Analysis of Lumière Park : Uses and perceptions

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Program: Bachelor – 4 IUA

Date: 11 / 01 / 2019

Place of Publication: Almere

Name of Thesis coach: Istvan Boros

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Preface and Acknowledgements

This report was written by Robin Foraison, a 4th year student in the University of Applied Sciences in Almere. This thesis research is the final proof of proficiency of the graduation phase of my Bachelor study. It is a shared study program between the Institute of Genech in France and the University of Almere in Netherlands . ITHS module is composed of a written report and an oral presentation that allows students to be graduated at a European level.

I would like to thank a number of people who helped me in achieving this report. First of all, my thesis coach who has provided me precious advice during this research process and also my friends and my family who have supported me writing this report.

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Summary :

Green urban parks play an important role in the urban environment nowadays as they are providing a lot of ecosystem service, improve health and well-being of the population and mitigate effect of climate regulation. Therefore a green space is a place that will be loved and used if it is frequented by different kind of people during the day and over the year.

This study takes a look at the Project for Public space in the first time for the city of Almere and Lumière Park and tries to determine if the key attribute for a good public place may have an influence on the perception visitors have of the place.

Using desk research, observation survey and questionnaire analysis, this paper give an overview on the different users of the park and what are the different activities performed during visitation of the park. Thanks to this analysis, this study determine how it is possible to enhance use of Lumière Park by attracting more visitors.
The results show that people using Lumière Park are not representative of the population of the district and have self-estimated the determinant attribute for a public place. It highlights the different improving point for the municipality, as for example to diversify uses and activity around this place and create a real social link in this place.

Project for Public places and Placemaking tools can be used by the municipality of Almere to improve the quality of the Park. However, this study did not collect enough data thanks to questionnaire to have a clear representation on the perception findings as the number of respondents is an issue. Lumière Park must be a more dynamic green place, that benefit from the constant flows of visitors passing throughout it.

In order for this study to be more far-reaching, we can advise to carry out this study on a larger scale of time in order to obtain more significant results and to compare these studies with other Almere parks, to see how these factors influences the decision of the visitors and not just have an appreciation of these indicators.

PPS seams to be an essential tool to analyze visitors behaviors and develop a vision and strategies that can help improving this green urban park.

1 - Introduction

The current world population 7,7 billion is expected to reach 8,9 billion by 2030. There will be 2 more billion people to feed and home, and most of them are going to live in big cities (United Nation, 2016).

By 2030, 60% of the world population is expected to live in an urban area and this number is even higher in Europe with a proportion of 75% (World Bank, 2013). Cities continue to grow and attract people as they are centres of economic growth, providing jobs, opportunities and innovation.

Cities are impacted by this demographical change, as evidenced by urban sprawl. They spread out over natural spaces and surrounding farmland to build new districts and neighborhoods. Urban sprawl has progressively changed our lifestyles and behaviors (Haaland et al., 2015). Our relationship to food has also been altered with an increased distance between production and consumption places, increasing pressure on farmland to respond demand with the use of pesticides and chemicals, and a general processed and packaged food industry (Janine de la Salle & Mark Holland, 2015, p. 14).

It has also created a car use dependency and has increased fossil fuel consumption. Urban sprawl is related to the negative impacts often attributed to traffic congestion, loss of open spaces, and increased pollution (Sutton, 2003 ; Blanco et al., 2009). It increases greenhouse gases emissions and contributes to the negative environmental impact of cities around the world, with a high augmentation of transport-related CO_2 emission (Bart, 2010).
Dense urbanization is also playing with limits that planet earth can overpass. Both of them are participating in global warming that multiples extreme meteorological phenomenon and natural disasters. They increase pollution because cities are based upon linear production systems, that is the reason why “Cities are consuming a great amount of energy and resources and are producing a lot of waste and pollutants” (United Nations, 2016).

Floods and droughts are particularly important issues that urban population have to face nowadays. 82% of cities are at high risk exposure to at least one natural disaster and face high-risk of mortality associated with them (Bowler, et al. , 2000).

Finally, dense urbanization and urban sprawl are a threat for biodiversity because they disrupt ecosystems that increase effect of climate change (Savard, et al., 2000).

