were also identified to facilitate the interpretation of the results with the help of the network tool in *ATLAS ti (*appendix 5).

3.5.2. Geo-coding

Some of these extracted themes however denoted to places as they contained a spatial component within them. The potentials of GIS in visualizing these realities were utilized. Therefore to enable the spatial concerns of the participants to be visualized, the sketched maps and the spatial components of the concerns were digitized and linked to the qualitative information using qualitative data analysis software *ATLAS ti.*

Some of the photos that were collected during the field visits and that are relevant to the participants concerns were geo-coded. These photos were utilized for the interpretation of the results in order to help in better representation of the respondents' perceptions and concerns.

To conclude, the results were interpreted within the literature context, the conceptual framework, and the spatial patterns were explained in relation to the existing characteristics of the parks, the built environment, including its both social and physical components and the individual characteristics of the students.

4. THE URBAN PARKS IN ENSCHEDE: MAIN CHARACTERISTICS AND CURRENT ISSUES IN THE PARK PLANNING, DESIGN AND MANAGEMENT

Enschede, the capital of Twente region, is a medium sized city with a total land area of 140, 95 km² located in the eastern part of the Netherlands near the German borders. In 2012, the city population reached 158.031approximately with the tertiary students forming a unique group of the city population. According to Enschede Promotie (2012), around 22000 students are enrolled in one of the tertiary education institutions in the city, 8000 out of them are living in Enschede.

With the role of green spaces in enhancing the quality of life of the urban populations, the municipality of Enschede realizes the significance of involving the city residents in the current urban development plans of public spaces. However, there is a recognized lack of participation of that population; tertiary students and youth in general. Realizing that the city parks were created in earlier era, the need for redevelopment of these spaces to respond to the evolved needs of the current users is significant. Students are a group that the municipality of Enschede seeks to involve in order to make from parks more than spaces for recreation.

To get bitter insight into the potential of involving the students into the development of the city parks, first a brief introduction on the city parks is presented. The chapter then discusses in its second section the main characteristics of the case study parks that would help in understanding and contextualizing the research findings on the students preferences, choices, perceptions and use patterns in the case study parks. The following section presents the results of the interviews held with policy makers in the form of a discussion on the current planning and management concerns on the city parks.

4.1. Enschede urban parks

In 2003, Enschede was nominated as the greenest city in the Netherlands with its unique set of parks and green spaces. There are around ten parks in the city in addition to memorial cemeteries and large landscapes of historical estates, most of them date back to the time of textile industry. Around seven out of the ten parks are of historical backgrounds which were donated later to the municipality. Two out of the seven (G.J. van Heekpark and Volkspark) were designed as relaxation green areas for the workers in the textile industry, while the others were created upon the donation of the textile barons' estates to the municipality. On the other hand, fewer parks were designed through the restructuring and expansion plans of the city districts which shows the great influence of the industrial history of the city on the formation of public space and in particular the urban parks. All of these parks are managed by the municipality, except for Volkspark and Van Heekpark. Each is managed by a committee of five members as condition of donating the park to the municipality (Parkeninenschede, 2012).

By looking into the spatial distribution of these parks (figures 6 &7, in section 3.2), it can be seen that most of them are distributed around the centre of the city, with Wesselerbrinkpark located in the south and almost on the surroundings of the city. The location of the central parks in relation to the locations of the tertiary studetns' lodgings and their educational institutions was one of the main factors of focusing on these parks in this study, in particular; Volkspark, Ledeboerpark, Van Heekpark and Wooldrikspark as

discussed in section 3.2.2. The following two sections discuss the main features of these parks and the main concerns on the city parks explained by the interviewed policy makers and park managers.

4.2. Characteristics of case study parks

The following subsections describe the general characteristics of the four selected parks. The first subsection introduces briefly the history of creation of these parks while the following one gives general overview of the main features; in terms of physical features, recreational and cultural opportunities, of each of these parks.

4.2.1. Park creation

The 15 ha park of Volkspark, as mentioned before, was created in 1872 to serve as a recreational space for the workers in the textile industry which was later donated to the municipality of Enschede with a condition to be managed by a committee of five persons. Similarly, Van Heekpark was created and officially opened in 1918 as a park for the relaxation of the textile industry labourers and to provide a space for sports and physical activity. The park was created with an area of 11 hectares then an extension of 3 hectares of van Lochemsbleekpark was added to the park. Like the Volkspark, the park was conditioned to be managed with a committee of five members in order to be donated to the municipality. Other than those parks, the other parks in the city were created upon the donation of the textile barons' estates to the municipality.

Ledeboerpark was created in 1918 and named after the textile baron Abraham Ledeboer whose family had built a villa in 1880 in the central part of the park that was demolished later in 1956 as a condition of donating the park to the municipality. Some elements from 1880 still in the park like *koesthuis* (coach house), the Giant sequoia, tree rhododendrons, the ponds and the gateway with the recognizable eagles and roses.

Wooldrikspark was an agricultural land where Ter Kuile, textile manufacturer, built a villa and coach house in 1883 around. Later Gerrit Jan van Heek bought the estate and the land and donated them to the municipality to create a public park. The villa later was demolished and Wooldrikspark was officially used as a park after 1950 (Parkeninenschede, 2012).

4.2.2. Overview of the parks' features

By looking into the main features of the place, the park in that case; the influences of the design and management of the park on the students' preferences, perceptions and use patterns would be understood which helps in formulating further development decisions and interventions to better suit the requirements. This subsection gives an overview of the main features of the four parks. The features are presented within the four elements of the park characteristics as introduced in the conceptual framework (section 1.5).

- **Park size**

Ledeboerpark is the largest among the four parks with 16 hectares followed by the Volkspark (15 ha.). Van Heekpark was originally 11 hectares before annexing the Van Lochemsbleekpark (3 hectare) in 1928, extending the area of the park to 14 hectares (Appendix 6). Wooldrikspark used to be bigger but due to selling some parts for road constructions and housing in the past the current area is only 6 hectares (Parkeninenschede, 2012).

- **Naturalness and landscape quality**

The four parks have in common water ponds, regardless of their variation in size. In terms of animal meadows, Ledeboerpark comes on the top with its opened, large and richer animal meadows and pastures, while for other three parks small animal fields or small petting zoos can be found.

In terms of the greenery and plantation; Ledeboerpark is the most famous with its natural landscape with variety of fields, meadows, streams that are fed by rainwater and seepage, ancient trees like the giant sequoia and pastures surrounded by forests. In van Heekpark there is a differentiation between the older part of van Heekpark and van Lochemsbleekpark , with the former is characterized by its open landscape and simple plantation and the latter is characterized more with its varied vegetation, the pond the petting zoo and its narrow and natural paths. Volkspark is more characterized with its opened landscape and mown grass with lots of, both, old tress and yearly planted vegetation. Wooldrikspark can be characterized by its English landscape with its sloping lawn and with a variety in tree species that are inhabited by rooks. The park also has a trail of these trees for nature education purposes (Parkeninenschede, 2012) .

- **Facilities and furnishing elements**

- Entrances and parking

Volkspark is the most accessible park in terms of the number of entrances circling the park. It has seven entrances with the main one at Parkweg. The main entrance Ledeboerpark and van Heekpark have five entrances for each. The main entrance of Ledeboerpark is located at Hengelosestraat while Van Heekpark has two main entrances at Hengelosestraat and Boddenkampsingel. Wooldrikspark has only three entrances with the main, fenced, entrance at Gronausestraat.

In terms of parking lots, Volkspark has in total five parking lots, two of them are for bikes. Next to the main entrance, Ledeboerpark has one entrance, while Van Heekpark has its parking lot with its entrance at Roessinghbleekweg. Wooldrikspark has three parking lots; two out of them are for bicycles (Parkeninenschede, 2012).

- Playgrounds

The four parks provide in common playgrounds for children while there is a little variation in the playgrounds and sports opportunities they provide for adults.

Ledeboerpark being envisioned for nature and education, it provides natural playgrounds along with playgrounds for kids. The park also is considered to be a starting point for walking route network of Twente, passing through it three walking routes. Van Heekpark is famous for its oval playground that is covered with grass to provide the users with opportunities to use it for sports and physical activity. Around that oval playground, the paved path provides the opportunity for skating and cycling. Also the park has official sports fields for tennis bowling club and netball field. Volkspark has tennis courts, basketball court and a playground that can be used for football. Cycling is not allowed inside the park but there is a jogging route instead. Wooldrikspark provides only a playground covered with grass that can be used for sports and physical activities and cycling is not allowed inside the park (Parkeninenschede, 2012).

- Café and toilets

Both van Heekpark and Volkspark have café or restaurant and toilets. While Ledeboerpark and Wooldrikspark do not provide these amenities (Parkeninenschede, 2012).

- Furnishing elements

Benches

The four parks provide their visitors with benches for seating's distributed over the parks' areas and in particular around their water ponds. However, in Ledeboerpark, near the natural playgrounds, the park is also equipped with picnic benches, while around the central part where the coach house, the pond and the giant sequoia tree, are some seats. In Wooldrikspark also there is a distinctive flower terrace with benches and flowers and with a stunning view to the pond.

Art works

All of the four parks have art works that are either memorial monuments or abstract art pieces of some artists (Parkeninenschede, 2012).

- **Social and cultural environment**

The department of nature education at the municipality organizes various nature education events in Ledeboerpark for the visitors, with the focus on children. These events are mostly held in the "Lammerinkswönner", a visitor centre for nature and education, along with other events related to the history of the region and nature education. Van Heekpark had two events during 2012 w related to nature. However, in Wooldrikspark there is no events are being held since 2005 when a single nature education event for children was held. Volkspark on the other hand has some established yearly events like the Memorial Day, arts event and the fair (in autumn and Easter) along with other events for nature education and cultural and musical purposes (Parkeninenschede, 2012). Table 2 briefly summarizes the main characteristics of the four parks.

Table 2: Main characteristics of the four parks

		Ledeboerpark	Van Heekpark	Volkspark	Wooldrikspark
Park size		16 Ha.	14 Ha.	15 Ha.	6 Ha.
Naturalness and landscape quality	▪ Water pond	▪ Yes + water streams	▪ Yes	▪ Yes	▪ Yes
	▪ Fauna	▪ Large Animal meadows + pastures + Ducks	▪ Petting zoo	▪ Petting zoo + Aviary+ Swans + Squirrels	▪ Petting zoo
	▪ Plantation	▪ Forest + meadows + pastures + old trees	▪ Forest + opened landscape	▪ Opened landscape + old trees	▪ English landscape + various tree species
Facilities and furnishing elements	▪ Entrances and parking	▪ 5 entrances + 1 parking lot	▪ 5 entrances + 1 parking lot	▪ 7 entrances + 5 parking lots (2 for bikes)	▪ 3 entrances + 3 parking lots (2 for bikes)
	▪ Playground for adults	▪ Natural playground + walking routes	▪ Grassy playground +netball field+tennis field+skating and cycling routes	▪ Grassy playground + basketball field + tennis court+ jogging route	▪ Grassy playground
	▪ Cafes and toilets	▪ No	▪ Yes	▪ Yes	▪ No
	▪ Benches and art works	▪ Yes	▪ Yes	▪ Yes	▪ Yes
Social and cultural environment		Events for nature education	Currently no	Memorial + fair + arts events	Currently no

After presenting an overview of the general characteristics of the case study parks, the following section introduces the current planning, design and management concerns from a policy and management perspective highlighting the main questions raised by the interviewees to be further explored.

4.3. Current planning, design and management issues

4.3.1. Overview of current issues from park managers perspective

To get an overview of current issues facing the parks in Enschede, an interview was held with policy makers at the department of Urban Development and the department of Strategy and Policy at the municipality of Enschede. And since two of the case study parks, Volkspark and Van Heekpark are managed by private committees, to get a closer overview from the committees' perspectives, the other interview was held with two members of a management committee of Volkspark. Volkspark was selected because of its higher popularity in the city according to Last (2004).

4.3.2. The vision of the park

According to the interviewees at *Volkspark,* the park is intended to be a park for "all people". Attracting users from all parts of the city and from out of the city is an objective that can be realised through creating more events and through enhancing the accessibility of the park according to the interviewees.

These events are also believed to connect the park with the city. As according to interviewees, due to its location near the centre of the city, there is a potential for the park to be integrated into the inner city, however, more events are necessary in achieving this goal.

Also assigning themes and creating visions for each park was confirmed by the interviewee at the municipality. According to interviewees; Volkspark is intended for *arts and events*, Abraham Ledeboerpark is for *nature and education* while the theme of Van Heekpark is the *sport*.

4.3.3. Use and users

In general, one of the main objectives to be realized in the parks is to attract more users, according to the interviewees at the municipality.

When the types of users, the main uses and activities were discussed with Volkspark management members, according to the interviewees; there are some facilities and events that attract users and allow for some kinds of uses (activities) in the park but on the other hand the safety is one of the main perceived issues that could discourage people from using the parks. The following subsections present in more detail the main points of the discussion;

- **Facilities and furnishing elements**

According to the interviewees, the main categories of use are relaxation and walking with dogs. However, other existing facilities provide also other kinds of uses as discussed below;

- Existing facilities

In Volkspark, there were few sport facilities which were moved from the park due to financial matters and now there is a basketball field and tennis court; which serve more the youth users. The park management wants to provide sports facilities for the elderly as they are part of the park users. In addition, for younger users, children, there is a small play ground attached to a small animal field. The park also is planning to attract students, especially Saxion students, by providing WIFI in the park which may, besides, attract other users to work in the park or just to stay. There is also a restaurant and toilets in the park.

- Desired facilities

A café to serve the park visitors, as an addition to restaurant, is believed to benefit the park, however, it should be negotiated with the restaurant management and it needs such a kind of business to uptake the project. Other development suggested by the interviewee is to create a lane that allows biking through the park instead of detouring around the park, but this proposition needs agreement from the management committee and requires a guarantee that such a lane would be used by cyclists and will be accepted by the park users.

- **Social and cultural environment**

- Events

Social and cultural events are much encouraged by the interviewees at Volkspark as they are perceived to attract users from the city itself and from out of the city. In Volkspark, there are currently three events; a memorial day, the arts event and the Easter and autumn fair. The park wants to attract more events,

however, some of the neighbouring residents do not encourage some kinds of events and there is a contract signed between the park and them limiting the park in that respect.

- Safety

Safety is an important issue mentioned by interviewed managers of Volkspark. Groups of youngsters are perceived as a threat in park. Some robberies and vandalisms were recorded, which believed to negatively impact the use of the parks.

To take an action against these behaviours Volkspark started to use CCTV cameras around some sculptures in addition to using lights. In addition, an urban police patrol visits the park almost every day for surveillance activities.

4.3.4. Community participation

According to the interviewees of Volkspark, Participation of civilians is an essential practice in the management of the park. Users' views are considered through providing Email address on the park website to receive users' suggestions and comments.

At the city level, one of the interviewees at the municipality referred to *Jij Maak de Buurt* or (You make the neighbourhood*)* project that includes two structured plans to involve the community into the management of their district/ neighbourhood public space(Gemeente Enschede-a, 2012). One of these plans is *De Wijkbeheerplan* (the District's Maintenance Plan of the Environment). The plan is applied in all districts in the city. In that plan, input from residents and entrepreneurs of the district on public spaces is considered in the management of the public space. Another plan to stimulate participation of civilians is *Wijkbudgetten* (Money for Civilians) by which each of the districts' residents receive considerable fund (reached 160,000 Euros for one of the districts) to spend on managing their public space, including the park if they reached a consensus, of no less than 70% of residents, on a specific idea or development (Gemeente Enschede-a, 2012).

4.3.5. Students as user group

The interviewees at the municipality realize that the community is already participating in a number of initiatives, however youth is almost absent in all of these initiatives. Tertiary students therefore are seen as a potential representative of the youth in the city. Not only because of the fact that they fall into the youth age group but also because of the fact that the city is working towards achieving the regional visions of Twente in creating an international knowledge and technology zone (Management Committee Regio Twente/ Netwerkstad, 2008); whereby students and researchers are a group that are targeted in the participation process on the development initiatives that aim at enhancing the quality of the living environment and the quality of life.

Students, although they are described as "*hard to reach*" group, their participation is believed to be a principal agent in making from parks places that function for more than recreation. One of the objectives for the public space, besides sustainability and public participation, is work and employment; parks can be avenues for, for instance, employment events. Therefore understanding the way tertiary students perceive and use parks would be a first step needed before making any practical step into realizing these visions.

4.3.6. Questions by the interviewees

Volkspark managers expressed their interest in understanding the impression and needs of the frequent users and less frequent or non-users of their park.

More specifically, they are interested in knowing the answers and understanding more about the following questions and issues;

- *Who are the users of the park and from which parts of the city do they come to the park?*
- *Why do people visit the park and what do they miss in it?*
- *What are the advantages and disadvantages of cycling through the park for both the park users and cyclists?*
- *How are people concerned Safety issues in the park?*

At policy level, like mentioned before, attracting more visitors to parks is one of the main objectives to be achieved in the parks. However, students as a particular group of interest to the municipality, that objective can be investigated through the perspective of students. In particular, the following questions were framed by the interviewees;

- *What can be done to attract more students?*
- *Why do students visit and not visit the park?*
- *What kind of students visits more the parks?*

A final and important question is how the proposed themes of parks (i.e. education, nature, art, sport…etc.) are realized by students. It is significant to understand whether the students and the users in general, perceive and use the park under that assigned theme or there are other more fundamental perceptions and uses realized. This is principal in understanding whether certain interventions are required in order to meet the needs of the users if these themes are intended to be realized.