In order to mitigate effects of climate deregulation, improve general quality of life and well-being of urban citizens, urban designers and planners want to preserve and introduce more vegetation into this grey area. Greening our city has an effect on human health and helps prevent chronical diseases such as obesity, type 2 diabetes, chronical stress and cancer generated by our contemporary urban lifestyle(Eid et al., 2008). Natural environments help also increase well-being and self-reported health, restore cognitive functions and facilitate stress restoration. (Pálsdóttir et al. , 2018).

In general terms, we can say that urban nature provides residents both emotional and physical benefits because they offer amenities for relaxation, physical activities and social activities. There is evidence from previous studies that natural environments (or green spaces), such as urban parks, forests and natural areas, are important restorative environments for urban dwellers (Barton & Pretty, 2010).

Green infrastructures and vegetation in urban area also help reduce several urban problems and provide many ecosystem services. Green space may filter air, remove pollution, attenuate noise, cool temperatures, infiltrate stormwater, and fill groundwater; moreover, it can provide food (Ekkel & de Vries, 2017). For example, green vegetation may help decrease air pollution with filtration of thin particles emission and absorption, storage and sequestration of carbon. It also provides shape in the city mitigating effect of heat wave in Europe and decreasing urban heat island effect, which is an increase of temperature in urban dense area (Soltani & Sharifi, E., 2017).

“Both quantity and quality of urban parks are increasingly recognized as important for the quality of urban life regarding a wide range of benefits and ecosystem services” (Robert & Yengué, 2017).

Urban green spaces such as park, forests, community gardens or green rooftops provide critical ecosystem services that we can benefit from and promote physical and mental health by promoting physical activities and highly participate to enhance quality of life of urban dwellers (Bertram & Rehdanz, 2015).

Public parks have always been an important component in an urban area as they are developed for relaxation and recreation and has always been part of our life. Considered as the lungs of our cities, parks have always been associated with the history and culture of a city. They are an unconditional place of public space allowing many social opportunities (The value of public places, 2003, p. 12).
In addition, they also have an important economic interest because they allow to create new centers of activities and have revitalized some neglected areas of our cities, as we saw for example with the High Line Project in New York City. Parks and other spaces play a role in the attractiveness of the territory and in many cases reduce social and environmental inequalities.

Experts estimate that it takes five minutes to feel the benefits of a green space if it is well designed. Many guides help urban developers make these parks efficient from a social, environmental and economic point of views such as the Project for Public Places initiated by Fred Kent and Kathy Madden (2008). It aims to analyze people’s behavior in a particular public space and to find out how this place could be improved. Unfortunately, a high number of park around the world are not so much used by citizens and do not attract people anymore. It’s an important problem for cities and communities because if a place is not used, it will cease to be valued. Indeed green spaces of quality will be more inclined to attract visitors and occupants. In spite of the potential benefits, some studies indicate that some parks lack visitors while others are used quite extensively (Sakip et al., 2013).
If the community is expert in judging urban development, how do people choose to visit some parks rather than others?

In studying about the user and activities that contribute to a successful public park , one could not ignore the fact that it is closely related to the user perceptions and needs. One of the key principle to transform a park into a good public place is to observe and measure people uses and perception of the park. Previous studies highlighted different factors that influence the use of a green space and analyzed people behaviors as in Sweden with a national study led by J. Schipperijn in 2015 or in Malaysia with a study research made on six public park by S. Sakip in 2015.

However, no research studies or scientific publications were found about the influence of these factors on people use and perception of a Park in Netherland and more especially in the city of Almere. This study concentrates on the Lumière Park case located in the city of Almere and try to answer the following research question: how determinant key factors for a good public space influence people uses and perceptions of the Park?

This study looks at the Project for Public Space (PPS) in the context of Lumière Park for the first time in the literature. Lumière Park is an interesting study park because it is located in Almere Stad, the most attractive and dynamic green space in this district of the city.

Indeed a little is known about the different uses and the perception citizens have of the Park and what is their vision for the future of it. Based on observation and survey, this study wants to describe the vision citizens have of this public place and how it is possible to enhance it.

This study tries to determine what are the determinant factors involved in the creation of a good pubic space based on the four key attributes of Placemaking by Project For Public Spaces (PPS) that became the base of this research.