4.4. Conclusion

By reviewing the main characteristics of the four case study parks it can be concluded that there are no significant differences of the services that the four parks provide. However, the clear natural orientation of Ledeboerpark is expected to enhance the visitor's perception f the wilderness, serenity and naturalness of the park, while the more diverse orientation of Volkspark in its services, facilities and events might enhance the perception of the park as a festive place (Skärbäck, 2007). Van Heekpark on the other hand, in accordance with its vision, has a more apparent orientation towards sports with its sports fields, large oval playground and the skating and cycling paths. A conclusion can be made on Wooldrikspark that it has no clear orientation; however, the various trees species that are characterizing its English landscape and the reflection of that interest in previous events may give the park a more nature and ecological orientation.

By reviewing the current issues of the city parks with policy makers at the municipal level and in one of the parks in Enschede, it can be concluded that attracting more users, and students as an important target group, is a main concern. Involving the community in the park management and development plans is also a policy that is aimed to be realized through many initiatives from the municipality and park management committees. Understanding what lack the parks and how the users can be more satisfied are issues that the policy makers are seeking to understand.

In terms of the factors that affect the use of the parks; safety, the availability of facilities and the cultural events are main factors. Financial and the multi-party viewpoints and interests, on the other hand, are the binding factors that limit the potential of parks to realize the needs of users. However such information on preferences, choices, perceptions and use of parks is needed as it would be used as input to the management and the development of the parks.

5. FACTORS BEHIND TERTIARY STUDENTS' PREFERENCES, CHOICES, PERCEPTIONS AND USE OF URBAN PARKS IN ENSCHEDE

5.1. Demographic characteristics of the sample

In total, 43 participants were interviewed at the UT, Saxion and ITC; whose demographic characteristics are presented in table 3. The table shows that male students were more represented in the sample than females by 12%. Most of them (84%) are younger than 30 year old. Although Saxion students form the majority of students in the city with 57.5% (table 1), UT students were more represented in the sample (with 70% for both UT & ITC) since most of the students who live in the city are enrolled at the UT (56%, fig.8). In terms of study grade, bachelor students are most represented in that sample followed by masters and PhD students (49%, 35% and 16% respectively).

Table 3: Socio-economic characteristics of participants

Participant Characteristic		No. of participants	%
Gender	Female	19	44%
	Male	24	56%
Age	35-40	3	7%
	30-35	4	9%
	25-30	16	37%
	20-25	20	47%
School	On-campus UT (UT)	19	44%
	Off-campus UT (ITC)	11	26%
	Saxion	13	30%
Study grade	PhD	7	16%
	MSc &premasters	15	35%
	Bachelor	21	49%
Residence	UT campus	7	16%
	Binnensingelgebied	23	53%
	Twekkelerveld	5	12%
	Others	5	12%
	Outside Enschede	3	7%
Living situation	Live with family	5	12%
	Live independently	38	88%
Length of residence	Permanent resident	5	12%
	≥ 3 years	10	23%
	1- <3 years	18	42%
	6 months- <1 year	2	5%
	< 6 months	5	12%
Nationality	Netherlands	16	37%
	Germany	5	12%
	China	5	12%
	Others	17	39%

The majority of interviewees have been living in the city for more than a year (77%) and around a third had been living for more than 3 years. Around half of the respondents (53%) are living in the Binnensingelgebied district in particular in neighborhoods *City, Stadsweide and Lasonder* while around 16% live on the campus. Although, according to Wegstapel and Kalisvaart (2010), around 50% of students are

almost distributed equally between Binnensingelgebied district and UT campus (25% in each), this over representation of Binnensingelgebied district in this sample can be justified with the fact that they are more proximate to many park options than those who live on the campus and in Enschede-Zuid or in Boswinkel, for instance (fig.7). According Gemeente Enschede-b (2012), around 13% of students enrolled in the higher education institutions in the city are international, however, 63% of the sample are international students. This can be justified with the fact that around 35% of all students studying in Enschede are Dutch who live with their families outside the city. So, if the population of the Dutch students forms around 87% of city students, then 41% of them are not living in the city, according to Wegstapel and Kalisvaart (2010). However, still the ease of access to international students was a factor explaining their overrepresentation.

5.2. Factors that affect students' preference for, and choice of, urban parks in Enschede

One of the main objectives of this study is to understand why some parks are preferred and chosen as frequent destinations over others. Both individual and environmental influences were identified in order to determine whether environmental or social interventions need to be made and to allow policy makers, planners, landscape and urban designers to develop suitable planning, management and design decisions.

Students were asked during the interviews to talk about their favourite and mostly visited parks and to explain the reasons of their preferences and choices. However, as mentioned in section 3.2.3, the selection criteria of interviewees aimed at including students who do not visit parks, non-users. This inclusion aimed at understanding the reasons of some students not visiting parks and whether this behaviour is mostly influenced by environmental or individual factors.

The next two subsections present the results of the interviews with the participants who stated and identified themselves as non-users of parks in the first section and the participants who visit parks, usually, in the second section, respectively.

5.2.1. Factors influencing parks' non-use behavior

Most of the students reported not-using parks are enrolled at the on-campus UT faculties and in terms of nationality; most of them are Dutch (local and non-local). By analyzing the data of students' responds on why they do not choose parks as places to visit for their recreation, sport or even for doing cognitive activities, some issues could be identified. Lack of free time and factors related to students' cultures and lifestyles in recreating appeared to be most influencing factors. Other factors could be also related to the high degree of exposure to green spaces in the upbringing living and studying environment. It can be noticed then that most of these influences are related to individual rather than environmental drivers. Table 4, briefly, presents the main identified factors organized within the conceptual model of that study.

Table 4: Factors influencing parks' non-use behavior

Main dimensions of the factors	Factors/influences	Brief description
Individual factors	Availability of free time	Busy with study, commuting home city and life responsibilities
	Cultural background and lifestyle	Recreating in other outlets, not in their culture, not the choice of friends to recreate , and a preference to be, at home
	Upbringing and living environment	Growing up in rural/urban environment and exposure to much green in the residential and study environment
Characteristics of park environment	Park regulations	Strict regulations for drinking, smoking and eating in parks

- **Individual factors**
  - Availability of free time

Since most of the students in this sample use parks in their free time, lack of that free time appeared to affect some of them not to use parks. Being a non-local in particular and having to travel back to home city in weekends, when they mostly have their free time, or having other living responsibilities beside study were mentioned as main reasons for not having enough time for visiting parks. Two of the students who live in the city for studying mentioned that they are busy with their studies during the week and they travel back home in the weekend so they do not have time to visit parks.

> Well, the thing is that I'm a German not Dutch. So, I guess all the Dutch people meet up there and since I didn't grow up here in the weekend I drive home and during the week I only study here, so I really don't have time to take a walk or visit that park (U11, Germany)[2].

So, it is not only students who are not living in the city and travel daily (around 56% of all students) who do not have sufficient time to visit parks, according to a student lives outside Enschede, but also non-local students who are living in the city but they prefer to leave to their cities in weekends.

In a previous studies however, occupation was found to affect the availability of free time to visit parks. Women, unemployed and students were found to have time for making visits to parks many times during the week in contrary to employed who mainly visit parks in weekends (Garcia-Ramon et al., 2004; Sanesi & Chiarello, 2006). These findings contradict the finding of this study since students in this study seem to have free time only in weekends. This contradiction might be explained by the fact that some students are non-local and living independently which add other living responsibilities to their schedules during the week, besides study, unlike students participated in the aforementioned studies who are probably local students living with their families. As one of the students commented;

> I don't say that they [the city parks] have reason or lack something no to visit them. So it isn't bad to go to the park, actually it's very nice you feel relieved from stress and you see trees maybe you meet some bugs it's very beautiful. But only I'm quite busy, some of the days when I'm out of the class or office I have other responsibilities, so that the park doesn't come to my mind… if I'm not in my studies I'll be doing other things trying to find a way for doing other things, so I don't have that time again of going there and maybe spend time. (I9, Rwanda).

  - Cultural background and lifestyle

Cultural and personal lifestyles and preferences in recreating and spending free time were significant influences among the non-users in this sample. Preferring to spend free time outside the city, in other recreation outlets or even at home was mentioned by some students as more preferred than visiting parks in the city. Leaving the city in free time does not mean, however, that parks per se are not preferred to be visited, as three of the participants mentioned that they do visit parks outside the city when they travel. One of the students commented on his preference for outside parks as follows;

> Well, it's not because I don't go to parks in Enschede because I don't like the nature in the parks but it's just because I want to leave Enschede (U12, Netherlands).

Other recreation options in the city, like cafes, bars or the city center, and even at home, seem to attract some students in their free time. Some students mentioned that they just like to go to the center with their friends as their first option for recreation, or it is because their friends do not go to parks, while one of the students mentioned that he prefers to spend time at home.

> Because I feel like if I'd like to go with my friends somewhere I go to the city center and it's not in my mind to go to park you know (S1, Czech).No, my friends don't go there [to parks] so I go with them and if we're going to the center

[2] U; stands for participants of the on-campus UT, I; stands for off-campus UT (ITC) participants and S; stands for Saxion participants

> of Enschede in the summer, then I'm going with them (U9, Netherlands). I don't really visit that [parks]…Yeah; I'm not really an outside person (U1, Netherlands).

It should be mentioned that this tendency for younger groups in spending free time in other recreation options than green spaces is confirmed in other studies. Younger age groups were found to be more interested in spending their leisure time in other outlets ,such as; fitness and shopping centers, bars and even at home with the increased access to computers and TVs, than recreating in parks(Jorgensen & Anthopoulou, 2007; Lo & Jim, 2010; Veitch et al., 2006). Also, this observed effect of friends' choice on where to recreate can be explained through current studies that find students more inclined to recreate in groups (Fincher & Shaw, 2007; Sanesi & Chiarello, 2006).

The cultural background appeared as an influencing factor of parks' non-use behavior by two of the participants. They stated that visiting parks is not a usual way in recreating in their culture or city.

> I don't think it's so usual here in Enschede... I don't know. But when I went to Luxemburg, there were parks also, but everyone goes there like at lunch, people sat there with their laptops… I didn't grow up with that kind of thing, going to the park, so I think that's maybe something that also is a factor … it's not that I hate it [park], because when I'm there it's all right, even when it's nice weather it's good, but I'm not used to it (U10, Netherlands).

This finding is confirmed in other studies that believe that cultural and historical attitudes in the use of outside spaces for leisure or recreation influence the perception and use of green spaces (Burgess et al., 1988; Lachowycz & Jones, 2012; Lo & Jim, 2010).

- Upbringing and living environment

The high degree of exposure to green, whether in the upbringing or the current residential environment, was found to create a feeling of satisfaction of green environments for some students. One of students attributed his less interest in visiting parks to the fact that he was brought up in a very green environment which made him more interested in experiencing new environments, in particular, the urban life. This inclination to a different environment can be supported by another student who stated an opposite feeling of being more interested in nature due to his very urban living environment back home.

> And because for me, I grew up in forests; in the bushes; and my family have a very big farm so we have bushes, trees, so I find that I have seen all the animals; I have seen all the trees so I'm not really that eager to say that I have to visit the park to see the trees (I9, Rwanda).

This finding however contradicts findings in previous studies which found that growing up in rural environments motivates the use of green spaces in adulthood through enhancing the attachment to green spaces during childhood (Burgess et al., 1988; Jim & Shan, 2012; Swanwick, 2009). This contradiction however might here be explained with the living situation of being temporary residents which might create an attitude similar to the attitudes of category of tourists who prefer traveling and experiencing new environments (Holdem, 2008). As this student explained;

> So I'm used to this nature and when I go back I'll go to see the animals back in my father's farm… Yes, I'm interested in the urban and I'm trying to look for new things that I'm not really used to (I9, Rwanda).

Current residential and studying environment appeared to influence the attitude of one of the students towards visiting parks. His direct contact with spacious green spaces in the campus, made him less motivated to visit parks in the city.

> Last year I was living inside the campus so by walking around I get to some parks [he means inside the campus]. Just I lived there [on campus] so I knew that there are some trees and green around. Actually I don't know that if these green parts are called as parks… because I live here [on campus] and when I go out it's just green (U16, China).

This confirms the finding of other studies that suggested experiencing natural environments in work or residence may reduce the benefit of visiting parks and green spaces and that individuals become less motivated for accessing green spaces (Lachowycz & Jones, 2012; Lo & Jim, 2010), however, this was contradicted in another study that found households owning gardens in their houses were more attached to green spaces and they were more frequent visitors to parks (Schipperijn et al., 2010).

- **Characteristics of park environment**
  - Park regulations

Only one of the students referred to the strict regulations inside parks on the use of alcohol, smoking and eating as a deterrent factor for him and his friends from using parks. In fact, this contradicts the prevailing attitude of park users, in many studies, in considering drinking and having drugs in parks to be negatively associated with the park safety (Lo & Jim, 2010; Luymes & Tamminga, 1995; Wright Wendel et al., 2012). However, the student explained that since him and his friends cannot do what they want to do inside parks, they are not motivated to visit parks.

> I guess if you would be allowed to drink in the park may be there'll be more people go there or the smoking stuff cause I think most people don't go there cause they can't really do what they want like eat, drink since that is not allowed cause it gets too trashy, I think that. If they're gonna loosen up that law may be then more people go (U11, Germany).

This can be, again, linked from one side to the personal preferences in recreating and from the other side to the additional living responsibilities students have that made him and his friends prefer other recreation options that would save them some time and effort, as he commented;

> Like we go out for example on Saturday or Sunday like at five o'clock in a sunny out, most likely we wanna enjoy one or two beers and in a park you can't do that you know it's not allowed there… the park has no advantage over a good café, if you wanna go out you can go to cafes, sit outside, you'll have a waitress to get you food and drinks, in a park, you have to do that by yourself. Well I think since students cook every night I don't think you wanna cook and take it out either so I guess preferably I'd order some food (U11, Germany).

This was the only mention to a negative influence of the park environment. In fact, the majority of the other non-users in this sample acknowledged that parks in Enschede are more than satisfactory. Thus, it can be concluded that individual, rather than environmental, factors are the most influencing factors on students' behavior of not using parks found in this sample.

5.2.2. Factors influencing preference for, and choice of, parks

This section presents the factors that were found to influence why some parks are preferred by students over other parks and what are the parks that eventually are chosen to be the frequent destinations. Understanding what makes a park to be a favourite place by users is expected to help in creating better and more attractive parks by considering the necessary elements in the planning, design and management of parks. While understanding the factors that lead to choosing some parks to be the frequent destination is sought to inform planners, designers and policy makers of how to enhance the use of parks.

By asking students about their favourite park and the reasons behind their preference, only some of them (19 student out of the 43 participants) stated that they have certain favorite park while the others mentioned that they just visit a certain park without having a specific preference. The main factors found to influence the preference for a certain park were related to the naturalness of the landscape, in particular, dense vegetation, lakes and animal meadows that enhance the feeling of being in a forest. The other factors were almost divided between the social environment and the existence, and quality, of the facilities and furnishing elements. For the park social environment; the presence of a lot of other users were, sometimes, perceived positively in making the park a livelier place or negatively in impairing the quietness of the park environment. While the presence of good quality facilities, like sports facilities, seating and

barbeque equipments made some parks to be preferred over others, for some students. Table 5 presents the factors that were found to influence the preference for some parks in this sample, organized within the conceptual model of the study.

Table 5: Factors influencing preference for parks

Main dimensions of the factors	Factors/influences	Brief description
Characteristics of park environment	Naturalness of landscape	Dense/closed vegetation, water ponds, fauna, opened landscape, landscape connectivity
	Park social environment	Presence of more/less users, presence of students
	Facilities and furnishing elements	Sports facilities and playgrounds, barbeque equipments, cafes and toilets and lightning
	Park size	

When it comes to park choice (the park that they usually choose to visit), distance to the park emerged as the most influencing factor in making a certain park be chosen as the usual destination. Even some of the students who expressed a preference towards a certain park, they indicated that they choose usually to visit the closer park over the favourite one. Size of the park also appeared to influence where students normally go. Smaller parks are less appreciated by students in this sample and in turn are avoided; some explained that the less activity options as the main reason of not choosing smaller parks. Facilities that parks provide and the presence and profile of other users appeared to be also quite significant, however, much less influencing than proximity. Finally, only two of the students referred to individual factors that influence their choice of the park; knowing only one park due to their recent arrival to the city or living outside the city; were the mentioned reasons for that lack of knowledge on other parks. Table 6 briefly presents the factors found to influence the choice of the parks as the frequent destination.

Table 6: Factors influencing choice of parks

Main dimensions of the factors	Factors/influences	Brief description
Characteristics of the urban context	Distance/proximity and location	To the participant residence or school and proximity to other activity centers
Characteristics of park environment	Park size	
	Facilities and furnishing elements	Sports facilities, playground, running and cycling routes and availability of activity options
	Park social environment	Presence of more/less users, presence of students and presence of youngsters
	Naturalness of landscape	Water ponds
Individual factors	Familiarity and limited information	Only known park

- **Characteristics of the urban context**
  - Distance and location

As mentioned before, distance was almost the most reported factor influences the choice of the parks to be visited. The main departing point to parks were stated to be the students' residences, either their personal residences or their friends' residences , and since most of the participants in the sample are living in the neighbourhoods *City, Stadsweide and Lasonder*, Volkspark was stated to be the closer park to most of the interviewees and in turn the most visited park.

> I visit the Volkspark more because it's closer to the main city and most of my friends live in the main center [center of Enschede] like in the centre (U17, Netherlands)

It should be mentioned that, generally, having a bike did not lessen the influence of proximity in choosing parks. Many students have referred to the distance as a principal factor in choosing their park although

they go by bike. Only two of the students, who arrived recently to the city, expressed their willingness to visit the park they like regardless of its location since they bike.

> Since I bike no problem to go because it's nice and if they have that event I even would like to go without considering that it's far or not, since I bike (U5, Greece).

In fact, in literature, distance to parks was found to be the most determinant factor in enhancing the use of parks, it is even considered a precondition of using parks according to Van Herzele and Wiedemann (2003). However, this finding contradicts the finding of Schipperijn et al. (2010), who found distance to be sensitive to age. In their study, youth were not influenced by proximity as they did not choose the nearest park as their most visited one unlike other groups which was interpreted with their limited mobility. In fact, expecting that proximity will not appear as a significant influencing factor on students' choices (Section 2.3.4: Expected findings) was based on the findings of Schipperijn et al. (2010).

A possible explanation might be that in their study (Schipperijn et al., 2010) the wide size range of the available UGSs (1-5 ha.) what made youth to travel to a farther but a considerably larger UGS than closer, probably, smaller and unappealing ones, unlike this study where case study parks almost have similar size and similar characteristics (table 2) . Another possible explanation, however not definitive, of this finding is; it might be the expressed lack of free time mentioned by many students which prompted some students to choose the closer park. Three students in the sample referred to the lack of free time as the main reason making them consider proximity when choosing parks to visit.

> Because this one [Volkspark] is most close to here [Macandra]. I 'm student I live near Saxion so I don't have much time to waste going to other parks because I just search for some sight and view so I go to the park for relax (S5, China). It depends actually if I have time I prefer to go to this one [Ledeboerpark] if I don't have enough time I think I prefer this Volkspark it is the nearest (I7, Iran).

Location of the park in relation to other activity locations was mentioned by three respondents. The proximity to other locations where students perform some recreational, social or sports activities was found to raise the opportunity of the nearby park to be passed by or to act as a resting station.

> I play tennis and it [Wooldrikspark] is next to it so when I play tennis, I go to sit there sometimes (S13, Netherlands).

This is confirmed through literature as the location of parks in proximity to other activity centres was found to enhance the use of the park. Proximity to other activity centres was found to enhance the feeling of security through realizing that the park is not located in a secluded area in one hand and on the other hand being located near activity locations was found to increase the park use since users of other activity centres can access the park from these locations (Jorgensen & Anthopoulou, 2007; Skärbäck, 2007).

- **Characteristics of park environment**
  - Naturalness of landscape

Naturalness of the park depicted by the vegetation, the trees the sounds, water bodies, fresh air and the fauna was the most mentioned dimension in influencing the preference of many students. Closed, unmanaged and dense vegetation were more associated to the feeling of being in a forest, in particular, when coupled with the effects of fresh air, sounds of animals and water streams. Other students expressed a preference for opened and managed landscapes and perceived the park, Volkspark specifically, to be

nice, clean and more suitable for passive uses like sitting with friends. The first group[3], most of the 19 students, mentioned Ledeboerpark and Van Heekpark as their favourite parks and have describe them as "*more forested*", "*it's [Ledeboerpark] more a wood than to a park*" or more "*natural*" than Volkspark, which they perceived as more "*artificial*".

> [Ledeboerpark] is more like a forest setting instead of Volkspark which is too organized I think (U18, Netherlands). I just like to cycle through the park [Ledeboerpark] I like its nature like a lot of tall trees and the wild grass there (U7, Netherlands). It's very open landscape you know [Volkspark]; it's very open, very artificial to me, nothing to see. So that's the imagination of human fantasy! Designed (I2, Georgia).

For a better illustration, figure 12 shows pictures quoted by students during the interviews in representing their favourite natural& closed or managed& opened landscapes. Photo (1) was quoted by some students as a preferred opened and clean landscape while photos (2) & (3) were quoted by other students as more natural scenes enhancing their feelings of being in "*forest*" or "*jungle*".

[1] Volkspark [2] Van Heekpark [3] Ledeboerpark

Figure 12: Favourite landscapes as quoted by students.
Source: Volkspark photo: (architectuurgidsenschede, 2012), others: researcher.

Water bodies were the second mentioned element influencing the preference and choice for certain parks. Since all of the case study parks have water bodies, size and quality of the lakes raised the preference credit for some parks. Some students stated a preference to Rutbeek (appendix 1) for its bigger lake while the other preferred the Volkspark for its clean and "*nice*" lake.

In fact, through previous studies, people were found to appreciate the natural elements of parks and green spaces, like trees, fauna, water streams that enrich their feelings of being in nature, in some studies these aspects were the most significant for users as they can be separated from the city and the urban life (Bell et al., 2008; Bullock, 2005; Gobster & Westphal, 2004; Tyrväinen et al., 2007).

The variation in preferring managed or unmanaged nature in parks appeared in previous studies to have an age and education factor. Younger and well-educated groups were found to be proponents of ecologically oriented management and thus prefer unmanaged nature while older were inclined to the managed nature due to the impaired safety perception and lack of visual clarity in unmanaged parks(Bell et al., 2008; Tyrväinen et al., 2003). In this study, however, most of the respondents belong to almost one age group (20-30 year old), all of them are enrolled in a tertiary education and regarding other socio-economic characteristics no pattern was found. Type of the activity performed in the parks can be the only explanation here. Students who use parks for less active uses like gathering with friends or sitting and

[3] According to Tyrväinen et al. (2003), this group are proponents of what they called "ecologically-oriented management". In this study, instead of naming them as "proponents of ecologically-oriented management", they are named "ecologically oriented group", as a contraction.

relaxing tend to more appreciate the spacious, clean and managed landscape while students who normally go for active uses and observing nature had more preference for unmanaged and wild vegetation.

> For me Volkspark is nice because it has so much grass so you can sit, while the Ledeboerpark doesn't have many places to go just one spot [pointed to the central area of Ledeboerpark, Fig. 19] (17, Netherlands).

Landscape quality in terms of managing trees, presence of litter and cleanliness of the park was found to be a principal factor that affects the use of green spaces (Bell et al., 2008; Gobster & Westphal, 2004; Tyrväinen et al., 2007). However, in this study, apart from associating the managed and opened landscape with the cleanliness of Volkspark by one student, no other mentions to that issue, which might suggest the general satisfaction with the management quality of the parks in the city.

- Park size

Size of the park was mentioned by many students (23% of students) as a factor that mainly affects their choice. Bigger parks were found to be chosen more because of some qualities students associated to them. Three students mentioned that since they go to parks mainly for jogging, a bigger park is chosen because of the opportunity of having a bigger running round. Also a bigger park was preferred over smaller because of the opportunity of having some quiet areas, in particular that facilitates doing cognitive activities. Along with the landscape characteristics, bigger park is preferred because of having more advantage of experiencing and discovering nature, as explained by a student;

> …big area that I'm talking about that you go there and even...during three of four hours you will walk and you still not visit all places that are around so you can just walk in a different places, areas, visit, and things so (I2, Georgia).

Not only was the opportunity of having a bigger running route or experiencing more nature associated to bigger parks. Some students related the lack of activity opportunities in the park, in particular Wooldrikspark, to the small size of the park which made them less motivated to visit the park.

In fact Lachowycz and Jones (2012) suggested that it might be that different park sizes are required by different user groups. For instance, bigger parks maybe required by joggers who need more space for running while, for instance a family with young kids might prefer small parks with playgrounds for children. In this study, choosing bigger parks by joggers is confirmed, however, there was no divergence found in this study since bigger park was always preferred over smaller. Indeed, the expressed advantage of bigger parks to enhance the feeling of quietness and experiencing nature is confirmed in previous studies also. Bigger parks were found to provide a variety of nature and recreational experiences by enhancing the users' feeling of losing themselves in nature (Giles-Corti et al., 2005; Van Herzele & Wiedemann, 2003).

- Park social environment

Park social environment in terms of the category of other users (students/local residents/youngsters) and the level of crowdedness emerged as an influencing factor on the preference and choice of a certain park in this sample. For some students, parks where they find usually less users are preferred more because of the more quietness they experience. For that group of students, Van Heekpark and Ledeboerpark were preferred over Volkspark which was disliked for having many users, in particular youngsters whose presence negatively affect the quietness and safety perception of the park. While for other students; the presence of many users is perceived to enhance the liveliness and feeling of safety in the park. One of the students stated that although she prefers more Van Heekpark, she tends to visit Volkspark more as the presence of people there gives her a feeling of safety.

> Among these I like that cycling park [Van Heekpark]… But here I feel safe than there [in Volkspark than Heekpark]... lots of people visit here [Volkspark], but I don't know why I don't find many people there [Van Heekpark]. So, I'll visit this one [Volkspark] (I1, Nepal).

Along with safety, as mentioned before, presence of many users is perceived to enhance the liveliness of parks for some students, in particular when those users are students, as expressed by one of the students.

> Because most of the time there are more people so it's [Volkspark] more lively (S13, Netherlands)…also there [Volkspark] you see a lot of people you can see a lot of students too I know that most of the students go there which is nice (U6, Germany).

That attention to the user category was confirmed by another two students. One of them ascribed her reason for not visiting Wooldrikspark to the over representation of local residents in the park which gave her the feeling that the park is a local one.

> …well, actually in Enschede those are known as the parks, but there is some few parks also, very smaller ones and the local ones so you don't want to go for that type of less special to visit it. So, if you want to pass by you will see because that's for the local people, if they have sometime during the day just to bring kids in those green areas (I2, Georgia).

This effect of the presence of other users on the choice or preference for certain green space is confirmed in previous studies. In general, presence of many users in parks were found to enhance the feeling of safety and in turn enhance the use of parks, asserting that presence of youngsters and drug users result in opposite trend, while overcrowding on the other hand was found to impair the quietness of the green space and in turn discourage some users from visiting these parks (Bell et al., 2008; Jorgensen & Anthopoulou, 2007; Lo & Jim, 2010; Luymes & Tamminga, 1995; Tyrväinen et al., 2007; Wright Wendel et al., 2012).

The attention to the user category, however, might be explained through a finding of previous study on international students in Melbourne. Non-local students were found to avoid public places where the majority of users are local or rich, that avoidance was due to having a feeling of being unwelcomed, however, this feeling of being excluded is created psychologically and not physically (Fincher & Shaw, 2007).

- Facilities and furnishing elements

Many students referred to availability and quality of facilities and furnishing elements as significant elements influence their preference and choice for some parks. Availability of activity related facilities like; sports facilities, playgrounds and cycling paths influenced the preference and choice for students who mainly tend to use parks actively. Volkspark is visited more for its sports facilities and running route, along with Ledeboerpark. While fewer students referred to some facilities like cafes, refreshment stands, toilets and barbeque spots as one of the main elements made them prefer a park like Rutbeek over the city parks where they can have a barbeque party and find the necessary facilities.

On the other hand, parks that lack these facilities are perceived as "*plain*" parks that most of the students avoid to visit. Generally, parks inside the city are perceived to lack sufficient facilities and activities. Even when Volkspark is chosen by many students to be their most visited park for its sports facilities, there is recognition that it is a *"dormant park"* (lacks rich activity options). Also, three students mentioned that lack of facilities in Wooldrikspark, is one of the reasons for not preferring or visiting the park.

> Because most of the time there are more people [in Volkspark] so it's more lively and it's bigger than Wooldrikspark which is a bit smaller and because there is much to see there because the birds there, the playground for kids so you've

> got more to do more than only walk there while in Wooldrikspark most of the time you're alone there (S13, Netherlands) It's ok [Wooldrikspark] but it's a little bit small and it doesn't have any special facility it's just you sit see around and come back even you cannot bike inside the park, I like to bike inside the park because I think there's a sign that you are not allowed to bike inside the park (I11, Iran).

In fact, in previous studies, there is a disagreement on the order of significance of park facilities. While some scholars found that facilities and naturalness of parks comes after the size and distance in defining attractiveness of parks, others believe that facilities are more significant than size and accessibility to parks (Giles-Corti et al., 2005; Kaczynski et al., 2008; Van Herzele & Wiedemann, 2003). In this study, it might be suggested that the significance of the park size is perceived by its potential for providing more activities and experiences, which might suggest that facilities in this sample are considered as essential as park size, in particular for students who prefer to carry out many activities in parks.

- **Individual factors**
  - Familiarity and limited information on other parks

Only two students linked the main reason for choosing Volkspark as their only visited park to the familiarity with the park. Being a quite recent resident in the city (arrived 6 months ago) and knowing less about the locations of other parks coupled with the lack of interest in knowing more about them has limited the choice of one of the students to Volkspark.

> I just know this park [Volkspark]. Maybe if I know other parks I would go there but I never have interest in these parks that's why I don't go to them (S12, Netherlands).

This factor of having limited information on the range of public places that can host students, non-local in particular was found in another study on tertiary students in Melbourne to limit the range of their recreation choices. The study found that, although some students tried on their own to search for other interesting parts in the city of Melbourne, most of the students stick to the nearest and known places as they feel more secure in the familiar places (Fincher & Shaw, 2007).

5.2.3. Conclusion

To conclude, as shown in table 7,it appears that individual factors rather than environmental factors are more significant in preventing students from using parks, while the characteristics of the park environment, in particular the natural landscape elements and the social environment in the park, appeared to differentiate between the students in favouring certain parks. Distance, on the other hand, appeared to be the most crucial factor in determining which park to be the frequent destination for most of the students in the sample.

Table 7: Main Factors influencing non-use, preference and choice of the city parks by students

	Individual factors	**park environment characteristics**	**Urban environment Characteristics**
Non-use	Availability of free time Cultural background and lifestyle Upbringing & living environment		
Preference		Naturalness and landscape quality Social and cultural environment Facilities and furnishing elements Park size	
Choice			Distance Location

Being busy with study, travel and other life responsibilities imposed on students, in particular who live independently, and the personal and cultural preferences in spending recreation doing other activities away from parks were the main reasons found in this study to influence non-use.

This finding does not strongly go in line with findings of a previous quantitative study (Last, 2004) that found other environmental factors, mainly the distance to parks, as the main influencing factor of not visiting parks in the city. However, that study did not focus on youth or students as particular user group which might explain that difference, since students, in one hand, are assumed to be less influenced by distance ,being a mobile group, than older groups (Dunnett et al., 2002; Schipperijn et al., 2010), and on the other hand, students' residences in the city ,and in particular in this sample, are close to many parks (fig.6). It should be mentioned that not having enough time and disliking parks in general were also found in that quantitative study as a quite significant reasons of not visiting parks, which again strengthens the influence of individual factors in shaping non-use behaviours.

For students who visit parks, it can be said that factors related to the park environment, particularly the characteristics of the natural landscapes, are the most influencing factors on students' preferences for certain parks, in this sample. Ledeboerpark and Van Heekpark were the most preferred parks, and mainly students referred to the naturalness of their landscapes and the social environment, of having fewer visitors, in enhancing the feeling of being in a forest. While, on the other hand, the social environment, in terms of the presence of more users, and in particular students, besides having more facilities and activities made some students prefer Volkspark. Richness of facilities and the bigger lake of Rutbeek made some students prefer it more than any park inside the city. Figure 13 shows the spatial distribution of the factors that appeared to influence students' preferences of the different parks in the city.

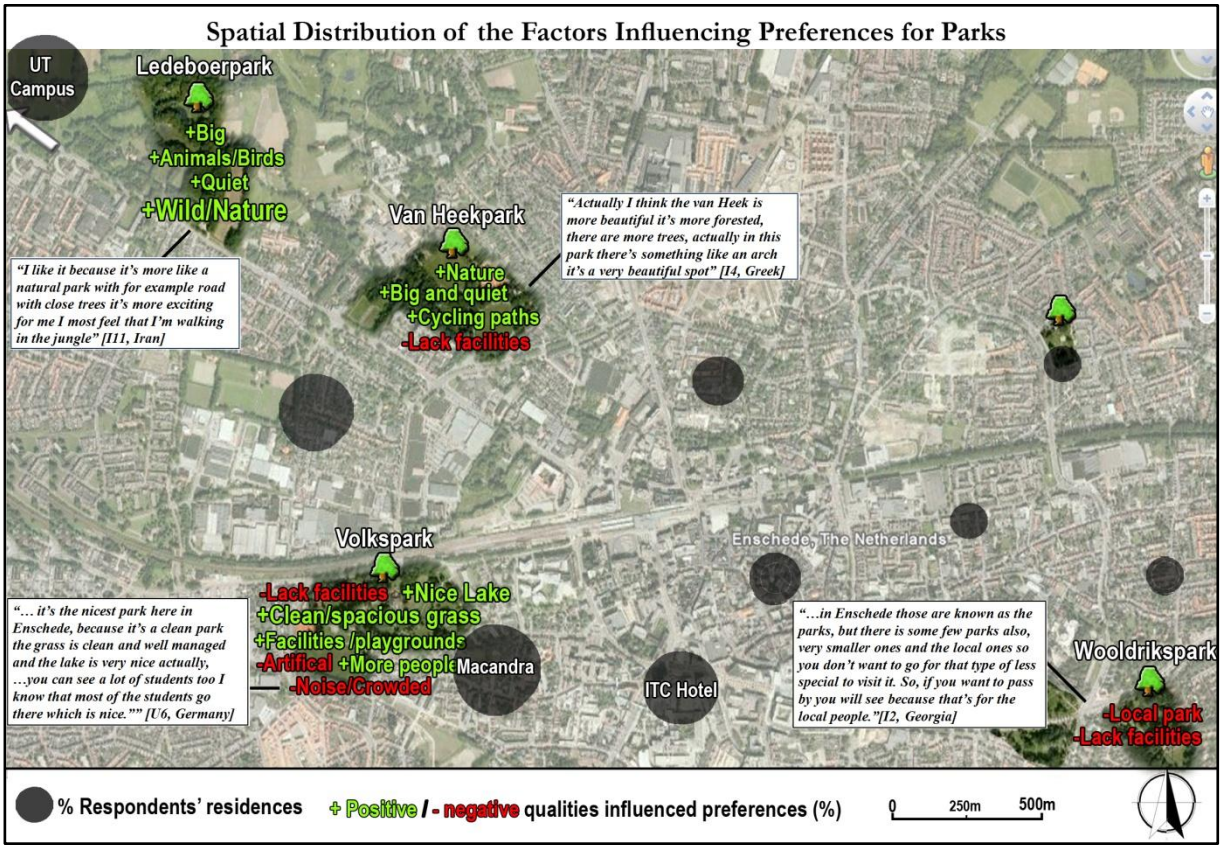


Figure 13: Spatial distribution of the factors influencing the preferences of students for the case study parks

Although Volkspark was less mentioned as a favourite or preferred park, it was the most chosen park to be the frequent destination of the students in the sample. Its proximity to the students' residences, in this sample, was the main reason. The other main factor recurred as a factor was the park size. Indeed, their explanations showed that it is not the size per se was the factor, it was ,mainly, the more diverse activity options they have in bigger parks Thus more diverse landscape and more options of park facilities appeared to be significant in determining park choice, however, still much less than proximity.