Firstly, this study tries to determine who are the different users of Lumière Park and what kind of activity do they performed in this green spot . Based on the observation and surveys, this paper examines how can we categorize the uses people have of a park and who are the different users of the Lumière Park.

Secondly , this study analyzes the different perception and the vision the users and non-users have of this Park. Most of the time, perception are influenced by age, gender, religion and social condition and attitudes toward public park may differ from one person to another. (Korpela et al., 2014).

Finally, this study is exploring the correlation between the perception of the users and the use they have of it, and thanks to feedback of users try to answer the last sub- question that is: how to improve the uses and perception users have of the Park.

One public park is involved in this study which is Lumière Park in Almere. This study is using questionnaire and survey to determine the influence of the determinant factors that contributes to influence uses and perception . The general context of the study will be more developed in the second part of this paper, providing information about the targeted park , and description of the research method and data analysis.

The three sub- questions are :

- What are the different uses and users of the Lumière Park?
- How citizens of Almere perceived this Park?
- What is the correlation between the uses and perceptions?

2 - Proposed material and methods

2- 1 Methodology

Project For Public Spaces (PPS)

This study is based on the Project for Public Spaces to analyze the vision and uses of Lumière Park. PPS is based upon the work of W. H. Whytte, a pioneer in understanding how people use public spaces in the early '60s. PPS also feet with Jane Jacobs' vision of a public space. "They will be well used and loved if they are used on many different moments during the day and evening and by different groups of people in many different ways" (Jane Jacobs, Life and Death of Great American Cities). There are sharing the main same idea, where a community is the expert in judging of a quality of a public space.

The PPS aims to analyze the behavior of the people who are present at a specific location and to find out how that place could be improved. One of the elements of these ideas is the value of the local community of people who live near and use a place.

PPS researchers have found the following qualities, to create a successful place:

- the place must be accessible for everyone
- people must performed activities
- this place must be comfortable and have a good image
- it must be a sociable place where people can meet each other's

In relation with qualities required for a good, the main four determinant indicators analyzed in this study are :

- Access and Linkages (AL)
- Comfort and Image (CI)
- Uses and Activities (UA)
- Sociability (S)

2 – 2 Questions and sub-questions

The main research question is : how determinant key factors for a good public space influence people use and perceptions of the Park?

Coming from this main research question, the three sub question of the study are:

➔ What are the different uses and users of the Lumière Park ?
➔ How citizens of Almere perceived this Park ?
➔ What is the correlation between the uses and perceptions ?

Sub- Questions	**Related questions**
➔ What are the different uses and users of the Lumière Park ?	Who are users of Lumière Park?
	What kind of activities do they practice?
	What is the frequency of use and reason for visiting the Park?
➔ How citizens of Almere-Stad perceived this Park ?	What are user's perception about accessibility of the Park?
	What are user's perception about comfort and Image of the place?
	What are users' perception about use and activities?
	What are user's perception about sociability?
➔ What is the correlation between the uses and perceptions ?	Is there a different of perception between users and non-users?
	How different demographic background are influence by the perception of the Park?

	How to increase use of the park and improve it, using community vision and feedbacks?

In order to answer the main research question : how key determinant factors influence the use and perception of Lumière Park, this study try to answer three sub-questions.

➔ What are the different uses and users of the Lumière Park ?

The first main question is looking at the different people using the Park. It's an essential part of the study to understand who are the users of the Park, and what kind of activities they perform during their visit. To have an objective perception of people using the Park, observation is the easiest way to collect data and have a clear view of the context. In a first time, this research focusses on the different users of the park and determine what is the age of people using it, are they male or female and do they live far from the lumière Park and how long and how often do they use this place ?

In a second time, observation can be used to depict how citizens use the Lumière Park and what kind of activities do they perform. These uses can be classified easily into broad categories such as walking, sports activities, recreational activities, just passing through , to visit or others (photography).