Both the social environment of parks; that enhance either perception of park to be safe, quiet or festive; and the naturalness of park landscapes were also mentioned but much less influential on choice than proximity. Finally, an individual factor related to the level of knowledge on the range of parks, and what considered being parks by students, can be considered as a factor. Figure 14 shows the spatial distribution of the factors that appeared to influence students' choices of the different parks in the city.

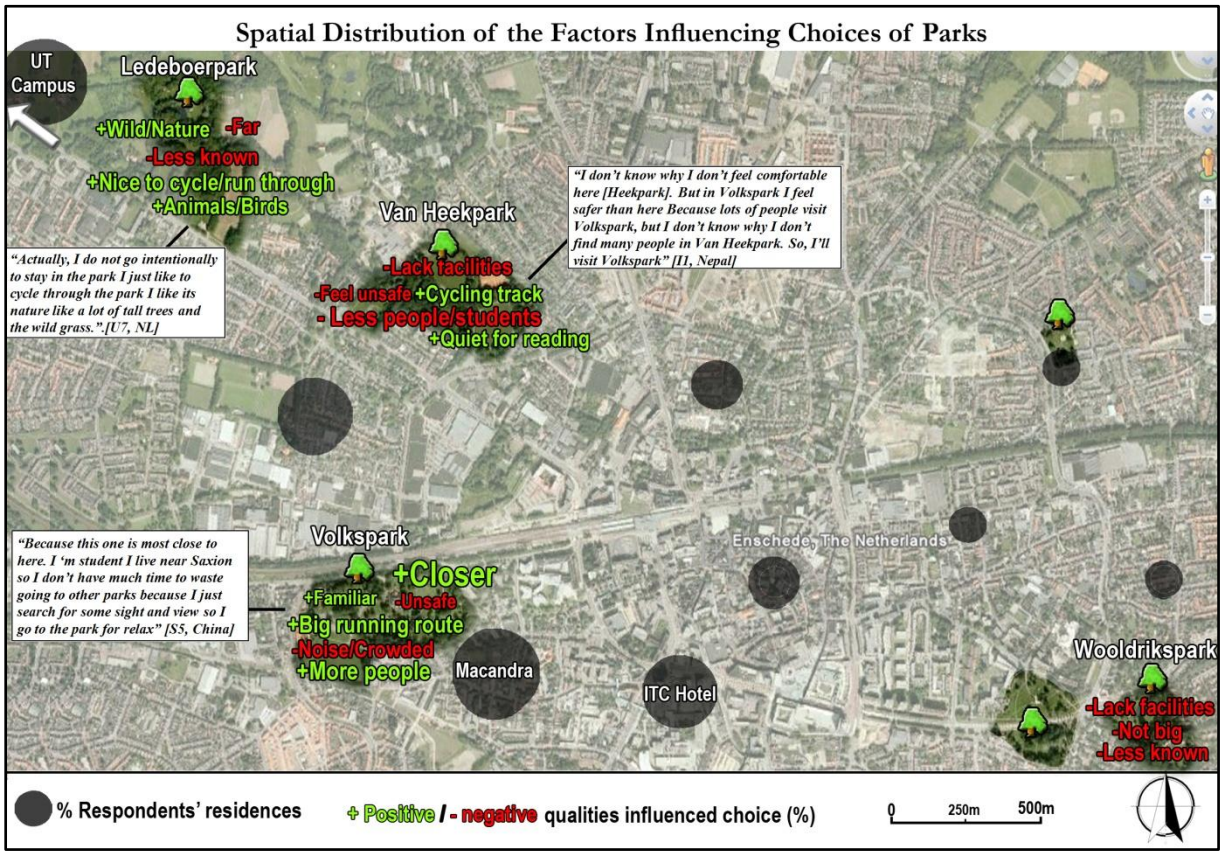


Figure 14: Spatial distribution of the factors influencing the choices of students of the case study parks

So, it can be said that preferences for some parks (and the factors influenced these preferences) appeared to influence the choice of these parks for fewer students in this sample. Proximity had a greater influence instead, which contradicts what was expected from involving a more mobile group (section 2.3.4).

The finding of a previous quantitative study ,(Last, 2004), showed that Ledeboerpark and Van Heekpark were mainly visited because of their beautiful atmosphere. Although no definition or explanation is given, beautiful atmosphere could be explained by the quietness and the nature experience that both parks appeared to enhance. Volkspark was found to be mainly visited because of the fairground which contradicts the finding of this study, since students choose mainly Volkspark for its proximity. It might be including other user groups, like families, in the quantitative study that affected that divergence since students ,in the sample, appeared to use the park quite regularly and not only during events.

5.3. Factors that affect students' perception and use of urban parks in Enschede

One of the main objectives of the study is to understand how students perceive and use the city parks. Identifying what shape their use and perception on the meanings, appreciation, requirements and problems in parks is intended to help in developing design, planning and management decisions that help in making parks more attractive and responsive places for the students, and users in general.

5.3.1. General perception and the use of parks

By asking students about their use patterns of the parks, most of the students reported that they visit parks for passive uses like sitting, relaxing, walking, having picnic and enjoying the views followed by running and cycling, that were mentioned by many students as the main activity they perform in the park, and sports activities . Other activities like reading or just passing through the park and attending events (i.e. the fair in Volkspark) were mentioned but less frequently (fig. 15).

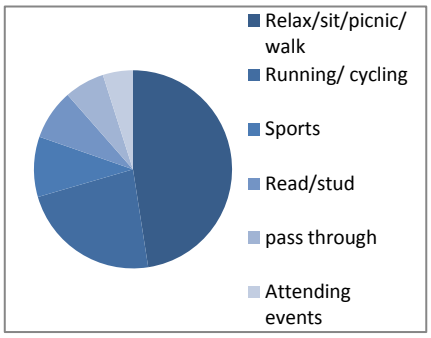


Figure 15: Distribution of activities performed in parks

Regarding the visiting frequency (fig.16), almost half of the interviewees make at least one visit in a week. In a previous study, aesthetic qualities of parks and having a companion were correlated to the visiting frequency (Kaźmierczak, 2013), in this study, however, the weather ,in terms of temperature and rainfall, appeared as the main determinant factor on the visiting frequency mentioned nearly by all of the participants, who preferred visiting parks in summer and spring mostly, while having a partner appeared to be much less influencing, indicated by a comment of one student;

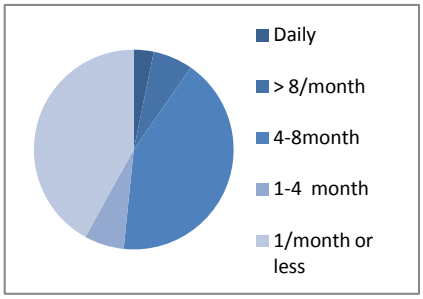


Figure 16: Frequency of park visiting

> Before I used to go with my friends but then unfortunately sometime they don't have time … preferably with friends but because they are busy so… I don't want to miss my habitual behaviour (I2, Georgia).

In general, parks are perceived to be pleasant, satisfactory and safe. However, some view them as plain and dormant in terms of the range of activities students can have. By analysing the data; students appear to categorize the parks into different types; natural and wild parks where the closed, wild vegetation and tall trees are the predominant landscape features; the festive and pleasure park where opened, spacious, clean grass and sports fields are the main features of the park; serene and quiet park where the park enjoys more natural setting with big space that create the feeling of serenity; and finally, small and local parks where the main users are the local residents and where much less activities can be performed there.

For each of these types, a range of activities are perceived to be more suitable. The next subsection discusses the factors that influence associating these characters with some parks, the perceived qualities and problems experienced inside parks and the developed requirements or needs by using these parks.

5.3.2. Factors that influence the perception and use of parks

During the interviews, students were asked to map their activity areas, favourite locations and places where they are less satisfied with. By analysing the interviews and these maps, the four aspects of the park environment, indicated in the conceptual model, appeared to be associated with different uses, qualities and needs. For better understanding of the identified factors and their influence on the perception and use, figures 17, 18 & 19, illustrate the mapped activity spaces, appreciated qualities and problems.

- **Characteristics of park environment**
  - Park size

As discussed before in section 5.2.2, size of the park emerged as a main factor enhanced the feeling of the park as a quiet and serene space. One of the respondents stated that her perception of van Heekpark as a quiet park is related to the bigger size of the park and thus the park is a most suitable for reading, which was confirmed by another student who mentioned;

> Heekpark is wide and you can find a quiet place to study there but I think Volkspark needs this [quiet reading/study places] more (I10, Mexico).

In fact, quietness mentioned by some students as important quality needed mostly for cognitive uses (studying/reading), which can be seen in figures 18 & 19, where studying or reading activities can be seen around areas that perceived to be more quiet.

Bigger parks are also associated to other park characters. As discussed before in section 5.2.2; when coupled with closed landscapes, park was perceived as a wild place where discovering nature is allowed through walking in different parts. Also, for the park to be perceived as a festive place where many activities can be performed, size of the park appeared to be significant factor in particular for joggers and more active users who prefer bigger areas which all are confirmed in previous studies as discussed in section5.2.2. On the opposite, smaller parks appeared to enhance the perception of the park as local and thus less attractive for use, in particular non-local students, as quoted before in section 5.2.2

- Naturalness and landscape quality

Wild and closed landscapes enhance the perception of wilderness of the park while parks with opened landscapes and spacious green and clean grassland were describe as "nice" and "nicest park" in particular by students who go for sitting, relaxing having picnics and gatherings with friends.

> I mainly go to the park to be with friends, for picnic or just chat … for me Volkspark is nice because it has so much grass so you can sit (U17, Netherlands).

When students were asked to map to their favourite areas in the park, most of these areas were mapped where natural elements, in particular water bodies, exist. As the figures 17, 18 and 19 show; most of these areas are around lakes, fauna or dense vegetation.

The difference in preference for closed or opened landscapes that was found in previous studies (Bell et al., 2008; Tyrväinen et al., 2003) and that was found previously in section 5.2.2 to differentiate between the two groups' preferences of parks (Ledeboerpark and Van Heekpark Vs Volkspark, respectively), was also found to differentiate between the favourite areas and the activity spaces of each of the two groups inside the single park.

This division can be best seen in the mapped favourite and activity areas in Ledeboerpark, figure 17. For students who are more interested in experiencing nature in parks (ecologically-oriented), areas where there are dense vegetation, animals and unpaved paths; were selected as their running, walking or cycling routes.

> I'm trying to follow the trees I don't like to walk too much in open landscape,… then I cross here and the sheep's & deer's are there and donkeys and here they have some birds like geese and things like that [around the lake and animal meadows in Ledeboerpark, fig.17] (I2, Georgia). I also prefer for instance the routes which are not paved, unpaved routes. Because on Ledeboerpark you have these routes a lot of them unpaved and I prefer them for walking, for running instead of the organized greeneries (U18, Netherlands).

Opened areas, organized and areas of mown grass were the most areas they, (the ecologically-oriented), dislike. Therefore, the central area in Ledeboerpark was the most avoided area in the park since they perceive it as more "artificial" and more "organized".

> I actually avoid this area a little bit [the central area, (area No.1), in Ledeboerpark, fig. 17]...because the running I like to do it in a forest and this is all organized (U18, Netherlands). This central part [in Ledeboerpark] when you are entering there, I feel it's artificial. That's why I told you that I'm making circle there because I feel nature (I2, Georgia).

On the opposite, students who were less aware with the values of unmanaged nature preferred the central part of Ledeboerpark. However, it should be mentioned that their preference for the central part was not attributed to the managed vegetation there; it was attributed to the presence of the lake, ducks and a special kind of seating on the lake, where many of them prefer to sit on and enjoy the views (fig. 17).

> Because there are seats they're like "chaise longue", (fig.17), I like to sit there in front of the lake and relax and watch the ducks there it is really calm and beautiful (I7, Iran). The view there, sitting there. There they have red chairs they are like a kind of umm chase lounge, you can lay down (U13, China).

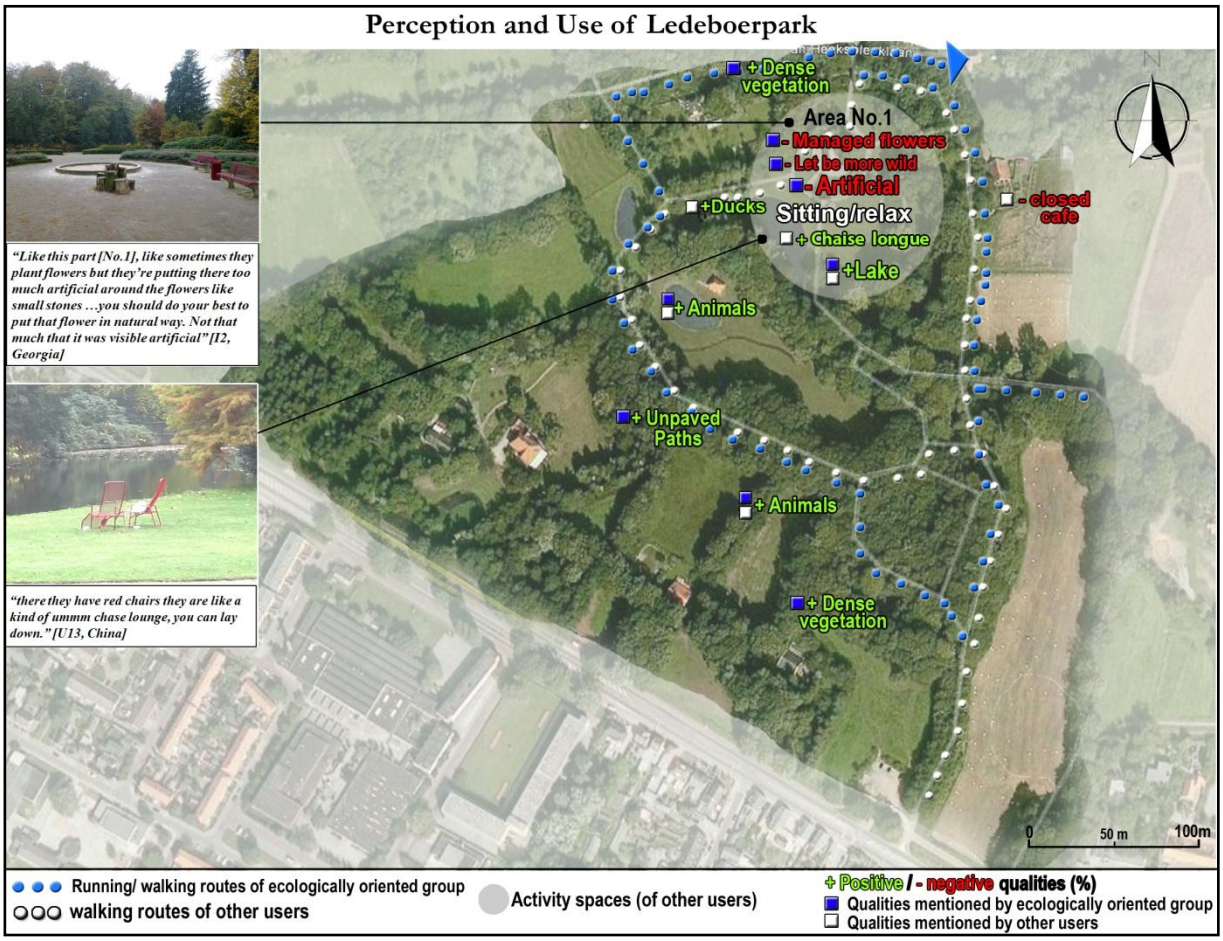


Figure 17: Activity spaces, perceived qualities, problems and requirements of Ledeboerpark users

Besides perceiving opened landscape as artificial, by looking at the maps of Volkspark and Van Heekpark (figures 18 & 19), opened landscape was also perceived to impair the privacy in the park. This can be seen where areas that have less vegetation were described as having no privacy (figures 18 &19).

On the other extreme, fewer students perceived dense vegetation to enhance the feeling of unsafety due to the resulting shading, in particular of taller trees, as explained by one of the students in Volkspark (fig.18).

> It's not that shady and full of the trees and beside that it has grass, it's nice I like it. It's clear [western area]... I have to see the end of the route ... If I go for example here; you cannot see so I feel unsecure [in the southern part; indicated with a photo in fig.18] (I5, Iran)

However, a notice can be made in that issue. Students, who prefer opened landscapes, perceive it as more nice or pleasing, and who mainly use the park for gatherings or sitting to enjoy the surrounding; can be seen performing their activities mainly in the eastern half of the Volkspark.

It can be observed in the map of Volkspark (fig. 18) that the eastern part enjoys more landscape elements like the lake and the swans, the bridge, the restaurant and some artworks, while the western part is almost an opened grassland, where many negative perceptions were associated to. Some of the students who prefer opened landscapes for gathering with friends, sitting or having picnics; expressed their dissatisfaction with the western part and mentioned that there is not much to do there.

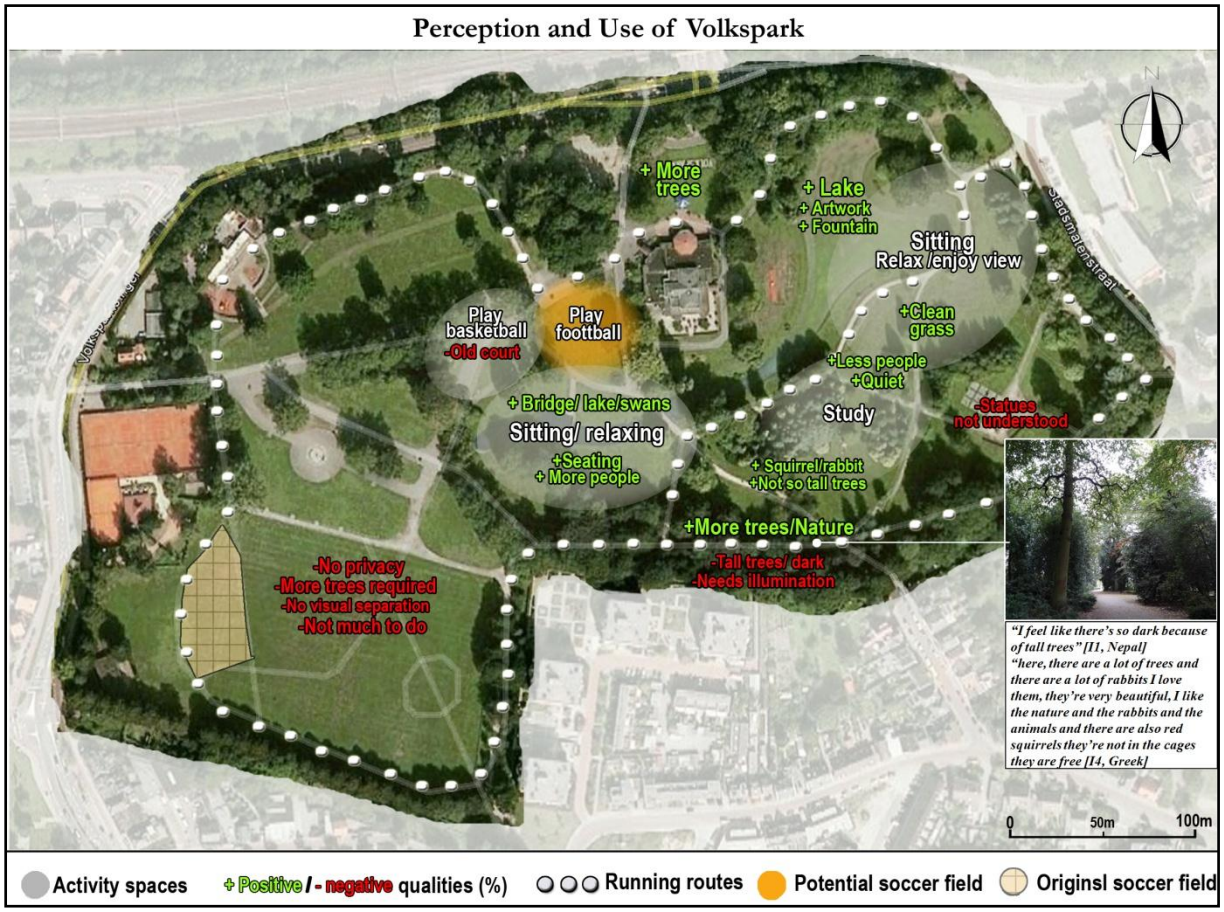


Figure 18: Activity spaces, perceived qualities, problems and requirements of Volkspark users

This can suggest that, preference for opened landscape does not mean providing opened, clean grassland that is poor in landscape elements or facilities. The presence of elements like ponds, fauna, fountains and facilities for seating are principal elements if the function of that grassland is to be used by many visitors for passive uses.

When students were asked about their requirements in the parks, the only mentioned requirements related to the natural environment of the park were mainly, more trees and less management.

Three students mentioned that they would like to see more trees in parks, in particular in the much opened landscapes so that the park can be more visually separated from the city and can enhance the privacy of these areas, in particular the western part of Volkspark (fig.18).

> More trees because I always think that you can see the city form every point you can see the city (U19, Netherlands).

Indeed, separating the inside of parks visually from the disturbing urban scenes outside parks was argued by Van Herzele and Wiedemann (2003) as a quality that enhance the perception of being in a natural space away from the burdens of the urban life, which finally improve the satisfaction of the visitors.

Other student who reported to be less satisfied with the organized central area in Ledeboerpark expressed that she would like to see the grass be more wild in order to enhance the feeling of nature in that part. Which, again, confirms the strong inclination towards more wild and unmanaged nature for some users that appeared in this sample and in previous studies (Bell et al., 2008; Tyrväinen et al., 2003).

> Let that park to be more wild. Because some of the parts they're taking care and it's nice that they're taking care but not too much it should not be that visible, like this part [area No.1 in fig.17], like sometimes they plant flowers but they're putting there too much artificial around the flowers like small stones that no one cross and do something (I2, Georgia).

- Facilities and furnishing elements

Participants who are more ecologically oriented perceive in turn more facilities, sports fields and playgrounds in parks to be too organized activities that should not be in the park in order to keep it in a more natural setting. This can be seen in the areas they mapped as less satisfactory, especially in Ledeboerpark (fig.17).

On the contrary, most of the students in the sample, who mainly use parks in recreation, sports or picnics; assert the importance of having these facilities in order to be satisfied with using the park. Since they associated lack of facilities with a perception of the park as a dormant place where no activities can be carried out. This goes in agreement with the concept of festive and pleasing parks that is assumed to have diverse facilities that can host many activity options for its users (Stigsdotter & Grahn, 2002).

> …it doesn't have any special facility [Wooldrikspark] it's just you sit see around and come back even you cannot bike inside the park (I11, Iran).I prefer it [Volkspark] because there is much to see there because the birds there, the playground for kids so you've got more to do more than only walk there while in Wooldrikspark most of the time you're alone there (S13, Netherlands).

When preferred areas were mapped, along with natural elements, benches and art works near these areas were mentioned as an important component of that place. Playgrounds and sports fields were also mentioned as favourite places, however much less frequently. Indeed, one of the students complained about not being able to make use of some of sports facilities as the playing equipments are not provided in the park.

> Just in Volkspark I see some playgrounds but no facilities you have to bring your own stuff and play… There's a basketball court but not the ball (I11, Iran).

In fact, that student was not sure whether there is a rental service for the sports equipments or not which pointed to other issue, or problem, perceived in particular by some international students who find difficulty in understanding the local language; which is the level of information inside the parks.

Level of information appeared in other parts during the interviews with students. Although Volkspark has toilet facilities, some students referred to the lack of convenient facilities inside Volkspark, including toilets, as a factor influencing their length of staying in the park.

> Yes, because if I want to stay for a long time specially you need some cafeteria, some toilet but there is not [in Volkspark] (I11, Iran).

Lack of sufficient information cannot only be revealed by the wrong information on the availability of some facilities in parks. It can be also revealed by the areas students mapped. Two of the students expressed less satisfaction with the memorial statues area in Volkspark and the buildings inside Ledeboerpark due to lack of understanding of meanings, function or values of these settings.

In fact, information is a principal element inside parks argued and found in previous studies to improve the feeling of safety, in particular for elderly who find some difficulties in orienting themselves in parks (Jorgensen & Anthopoulou, 2007; Luymes & Tamminga, 1995). However, in this study it can be suggested that it is not the feeling of unsafe that was developed; instead a feeling of discomfort can be observed besides affecting the use pattern of the park and its facilities that was resulted from that perceived lack of information.

When students were asked about their requirements, facilities formed most of their requirements in general. Cafes were mentioned as the most facility students would like to have in parks. Although there is a restaurant in Volkspark, but some students mentioned that it is expensive. While in Ledeboerpark, a student complained about the café being always closed and expressed her, and her friends', desire of having a café there.

> But I never use it because it's expensive [the restaurant at Volkspark] and it feels like it's always like it's not for individual visit but I'm not sure about it (U17, Netherlands). We're really looking for a café there [Ledeboerpark] because there's something here [to the east of area No.1, fig.17] I think like a café but it is always closed. And we were talking with friends and also they think it'd be cool if they have a café there and we can sit and talk (U13, China).

Sports fields, like, skate parks, badminton fields or outdoor gym were mentioned by many students who would like to have more activity options in parks. On the other hand, students who are more ecologically oriented mentioned that they would not like to see more activities or facilities in parks, in particular in Ledeboerpark. Although Volkspark has a basketball field, which is appreciated by most of the students who use it, some students complained about the quality of that field regarding its maintenance, location and its size.

> It's very old and its position, situation [location] isn't good. So they need to fix it (S5, China). The basketball court is very small (I3, Ethiopia)

A soccer field was also a requirement that some students raised. Although, the layout map of the Volkspark, provided on the website, suggests an area in the western part for football (fig. 18), students in this sample did not recognize that proposed field. In figure18, a potential area for the soccer field was mapped by two students who mentioned their desire for having a more official field in Volkspark.

> Generally I'm satisfied the only thing I'm worried about is for them to officially make a football field ... Because this is not football field so if they can make a nice small football field... that's something I would like them to improve (I6, Ghana).

Some furnishing elements were required to improve the comfort, the festivity and the suitability of the park for some activities. The availability of some facilities in the campus appeared to differentiate the facilities that the on-campus students require than the other two groups. The presence of music stereos in the campus motivated one student to wish for installing such equipment in the Volkspark. In fact, the idea of having music stereo can be seen in an example from Sao Paulo. The idea behind Villa-Lobos park, that is named after a Brazilian composer, is to provide a pleasing environment for the users where they can enjoy the music of Lobos throughout the park (Rodrigues, 2001). Although it seems to fit the character of Volkspark as a pleasing space and as a an arts and events park, the reaction to such a suggestion is not known by other users and user groups and since it was mentioned only by one student, this cannot be considered in this study as more than a suggestion.

Availability of many study places in the campus, like Vrijhof building, was mentioned frequently by students when they were asked whether they use parks for study. Other students, mostly off-campus students, tried to study in parks, however, facilities like sheltered study areas where they can sit, study and enjoy the outdoors, internet and convenient benches were mentioned by them to be able to have a convenient stay in the park.

In general, cafes, toilets, seating areas and internet were mentioned by students as principal facilities that affect their length of staying in the park. If they would like to spend more time in parks, internet was mentioned by some students to be important in order not to feel boredom by staying for longer time. While cafes, mainly and to less extent, toilets and convenient benches were mentioned as necessary elements to guarantee a convenient stay in the park which all are believed to support longer stays (Kaźmierczak, 2013).

- Social and cultural environment

Presence of more people in parks, as discussed in section 5.2.2 is found to enhance the perception of the park as nice, festive, pleasing and lively place where the main types of activities students can enjoy are sitting, watching others and doing more active uses there This can be observed in figure 18, some students preferred to spend most of their time around areas where there are a lot of people and where they mainly sit, talk and watch others doing their activities.

> …this area [around bridge/lake/swans, fig.18] and we normally go and sit there around the lake and actually the grass there is really clean, the lake is really nice and there you can see a lot of people too(U6, Germany).

On the contrary, the presence of few visitors appeared to influence the perception of the quietness and serenity of park and for other students enhanced the feeling of being in nature and wild forest, which enable them to experience the nature and the serenity in the park. For that group of students who prefer to use the park; to get relief from stress, for doing cognitive activities or exploring nature, areas with less presence of people were mapped as favourite areas, as seen in figures 18 and 19.

> On the grass, somewhere there aren't so many people I don't like to be surrounded by noise and stuff like that I just like to stay and relax (S3, Romania). There is no too much people and you always have the feeling that the air is fresh and you're also in a wild forest …from the artificial world where I have to do research, I'm going to the natural world where I feel that I'm part of the nature and I can see and think about other things also not just on the study (I2, Georgia).

In fact this pattern of use can be confirmed through Stigsdotter and Grahn (2002) who argued that pleasing and festive parks are preferred by less stressed people who prefer to either observe other doing

their activities or who prefer to carry out their activities themselves. While more wild, serene and quiet parks were argued to suit more stressed users who "strive to have a balance with themselves".

Problems perceived regarding the presence of other users were mainly associated with the category of users (i.e. youngsters). In fact there was only one mention of such a problem in Volkspark. Only one student reported his seeing to youngsters using drugs while other student just mentioned that she heard about that in Volkspark. This might suggest that the concern of the Volkspark managers about the safety inside the park, regarding the behaviours of some youngsters (section 4.3.3), is not much perceived by most of the interviewed students who appreciated the presence of many people in Volkspark in enhancing their feeling of safety.

The cultural environment of parks regarding events, in particular musical events, were one of the main aspects students expressed their desire for having more in the park.

> Events, if they do more in the park, in Volkspark they do the fair and sometimes they do the exhibition things but it would be nice to have concerts there, they have sometimes the classical ones but there are very few in the year (I10, Mexico).

In fact, this might goes in line with the vision of the park as an art and events park, as stated by the interviewed policy makers which can be realized, presumably, to attract some students who would not visit parks except for a good event or concert.

> What would attract me to visit the park … maybe a party or something like that (U9, Netherlands).

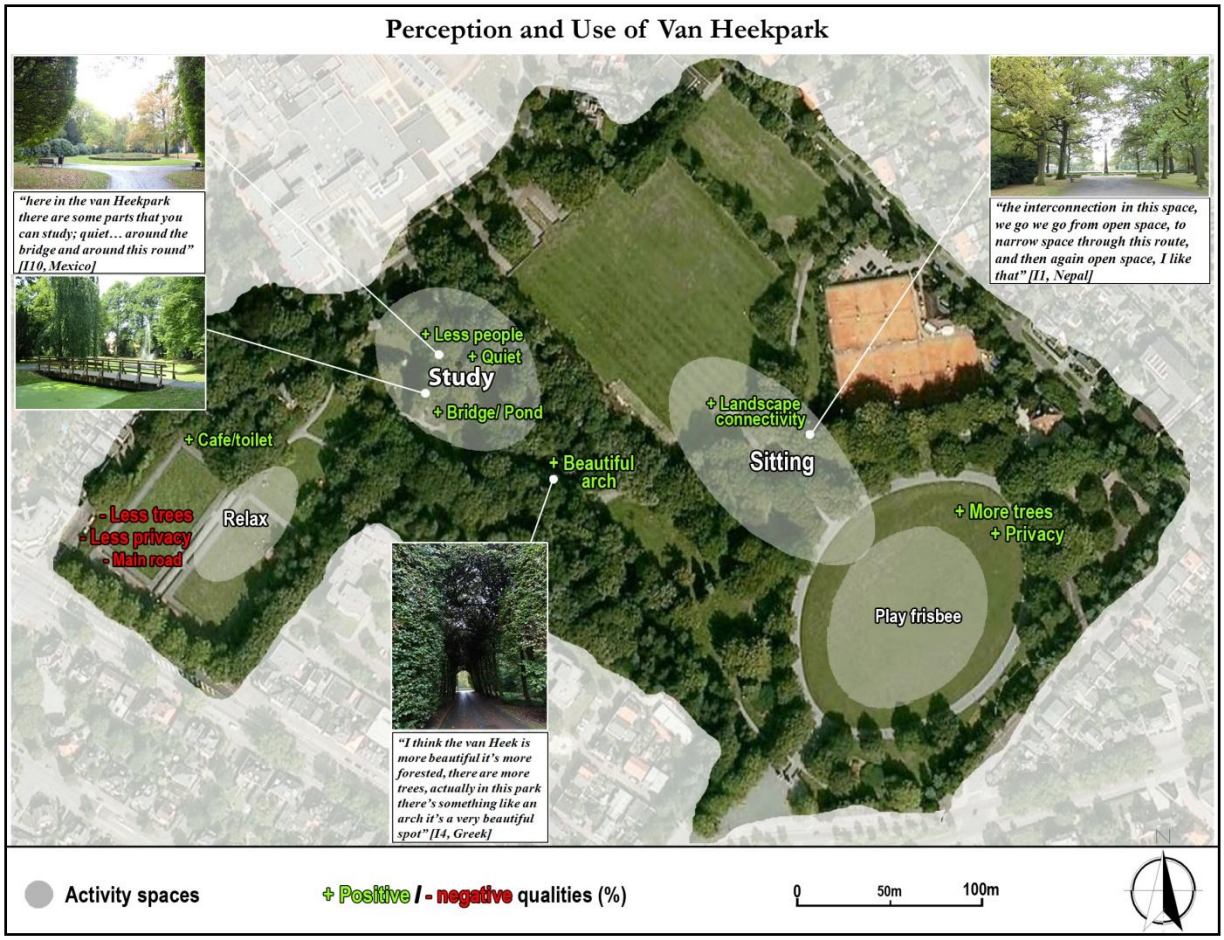


Figure 19: Activity spaces, perceived qualities, problems and requirements of Van Heekpark users

5.3.3. Conclusion

Generally the parks considered in this study are perceived positively, although some students perceive them as dormant and lacking facilities. As mentioned in section 5.3.1, students can be concluded to attach certain characters to certain parks and perceive each of these park characters to be associated with a range of activities as presented in table 8.

Table 8: Association between the general perceived characters of the parks, the influencing factors, and the perceived suitable activities and uses

	Park size	Naturalness and landscape quality	Facilities and furnishing elements	Social and cultural environment	Perceived suitable activities/uses
Nature/Wild park	Big	Wild vegetation, closed landscape & fauna	Less facilities & less organized activities	Less people	Run/walk/cycle through nature, discover and enjoy nature and views
Festive and Pleasure park	Big	Opened Landscape, clean grass &fauna	Sports fields & playgrounds	Events & more people	Stroll, relax, gather with friends, picnic, sports
Serene and quiet park	Big	-	-	Less people	Cognitive uses; reading, studying
Local park	Small	-	Poor facilities & lack of activities	Local residents	-

This association found between certain park features and the perceived characters of the park and their influence or association with certain uses, is confirmed in the literature by the work of Stigsdotter and Grahn (Grahn, Stigsdotter, & Berggren-Bärring, 2005; Stigsdotter & Grahn, 2002). Stigsdotter and Grahn (2002) found that parks ,according to their features, can be perceived to have one or more character (or rooming quality) out of eight identified as; serene, wild, rich in species, space, common, pleasure garden, festive and culture While their association with certain uses was confirmed by Grahn et al. (2005) who asserted that certain types of uses are associated with certain types of parks.

However, it can be seen that a *local park* did not appear in their classification. In fact, the nature of the study sample, in including non-local & temporary residents, might be suggested as the reason for such a type to appear, since their study included only local residents.

It can be said that, in this sample, Ledeboerpark, with its more rich natural landscape, dense vegetation and wide animal meadows was perceived to fit to the first type, "nature/wild park". Volkspark with its opened landscape and quite wider range of activities was perceived within the second type, "festive and pleasure park". Van Heekpark was perceived as the quiet park that attract less visitors and finally Wooldrikspark was perceived as small and local park that students were discouraged to visit and use.

By using these parks, students appeared to develop positive perceptions in each of these parks, to appreciate some elements in the park more others and to develop some requirements based on some perceived problems. Table 9 summarizes and organizes these issues within the conceptual mode. Three factors of the park environment are found as the main contributor to the perception and use of the parks in this study as presented in the table.

Table 9: Perceived qualities, problems and requirements in the parks

	Naturalness and landscape quality	**Facilities and furnishing elements**	**Social and cultural environment**
Positive quality	Lakes Dense green Spacious green carpet Fauna	Benches Art works playgrounds	Presence of much visitors
Problem	Too opened landscapes Tall trees that creates dark areas	Lack of cafes and toilets Lack of various sports and activity options Information inside parks No study areas	Less musical concerts Noise because of other users
Requirements	More trees Less managed nature	More activity options Cafes Study areas WIFI access	Musical events

To understand this table, it should be mentioned that there were almost two groups of students found in the study. The first group, a more ecologically oriented group, preferred unmanaged nature of Ledeboerpark and appreciated Van Heekpark more than Volkspark. This group tended to use parks for jogging, walking and exploring nature and perceived organized areas, like the central area in Ledeboerpark (fig. 17), to be artificial and therefore their main requirement was to let that area to have more natural and unmanaged setting.

The other group appeared to prefer the open landscapes and the pleasing environment of Volkspark; both its social and physical environment. They tended to visit the park mainly to engage in a range of activities and for more passive uses. They appeared to appreciate the landscape elements that would allow them to enjoy the views and they also appreciated the presence of playgrounds and sports fields. However, problems that were perceived by using the park have shaped their requirements for; more trees in the very opened areas especially the western part of Volkspark (fig. 18), more activity options and upgrading some sports facilities for some students, more events for other students and a café, convenient seating and study places for some students who would like to use the park for longer periods and for other uses like study.

6. CONCLUSION AND RECOMMENDATIONS

In order to enhance the use of the urban parks in Enschede by making them more attractive places, this study looked into the factors that influence tertiary students' preferences, choices, perceptions and use of these parks. To reach that main objective, three sub-objectives were identified; the first aimed at understanding the planning and management issues from a policy perspective while the other two aimed at understanding the factors behind students' preferences and choices of certain parks over others, and, their perceptions and use patterns inside a certain park. The study utilised a PGIS and qualitative approach in order to get deeper understanding of these complex and interrelated factors through capturing and visualizing students' views. In total 43 semi-structured interviews were conducted with students and 2 semi-structured interviews were conducted with policy makers and park managers.

The first two sections discuss the research objectives focusing on the main findings followed by a discussion on how the expected findings formulated in section 2.3.4 were achieved in the research. The fourth section discusses the limitations and strengths of this study concluding in the fifth section with the recommendations for further research to enhance the understanding of the preferences, choices, perceptions and use of urban parks and green spaces in Enschede and in other contexts.

6.1. Current issues in urban parks in Enschede

Since the city of Enschede is characterised by its long-standing parks that were created during the era of the textile industry, the interviewed policy makers realize the need of understanding of the current community needs in these parks. This is realized through the initiatives that the municipality launches (e.g. *de wijkbeheerplannen* and *de wijkbudgetten*) seeking the involvement of the community in the management of the public spaces, and parks among them. However, similarly to other international contexts, youth also are less active in these initiatives.

In fact, since Enschede has a considerable population of tertiary students and since one of the objectives of the regional agenda of Twente is to attract students and highly educated residents to the city and to the region, students are considered as a target group in the plans that aim at enhance the quality of life (Management Committee Regio Twente/ Netwerkstad, 2008). Therefore, involving tertiary students in the planning and management of green spaces in Enschede was realized by the interviewed policy makers to meet the objective of the regional agenda and to meet the lack of youth participation.

The main concern stated during the interviews was how to make the parks more attractive for users and non-users of students and of residents in general. Realizing parks as places to be used by students for more than recreation was mentioned by one of the contacted policy makers and a concept that motivated Volkspark management to introduce a wifi access in the park, which might help in hosting activities like studying or working in the park. Another concern relates to the recognized park themes; Ledeboerpark as nature and education park, Van Heekpark as sports park and Volkspark as arts and events; and whether users, tertiary students in this study, realize these themes or there are other characters and use of these parks out of these themes. Finally, more specific financial concerns in introducing facilities in Volkspark (e.g. sports facilities, cafe...), and the expressed safety concerns in the park due to the presence of youngsters were explained by the two interviewed members of the Volkspark management committee, reminding that, except for Volkspark and Van Heekpark, the other parks in the city are managed by the municipality of Enschede.

6.2. Main factors influencing preference, choice, perception and use

One of the objectives of the research was to understand what makes some students to be less or non-users of parks, what can encourage them, and what could make parks more attractive for more visits. These questions were also raised by the interviewed policy makers.

Main factors were found to influence the non-use behaviour among the interviewees could be categorized under the individual factors (section 5.2) rather than environmental factors. Mostly factors related to the availability of free time, in particular, with the living and studying responsibilities during weekdays and leaving the city in weekends for leisure or home, were the main influences. Other factors related to their preferences for recreating in other recreation options and the cultural habits in recreating appeared to influence some of them. This can suggest that interventions in the park environment might not have significant influence on attracting non-users of that group Indeed, when they were asked whether some facilities like internet, sports and even events would attract them, most of them again expressed no motivation even with existence of more activities and facilities and they even acknowledged that the city parks are pleasant and satisfactory.

For students who visit parks, the majority in the sample; distance to parks appeared to be the most influencing factor in determining the park that they use frequently. This finding contradicted one of the expected findings of this study (section 2.3.4). Based on a finding of a Danish study (Schipperijn et al., 2010) it was expected that since students are a mobile group and they live in close proximity to many parks in the city (fig. 6), distance would not be a significant factor on their choice for their park, rather, it was expected that they would choose to the park that best appeal to them. However, the choice of the closest park might be explained by the limited availability of free time that some students mentioned as the main reason for choosing the closest. This might be a reason in particular when there is no significant difference perceived between the main characteristics of the parks that the students in this sample visit mainly (Ledeboerpark, Volkspark and Van Heekpark), which makes them just choose the closest unlike the Danish study (section 4.2.2, table2; for an overview of the characteristics of case study parks) .

This finding confirms the mainstream recognition of the importance of proximity that most of the studies argue and base their studies on. Also, a factor that might increase the use of the parks is the proximity to other activity centres (e.g. health, sports and shopping centres), in agreement with previous studies, where parks can act as resting station or they can be accessible to many users of these activity centres. This suggests that spatial distribution of green spaces and parks still need to consider proximity to the urban users when supplied, even with the increased mobility of residents. In addition, locating parks near activity centres can be recommended to enhance the use of the parks.

Size of the park appeared as a significant factor influencing also the preferences and choices of certain parks. Although there is no significance difference in size between the most three visited parks (table 2), students who go for running chose Ledeboerpark and Volkspark over Van Heekpark, because of their bigger running routes. It can be discussed that it is not the park size per se that appeared to be significant, the diversity of activity options that bigger parks can host and the diversity of the nature experiences the bigger wild parks can offer, were the main explanations found in preferring and choosing bigger parks. Which might support that paying attention to a proper diversity in the experiences in parks might be as important as the size of the park in attracting users (G. Brown, 2008).

By focusing on the perception and use at the park level, two main group of students could be distinguished, in agreement with previous studies (Bell et al., 2008; Tyrväinen et al., 2003) . A more ecologically-oriented group and a group who is proponent for managed landscapes. The first group appeared to prefer and use Ledeboerpark more for its more natural and wild landscape in particular for

running, walking and sitting, in rare occasions. Their main appreciated qualities were the dense and unmanaged vegetation, unpaved routes and the wide animal meadows. For that group, they would not like to have more organised activities in the park, rather, the main requirement they mentioned was to keep the natural setting of the park, in particular the central part (fig. 17).

Indeed, the theme of Ledeboerpark as a nature and education park, according to the interviewed policy makers, appears in this sample to be well perceived. In fact, those students ,in particular, did not mind to travel longer distance to reach that park (Ledeboerpark), therefore, adopting slightly more natural management in the park ,in particular the central part, would not object the main theme of the park and might improve the satisfaction of that group of users.

The other group who found to prefer the more festive and pleasing parks appreciated the spacious clean grassland in Volkspark in providing them with the wide space for sitting, having picnic and gathering with friends around the lake. However, this group expressed more demand on facilities and activities. Small cafe or refreshment stands were required by many students who were discontent on having to go to the Centrum or having to bring their refreshments if they would sit or have a picnic in the park. This can support the intention stated by two managers of Volkspark who would like to provide such a facility.

Other facilities than costly sports facilities that may constitute a financial burden, as referred to during the interview with the park managers (Volkspark), might be afforded with less financial costs. Instead of creating new sports fields, maintenance for the existing basketball court or a more visible setting for the proposed soccer field might be satisfactory solutions for users who play sports there. However, it is recommended also to understand the views of other user groups in a larger sample.

The wishes of many students for having more events in Volkspark, in particular musical concerts, go in line with the park theme as an art and events park. They also go in agreement with stated intention of the park managers in attracting more events, upon the end of a contract with the neighbouring residents that undermine the current opportunity of hosting some kinds of events. It can be suggested then that hosting these events would positively affect the use of the park among many students.

In terms of other facilities, such as convenient and sheltered benches and internet, are mainly required by students who would like to stay for longer duration in the park, carrying out activities like reading, study or just relaxing. In fact, some students mentioned that these facilities would help them to stay longer, but mainly depending on the weather.

By observing the relatively lack of activities and trees in the western part of Volkspark and the negative perceptions associated with that part (fig.18), this location might be suggested as a potential area for events[4], new or upgraded facilities and activities, unless other user groups or other potential uses are occupying that area.

It can be said that, the themes of Volkspark as an art and event park, or as a park for people, appears also to be well perceived by its users in this sample. Except for one student, safety concerns mentioned by the park managers (section 4.3.3) appeared not to be perceived in the sample, on the opposite, some students appreciated the lively presence of users that improve their perception of safety and liveliness of the park.

Van Heekpark, although envisioned as sports park, very few students in the sample used it for sports in comparison with the majority who preferred to go for the more sports options in Volkspark. Almost no student mentioned that park as a park they travel to frequently either. It might be its relatively farther

[4] In particular as this area was utilized before in a musical event/concert (appendix7)

location than Volkspark from most of participants' residences one factor. Another factor can be its proximity to Ledeboerpark, the larger and more natural park, which made the park to be used by some students to only pass through on their way to Ledeboerpark. More investigation then might help in confirming such as pattern or might include more users of the park to understand their perceptions and requirements.

6.3. Expected findings of the research

It was expected that living and studying in a green environment would differentiate the preference and use of the parks. In this study, only one on-campus UT student referred to having green space in campus as a satisfactory substitution for going to parks. Regarding study, most of the few students who tried to study in a park are enrolled off-campus UT (ITC) while on-campus UT students referred most of the time to the campus facilities as good and suitable areas for study, and some referred to the campus green as an advantage that enables them of spending their study breaks in a green environment. However, more exploration to that issue is needed to reach a conclusion since very few students who referred to studying in parks and to utilising the campus green during their study.

It was also expected that certain social or physical characteristics might enhance the feeling of being alien, in particular for non-local students, which might affect their preference and use. Two students referred to the presence of local residents in Wooldrikspark as a less motivating factor in visiting the park. Other two students were less satisfied being not able to understand some landscape settings inside the parks. This might suggest an influence of the social and physical environment of the park, however, as noticed again very few students referred to this issue which again requires more investigation to reach a conclusion.

Since students appeared to use parks in groups, it was expected that facilities that foster group activities would be perceived as essential elements in parks. In fact, having picnics and barbeque parties with friends were mentioned quite often. Some students were found to prefer Rutbeek for having barbeque equipments according to one of the students; however, most of them appeared to manage carrying out these activities by themselves. Therefore having barbeque equipments were not mentioned as required facilities. However, facilities for team sports were required by some students, in particular by those who go to parks in groups in particular in Volkspark which might confirm that presence of group activities in parks might encourage such a group of users in visiting parks.

6.4. Strengths and limitations

The qualitative nature and the use of mapping exercise with participants allowed for better investigation and interpretation of some influences, problems and requirements that are usually omitted in quantitative studies.

For example, the unrealised soccer field by students who adapted a different area near the basketball field in Volkspark (fig.18) allowed for a suggestion for the park management to accentuate the proposed field for the users which would have been difficult to recognize using traditional quantitative surveys. Also, attributing underutilization of some sports facilities in a park, Volkspark, to the unavailability of a rental service for sports equipments and the underutilisation of other amenities due to the unawareness of their existence all gave a closer attention to more specific problems that may not have been revealed using quantitative approaches. By mapping liked and less liked areas in the parks, the exact areas that need more trees, more illumination or less management could be identified (figures 17 & 18). Also the used mapping and photo orientation allowed for a finer exploration of the favourite location and artistic design of the benches; (figures 17 & 18), which might guide site designers in choosing the right design and location of the benches in a way that appeal to the users to ensure its proper use (pps-b, 2013).

In capturing preferences and perceptions about places, Lynch and Hack (1985) recommended conducting on-site interviews while allowing the participants to photograph elements that they have certain impressions about for further discussions. They believed that on-site interviews allow for more evoked feelings, memories and experiences which finally enhance and enrich the discussions and the investigation of the place. In this study, the absence of on-site sample was a limitation. However, it can be justified with the timing of conducting the interviews. Since the interviews were conducted between the end of October and the beginning of December, the weather was either rainy or cold, so finding a student in a park in that time to conduct interview with was challenging.

6.5. Recommendations for further research

This section discusses recommendations for further follow-up this study and recommendations for further research on UGS preference studies.

6.5.1. Recommendations for follow-up this study

As aforementioned, on-site interviews are believed to enable capturing immediate and richer perceptions and therefore it is recommended to interview the park users inside parks with selecting a proper time for the interviews to guarantee their presence. For less frequent ,and non, users, using photos along with maps is recommended to facilitate orienting participants on the maps, however, a convenient interview sitting (e.g. indoors, having seating, etc) for participants is recommended for better and more elaborated discussions (group or individual). Also, more advanced approaches, like web-based PPGIS, can be utilised to facilitate and enhance the participation of younger groups in particular.

Issues like the influence of the campus green availability on the park use still needs to be investigated to reach a conclusion that might help in re-imagining park spaces for study related uses, especially when some off-campus students expressed a need for quiet study places in parks.

In this sample, non-use appeared to be influenced by individual factors; however, more investigation can be done to explore whether other environmental factors influence that behaviour. It is also recommended to focus on local students for that issue since they appeared in this sample, for cultural and lifestyle preferences, to be non-users of the city parks.

Despite being believed in many studies to have influence on UGS use, the social environment and the aesthetic quality of the surrounding urban environment did not appear to influence the choice or the use of parks. It might be by interviewing other user groups; in particular older and local residents, some issues related to the surrounding urban environment emerge as encouraging or discouraging factors from using parks and green spaces. By understanding these factors, further decisions can be taken to accentuate (or deal with) these encouraging (or discouraging) features of the environment. Also interviewing other user groups is recommended in order to capture their reactions to some of the suggested issues by students.

Among the case study parks, perception and use of Van Heekpark was the least captured due to the tendency of the students in this sample to either choose Ledeboerpark or Volkspark, therefore, it is recommended in a further study to give a more consideration for this park by conducting on-site interviews to ensure interviewing the users of this park. This would help in understanding how the park is used what are the problems and requirements; in particular when it was found in this study that this park is not realized for its theme "sports".

Since Enschede enjoys attractive surroundings that attract many users, other green spaces than the city parks are recommended to be considered in further research. In fact, one of the students referred to the

narrow cycling track and the occupation of water corporations for large areas in"woodland" near the UT campus as an unsatisfactory condition that might need the attention of further research.

In this study, students were only asked about their preference and choice between city parks and they were not asked to mention other green spaces. It might be that some of the non-users, in particular, have preferences for other green spaces and therefore parks are not visited when they would like to contact with nature. Therefore, for a clearer picture, it is recommended to ask participants, in particular non-users, whether they leave the city parks in favour of the surroundings (or other green spaces) for their more natural settings (or other characteristics), or whether they do not have contact with green spaces at all. This might help in making a proper environmental or social intervention that aim at attracting the non-users to visit green spaces that is believed to be crucial for health.

6.5.2. Recommendations for further research on UGS preference

The human responses to the built environment, in this case; preferences, choices, perceptions or use of UGSs, are shaped through interaction between their individual characteristics and the characteristics of that environment. In order to influences these responses, the influential individual and environmental factors should be first understood. In this study; the use of a socio-ecological model helped to disentangle these influences into individual, environmental factors at park level and at the urban context level which can help in making a proper intervention at proper dimension or level. Hence, better and more development and adaption of socio-ecological model can be recommended in further research on UGS preference studies which can help in a better identification of the nature of the influences and, in turn, the proper dimensions of interventions.

Also, by making use of current advances in PPGIS approaches, further research can look into developing methods that ensure a more effective participation and a real consideration of residents' preferences in UGS creation and management. How these preferences can be best communicated to policy makers and how can be effectively considered in the planning, design and management of UGSs to achieve the main objectives of studying communities' preferences in UGSs.

LIST OF REFERENCES

architectuurgidsenschede. (2012). Volkspark Retrieved 20th October, 2012, from http://www.architectuurgidsenschede.nl/Objecten/Volkspark/

Arnberger, A., & Eder, R. (2012). The influence of green space on community attachment of urban and suburban residents. *Urban Forestry & Urban Greening, 11*(1), 41-49. doi: 10.1016/j.ufug.2011.11.003

Bell, S., Hamilton, V., Montarzino, A., Rothnie, H., Travlou, P., & Alves, S. (2008). greenspace and quality of life:a critical literature review *greenspace scotland*: Edinburgh College of Art and Heriot-Watt University.

Bento, A. M., Franco, S. F., & Kaffine, D. (2011). Is there a double-dividend from anti-sprawl policies? *Journal of Environmental Economics and Management, 61*(2), 135-152. doi: 10.1016/j.jeem.2010.09.002

Brown, G. (2008). A Theory of Urban Park Geography. *Journal Of Leisure Research,, 40*(4).

Brown, G., & Weber, D. (2011). Public Participation GIS: A new method for national park planning. *Landscape and Urban Planning, 102*(1), 1-15. doi: 10.1016/j.landurbplan.2011.03.003

Brown, T., & Bell, M. (2007). Off the couch and on the move: Global public health and the medicalisation of nature. *Social Science & Medicine, 64*(6), 1343-1354. doi: http://dx.doi.org/10.1016/j.socscimed.2006.11.020

Bryman, A. (2012). *Social research methods*. Oxford :: Oxford University Press.

Bullock, C. (2005). Greenspace Final Report *Greenspace Project*.

Burgess, J., Harrison, C. M., & Limb, M. (1988). People, Parks and the Urban Green: A Study of Popular Meanings and Values for Open Spaces in the City. *Urban Studies, 25*(6), 455-473. doi: 10.1080/00420988820080631

Chen, B., Adimo, O. A., & Bao, Z. (2009). Assessment of aesthetic quality and multiple functions of urban green space from the users' perspective: The case of Hangzhou Flower Garden, China. *Landscape and Urban Planning, 93*(1), 76-82. doi: 10.1016/j.landurbplan.2009.06.001

Chiesura, A. (2004). The role of urban parks for the sustainable city. *Landscape and Urban Planning, 68*(1), 129-138. doi: 10.1016/j.landurbplan.2003.08.003

Choumert, J., & Salanie, J. (2008). Provision of urban green spaces: Some insights from economics. *Landscape Research, 33*(3), 331-345. doi: 10.1080/01426390802045996

courtsoftheworld. (2012). Retrieved 25th October, 2012, from http://www.courtsoftheworld.com/Germany/Berlin/P-s-Basketballcourt

del Saz Salazar, S., & García Menéndez, L. (2007). Estimating the non-market benefits of an urban park: Does proximity matter? *Land Use Policy, 24*(1), 296-305. doi: 10.1016/j.landusepol.2005.05.011

Dunnett, N., Swanwick, C., & Woolley, H. (2002). Improving Urban Parks, Play Areas and Open Spaces: Department of Landscape, University of Sheffield.

Enschede Promotie. (2012). Retrieved 5th October, 2012, from http://www.studyinenschede.com/

Fincher, R., Carter, P., Tombesi, P., Shaw, K., & Martel, A. (2009). Transnational and temporary: students, community and place-making in central Melbourne-Final Report Summary: University of Melbourne

Fincher, R., & Shaw, K. (2007). Recognising tertiary students in place-making for urban space. *Proceedings of the State of Australian Cities National Conference 2007 (SOAC)*, 1021-1033. Retrieved from http://www.findanexpert.unimelb.edu.au/display/publication86729

Fincher R., & Shaw, K. (2009). The unintended segregation of transnational students in central Melbourne. *Environment and Planning A, 41*(8), 1884-1902. doi: 10.1068/a41126

Francis, J., Giles-Corti, B., Wood, L., & Knuiman, M. (2012). Creating sense of community: The role of public space. *Journal of Environmental Psychology, 32*(4), 401-409. doi: 10.1016/j.jenvp.2012.07.002

Francis, M. (1989). Control as a dimension of public-space quality. *Public Places and Spaces, Plenum Press, New York*, 147-172.

Garcia-Ramon, M. D., Ortiz, A., & Prats, M. (2004). Urban planning, gender and the use of public space in a peripherial neighbourhood of Barcelona. *Cities, 21*(3), 215-223. doi: 10.1016/j.cities.2004.03.006

Gemeente Enschede-a. (2012). Jij maakt de buurt Retrieved 25th October, 2012, from http://www.jijmaaktdebuurt.nl/

Gemeente Enschede-b. (2012). Enschede International City of Knowledge. In Gemeente Enschede (Ed.).

Gidlöf-Gunnarsson, A., & Öhrström, E. (2007). Noise and well-being in urban residential environments: The potential role of perceived availability to nearby green areas. *Landscape and Urban Planning, 83*(2–3), 115-126. doi: 10.1016/j.landurbplan.2007.03.003

Giles-Corti, B. (2006). People or places: What should be the target? *Journal of Science and Medicine in Sport, 9*(5), 357-366. doi: 10.1016/j.jsams.2006.06.021

Giles-Corti, B., Broomhall, M. H., Knuiman, M., Collins, C., Douglas, K., Ng, K., . . . Donovan, R. J. (2005). Increasing walking: How important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine, 28*(2, Supplement 2), 169-176. doi: http://dx.doi.org/10.1016/j.amepre.2004.10.018

Gobster, P. H., & Westphal, L. M. (2004). The human dimensions of urban greenways: planning for recreation and related experiences. *Landscape and Urban Planning, 68*(2–3), 147-165. doi: 10.1016/s0169-2046(03)00162-2

Grahn, P., Stigsdotter, U., & Berggren-Bärring, A.-M. (2005). eight experienced qualities in urban open spaces. *Final report of COST action C11.240*, 2005.

Handy, S. L., & Niemeier, D. A. (1997). Measuring accessibility: an exploration of issues and alternatives. *Environment and Planning A, 29*(7), 1175-1194.

Hawthorne, T., Dougherty, M., Elmes, G., Fletcher, C., McCusker, B., Pinto, M., & Weiner, D. (2006). Beyond the Public Meeting: Building a Field-Based Participatory GIS for Land Use Planning in Monongalia County, West Virginia *Collaborative Geographic Information Systems* (pp. 43-65): IGI Global.

Hawthorne, T., Krygier, J., & Kwan, M.-P. (2008). Mapping ambivalence: Exploring the geographies of community change and rails-to-trails development using photo-based Q method and PPGIS. *Geoforum, 39*(2), 1058-1078. doi: 10.1016/j.geoforum.2007.11.006

Hershberger, R. G., & Cass, R. C. (1988). Predicting user responses to buildings. *Environmental Aesthetics: Theories, Research, and Applications*.

hetrutbeek. (2013). Retrieved 30th January, 2013, from http://www.hetrutbeek.nl/

Holdem, A. (2008). *Environment and Tourism: Second Edition*: Routledge.

James, P., Tzoulas, K., Adams, M. D., Barber, A., Box, J., Breuste, J., . . . Ward Thompson, C. (2009). Towards an integrated understanding of green space in the European built environment. *Urban Forestry & Urban Greening, 8*(2), 65-75. doi: 10.1016/j.ufug.2009.02.001

Jansson, M., & Lindgren, T. (2012). A review of the concept 'management' in relation to urban landscapes and green spaces: Toward a holistic understanding. *Urban Forestry & Urban Greening, 11*(2), 139-145. doi: 10.1016/j.ufug.2012.01.004

Jim, C. Y., & Shan, X. (2012). Socioeconomic effect on perception of urban green spaces in Guangzhou, China. *Cities*(0). doi: http://dx.doi.org/10.1016/j.cities.2012.06.017

Jorgensen, A., & Anthopoulou, A. (2007). Enjoyment and fear in urban woodlands – Does age make a difference? *Urban Forestry & Urban Greening, 6*(4), 267-278. doi: http://dx.doi.org/10.1016/j.ufug.2007.05.004

Kaczynski, A. T., Potwarka, L. R., & Saelens, B. E. (2008). Association of Park Size, Distance, and Features With Physical Activity in Neighborhood Parks. *American Journal of Public Health, 98*(8), 1451-1456. doi: 10.2105/ajph.2007.129064

Kaźmierczak, A. (2013). The contribution of local parks to neighbourhood social ties. *Landscape and Urban Planning, 109*(1), 31-44. doi: http://dx.doi.org/10.1016/j.landurbplan.2012.05.007

Kienast, F., Degenhardt, B., Weilenmann, B., Wager, Y., & Buchecker, M. (2012). GIS-assisted mapping of landscape suitability for nearby recreation. [Article]. *Landscape and Urban Planning, 105*(4), 385-399. doi: 10.1016/j.landurbplan.2012.01.015

Kuttler, W., & Strassburger, A. (1999). Air quality measurements in urban green areas – a case study. *Atmospheric Environment, 33*(24–25), 4101-4108. doi: 10.1016/s1352-2310(99)00151-x

Lachowycz, K., & Jones, A. P. (2012). Towards a better understanding of the relationship between greenspace and health: Development of a theoretical framework. *Landscape and Urban Planning*(0). doi: http://dx.doi.org/10.1016/j.landurbplan.2012.10.012

Laing, R., Davies, A. M., Miller, D., Conniff, A., Scott, S., & Morrice, J. (2009). The application of visual environmental economics in the study of public preference and urban greenspace. *Environment and Planning B: Planning and Design, 36*(2), 355-375.

Last, T. (2004). De waardering van groen in Enschede - Resultaten van de Stadspeiling 2003: I&O Research.

Lo, A., & Jim, C. Y. (2010). Differential community effects on perception and use of urban greenspaces. *Cities, 27*(6), 430-442. doi: http://dx.doi.org/10.1016/j.cities.2010.07.001
Lo, A., & Jim, C. Y. (2012). Citizen attitude and expectation towards greenspace provision in compact urban milieu. *Land Use Policy, 29*(3), 577-586. doi: http://dx.doi.org/10.1016/j.landusepol.2011.09.011
Luymes, D., & Tamminga, K. (1995). Integrating public safety and use into planning urban greenways. *Landscape and Urban Planning, 33*(1-3), 391-400.
Lynch, K. (1971). *Site planning* (Second edition ed.). Cambridge etc.: MIT press.
Lynch, K., & Hack, G. (1985). *Site planning*. Cambridge, Mass.: MIT.
Mahmoud, A. H., & El-Sayed, M. A. (2011). Development of sustainable urban green areas in Egyptian new cities: The case of El-Sadat City. *Landscape and Urban Planning, 101*(2), 157-170. doi: 10.1016/j.landurbplan.2011.02.008
Management Committee Regio Twente/ Netwerkstad. (2008). *international agenda of twente*. Twente / Brussels: Retrieved from http://www.regiotwente.nl/archief/images/stories/internationaal/english__deutsch/internationale_agenda_van_twente_gb.pdf.
McFarland, A. L., Waliczek, T. M., & Zajicek, J. M. (2010). Graduate Student Use of Campus Green Spaces and the Impact on Their Perceptions of Quality of Life. *HortTechnology, 20*(1), 186-192.
Mieszkowski, P., & Mills, E. S. (1993). THE CAUSES OF METROPOLITAN SUBURBANIZATION. *Journal of Economic Perspectives, 7*(3), 135-147.
Neema, M. N., & Ohgai, A. (2010). Multi-objective location modeling of urban parks and open spaces: Continuous optimization. *Computers, Environment and Urban Systems, 34*(5), 359-376. doi: 10.1016/j.compenvurbsys.2010.03.001
Newman, O. (1972). *Defensible space; crime prevention through urban design*: Macmillan.
Northeasttrees. (2013). Green Space Plan - A Culver City Parks Planning Project Retrieved 30th January, 2013, from http://www.northeasttrees.org/Culver-City-Green-Space-Plan.asp
Oguz, D. (2000). User surveys of Ankara's urban parks. *Landscape and Urban Planning, 52*(2–3), 165-171. doi: 10.1016/s0169-2046(00)00130-4
Oxford Dictionaries. (Ed.) (2012). Oxford University Press.
Parkeninenschede. (2012). Parken in Enschede Retrieved 7th August, 2012, from http://www.parkeninenschede.nl/
pps-a. (2012). PPS' Approach to Parks Retrieved 15th October,2012, from http://www.pps.org/reference/approach-4/
pps-b. (2013). Benches Retrieved 30th January, 2013, from http://www.pps.org/reference/benches/
Rodrigues, F. (2001). Villa-Lobos Park Retrieved January 20th, 2013, from http://www.braziltravelbuddy.com/Sao_Paulo/park/Villa-Lobos_Park
Sanesi, G., & Chiarello, F. (2006). Residents and urban green spaces: The case of Bari. *Urban Forestry & Urban Greening, 4*(3–4), 125-134. doi: 10.1016/j.ufug.2005.12.001
SAUL. (2006). The Vital Role Of Sustainable And Accessible Urban Landscapes In Europe's City Regions *Vital Urban Landscape*.
Schipperijn, J., Stigsdotter, U. K., Randrup, T. B., & Troelsen, J. (2010). Influences on the use of urban green space – A case study in Odense, Denmark. *Urban Forestry & Urban Greening, 9*(1), 25-32. doi: 10.1016/j.ufug.2009.09.002
Seeland, K., Dübendorfer, S., & Hansmann, R. (2009). Making friends in Zurich's urban forests and parks: The role of public green space for social inclusion of youths from different cultures. *Forest Policy and Economics, 11*(1), 10-17. doi: 10.1016/j.forpol.2008.07.005
Skärbäck, E. (2007). Planning for healthful landscape values. In Ü. Mander, H. Wiggering & K. Helming (Eds.), *Multifunctional Land Use* (pp. 305-326): Springer Berlin Heidelberg.
Stigsdotter, U., & Grahn, P. (2002). What Makes a Garden a Healing Garden? *Journal of Therapeutic Horticulture, Vol 13*, 60-69.
Swanwick, C. (2009). Society's attitudes to and preferences for land and landscape. *Land Use Policy, 26, Supplement 1*(0), S62-S75. doi: 10.1016/j.landusepol.2009.08.025
Tsutsumi, J., & K. O'Connor. (2006). International Students and the Changing Character of the Inner Area of a City:A Case Study of Melbourne. *Second State of Australian Cities National Conference* Retrieved from http://www.findanexpert.unimelb.edu.au/display/publication56986

Tyrväinen, L., Mäkinen, K., & Schipperijn, J. (2007). Tools for mapping social values of urban woodlands and other green areas. *Landscape and Urban Planning, 79*(1), 5-19. doi: 10.1016/j.landurbplan.2006.03.003

Tyrväinen, L., Silvennoinen, H., & Kolehmainen, O. (2003). Ecological and aesthetic values in urban forest management. *Urban Forestry & Urban Greening, 1*(3), 135-149. doi: 10.1078/1618-8667-00014

United Nations Population. (2005). World Urbanisation Prospects: The 2005 Revision Retrieved 18th August, 2012, from http://www.un.org/esa/population/publications/WUP2005/2005wup.htm

Van Herzele, A., & Wiedemann, T. (2003). A monitoring tool for the provision of accessible and attractive urban green spaces. *Landscape and Urban Planning, 63*(2), 109-126. doi: 10.1016/s0169-2046(02)00192-5

van Vianen, M. (2010). *Park as jardin publique: "building"a community : a design recommendation for Wesselerbrinkpark as multicultural social meeting place*. [s.l.: s.n.].

Veitch, J., Bagley, S., Ball, K., & Salmon, J. (2006). Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health & Place, 12*(4), 383-393. doi: 10.1016/j.healthplace.2005.02.009

Ward Thompson, C., Aspinall, P., Bell, S., & Findlay, C. (2005). "It Gets You Away From Everyday Life": Local Woodlands and Community Use--What Makes a Difference? *Landscape Research, 30*(1), 109-146. doi: 10.1080/0142639042000324794

Wegstapel, J., & Kalisvaart, B. (2010). Thuis, op de campus of in de stad; Een onderzoek naar studentenhuisvesting in Enschede.

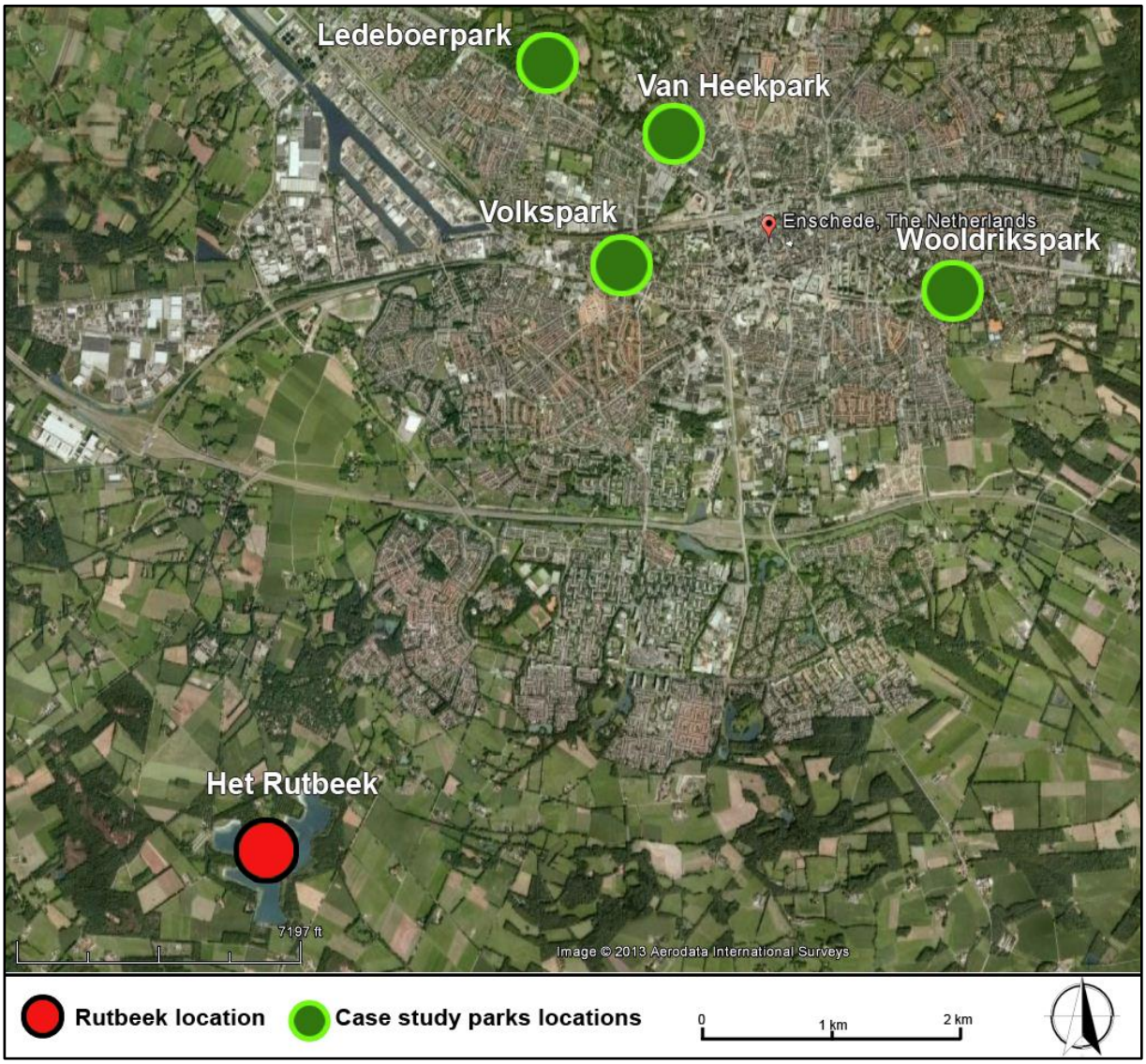
Werquin, A. C., Duhem, B., & Lindholm, G. (2005). *COST Action C11, Green Structure and Urban Planning: Final Report*: COST.

Wong, N. H., & Yu, C. (2005). Study of green areas and urban heat island in a tropical city. *Habitat International, 29*(3), 547-558. doi: 10.1016/j.habitatint.2004.04.008

Wright Wendel, H. E., Zarger, R. K., & Mihelcic, J. R. (2012). Accessibility and usability: Green space preferences, perceptions, and barriers in a rapidly urbanizing city in Latin America. *Landscape and Urban Planning, 107*(3), 272-282. doi: 10.1016/j.landurbplan.2012.06.003

APPENDICES

Appendix 1: Location of the Rutbeek Park and the city parks; particularly, the case study parks



Rutbeek is a recreational park, previously a mining and pasture fields, is located on the southwest of Enschede. The park has a large lake with 5 beaches with sunbathing areas and around an area of 34 ha. of forests. It provides spots for barbeque, an events area, paved routes for biking and hiking trails. Also fishing and swimming activities are allowed in the lake along with many other sports and recreation options. Also, the park has toilet facilities and refreshment kiosks and stand-outs to serve the park visitors (hetrutbeek, 2013).

Appendix 2:

Semi-structured Interview schedule for students on the factors affecting their preferences, choices, perceptions and use of parks in Enschede

- **Demographic information** (Age, gender, study grade, nationality, place of living, length of living)

- **Use of parks**

- Do you visit parks here?
- Which park/parks do you visit?
- Which one/ones do you visit most?
- How often do you visit this/these park(s) and with whom do you visit the park(s)?
- How do you travel to the park?
- Where do you spend most of your time there doing which activities (on map)?
- What (and where) do you like most in this/these park(s)?
- What (and where) do you dislike in this/these park(s)?

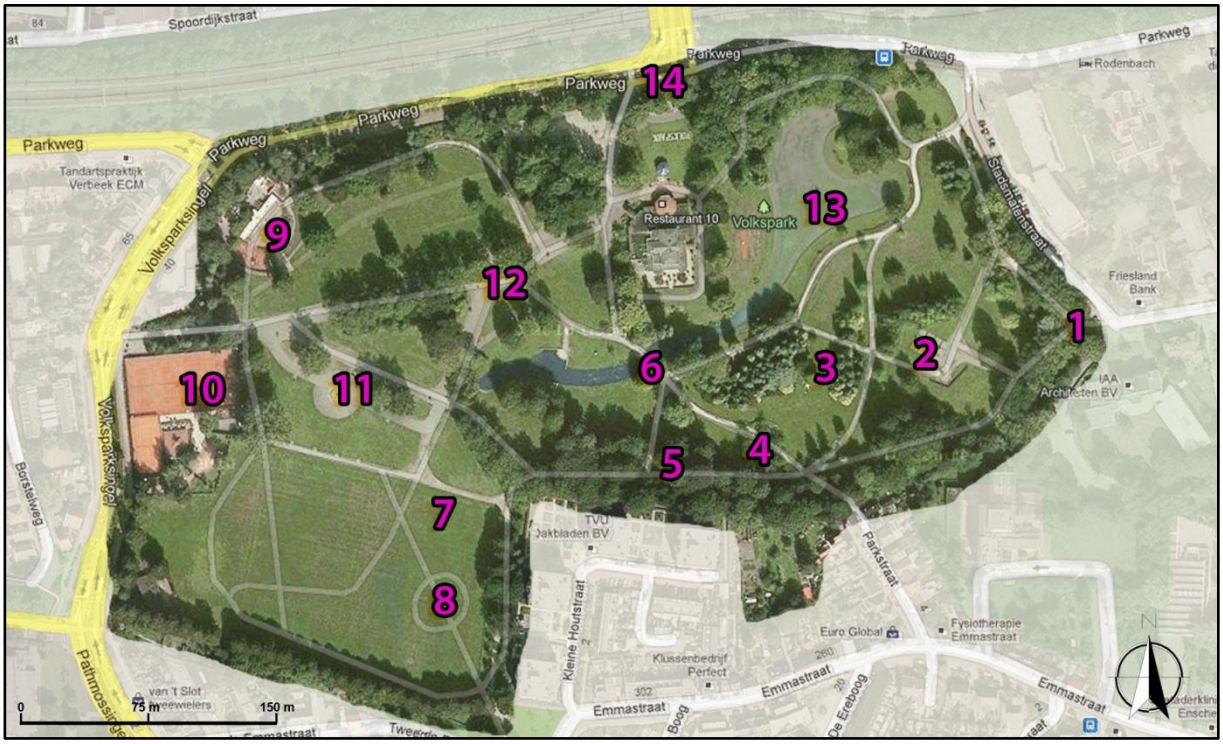
- **Improve the park**

- What could be done to make it more attractive and to be more satisfied with the park (or what lacks the park /or what do you miss in the park, *e.g. activities, facilities, landscape elements…)?*
- What about studying in the park, if a WIFI access is provided in the park would you use it more or would you study there and why *(other facilities still needed, like coffee or vending machines, toilets, seats,….)?*

- **Choice of the park (preferred and most visited park)**

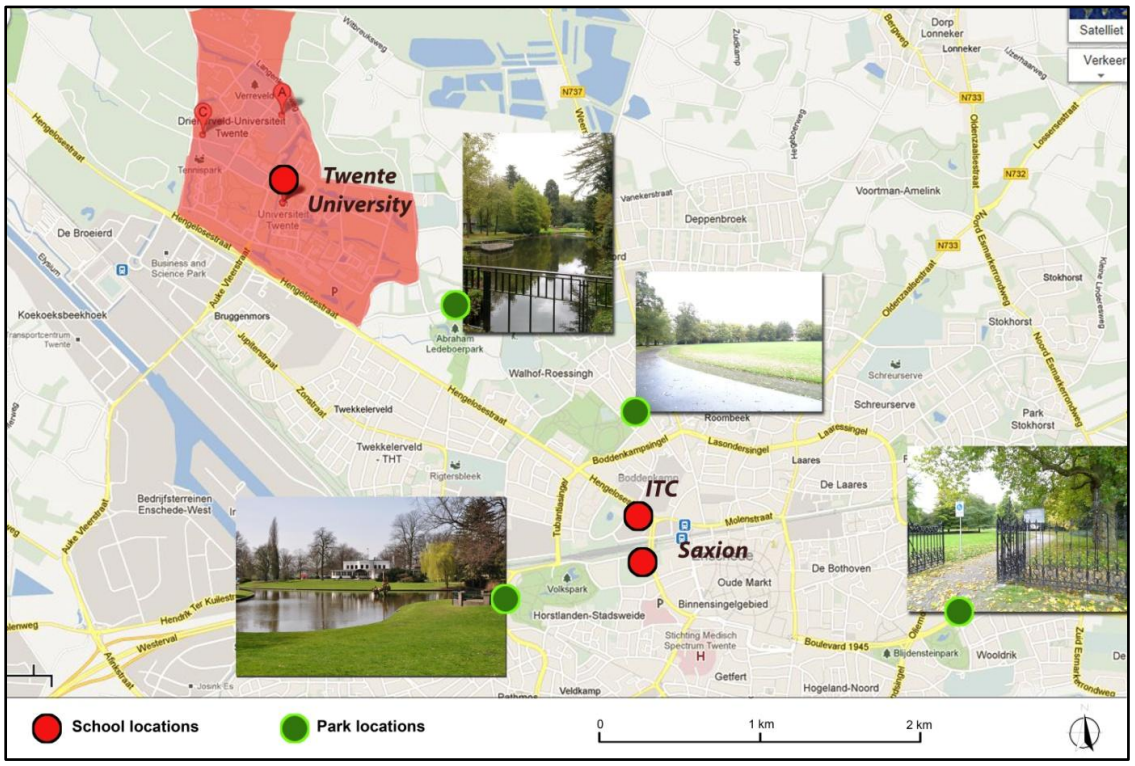
- What about other parks, which parks do you know or (you have visited even for once)?
- Why do you currently visit this park the most *(e.g. closest park, attractive, its social environment...)?*
- So if all parks in the city were located at the same distance form you who one would you visit most? (Or/ which one did you like most? And why?

Appendix 3: Map and poster of Volkspark; used during the interviews

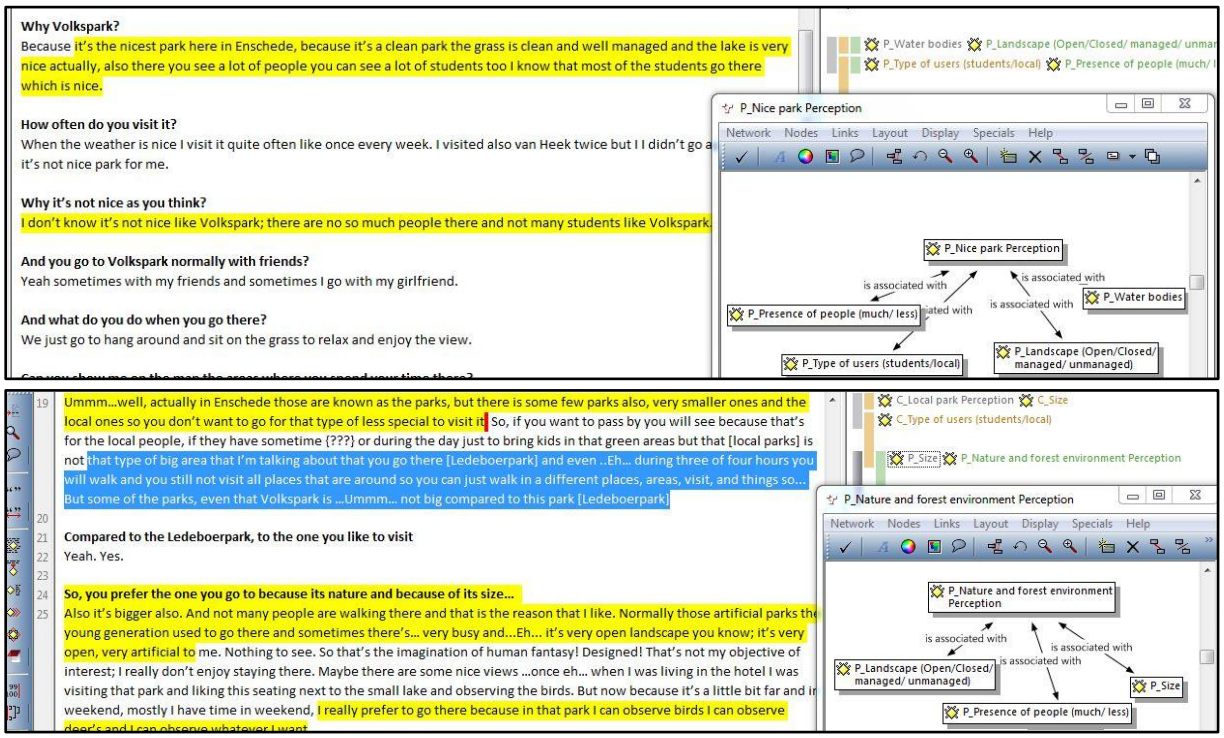


Source: Photo no. 11; (Parkeninenschede, 2012); photo no.12; (courtsoftheworld, 2012) , photo no.13,(architectuurgidsenschede, 2012); other photos; researcher

Appendix 4: Map indicates the location of the case study parks and the three educational institutions; used during the interviews

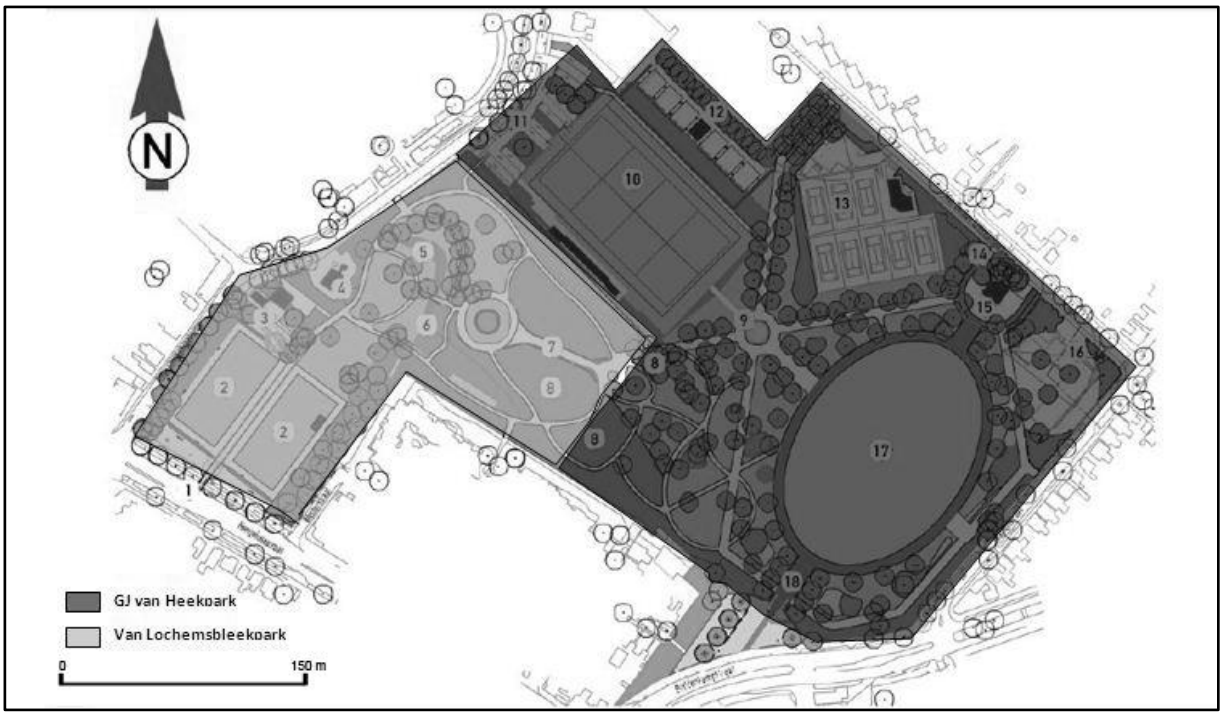


Appendix 5: coding textual information using Atlas ti.



Certain characteristics of the park environment; both social and physical; led those two students to perceive and prefer the parks differently. While presence of more people and the managed landscape of Volkspark were perceived positively by a student who prefers festive parks, the other student appreciated the presence of less people and preferred the wilder environment of Ledeboerpark that is enhanced through its large and unmanaged vegetation.

Appendix 6: Map indicates the area of Van Heekpark (before 1928) and Van Lochemsbleekpark.



Source: (Parkeninenschede, 2012)

Appendix 7: Map indicates the areas utilized for events in Volkspark, mapped by the interviewed managers of Volkspark