Then the study wants to analyze the reason why these people are using this park. This information cannot be obtained with just a simple observation. So a questionnaire will be administrated by face to face interview to understand it. This questionnaire will be developed in the next part of research and methods

Finally, to have a clear view of the situation, a spatial analysis of the Lumière Park is needed in order to understand how density, unicity and the mix of functions surrounding the Park influence uses of the Park itself. Density is the number of people living around the zone of attraction of Lumière Park and it directly impacts the affluence of a Park. Unicity is the question whether or not people have to go to this specific park or do they have other park around them. And finally, the mix of functions is representative of different kinds of building and shop surrounding Lumière Park.
These three main elements of a spatial analysis will be assessed with a desk research using maps and statistics.

➔ How citizens of Almere-Stad perceived this Park ?

The second main question is the central part of the analysis and tries to determine how citizens of Almere-Stad perceived the main four determinant factors of a good public place.
The methodology used to collect data and feedbacks is a questionnaire administrated in face to face interview. The study is aiming to collect users and non-users perception of the Park and to evaluate how these factors are rated by the population.

The first key determinant factor examined is the accessibility and linkage of the Park. Citizens are asked to assess and judge the accessibility of the place by its surrounding.
The second determinant factor is the perception of comfort and image of the Lumière Park. The users are asked to rate the place as they experienced it.
The third main factor is the use and activities in the Park. It's about the supply of potential activities as well as the variety of activities taking place in the Park.
Finally, the last main factor of a good public place is sociability. It's about the behavior between people. This study tries to rate how users perceived this factor still using a questionnaire and observations.

Questionnaire and observations methods will be more deeply explained in the part collecting data.

➔ What is the correlation between the uses and perceptions ?

As the study already depict citizens uses of the Park and different perceptions they have of the four main factors of a good public place, the last part of the research is to analyze these results and to see if there is a correlation between uses and perceptions of the Park.
The study is using statistical test to compare how the different demographic background perceived Lumière Park , comparing groups of gender (male vs female) , but also comparing the different perception between different group of ages.

As our questionnaire targets not only people using Lumière Park but also people knowing this place, this study can compare if there are differences between the perception of the factors, between users and non-users of the Lumière Park.

Then this research wants to know if people using this public place have globally best rated the attributes than people non using it.

Thanks to opened research question, the last main objective is to understand if urban planners can improve this perception of the Park thanks to the feedbacks and users' answers. Is there a way to improve Lumière Park characteristics that feet with the vision of the community. This study wants to formulate some recommendations to enhance quality of the Park and the way this place is perceived by the population.

2- 3 Research method :

2-3-1 General

The research method is multidisciplinary and uses a triangulation approach, combining observation, questionnaire and desk research . In a first time there is a need to collect data thanks to observation to understand people uses and motivation for frequenting park. In a second time , this study is using a questionnaire to collect citizens perception, administrated in face to face interview. Finally, the last part of the research method is desk research based on maps and statistical analysis to understand the spatial context of Lumière Park.

The next part of this study highlights how questionnaire and observation process will be achieved.

2-4 Method of Data collection

2-4-1 Non-participant and direct Observation

The first part of the study is an observation in Lumière Park. By observing and by talking to people,“ we can learn a great deal about what people want in public spaces and can put this knowledge to work in creating places that shape livable communities. ” (William H. Whyte). Observations made will complement or qualify the results obtained by the questionnaire.

In the context of this research, it is a non-participant observation (total separation between the subject and the observer) and a direct observation (observation of the phenomenon in the place and the moment it occurs). Also, the observation was constructed on a sufficiently precise grid to allow the comparison between the different uses and users. (Annex 1)

The choice was made to observe during different day over the week and different time period over the day. This choice is justified by the wish to identify the variations according to the time of the day. The time period of observation is approximatively one hour for each session. Concretely, the observation will occurs during 3 days, two during the week and one during the weekend because people habits and use of the Park could not be the same during these two moments. Observation is divided in 3 parts of one hour. During this time, the observer will walk in the Park so that there is as much contact with users of the Park. The observation will consist in analyzing the behavior of people by describing the following characteristics: the gender, the time spend in the park, whether people are in groups or alone and what types of activities are they doing.
The observations take place during the same time of the day, ie between 10 am and 11.30 am, 1.30 pm and 3.00 pm and finally between 4.00 pm and 5.30 pm. This provides a clear picture of the people in the park and throughout the day. This experience will be repeated three times in a week.

The study also noticed that the data collection is occurring during the winter time where the weather is cold and rainy in Netherlands during this period. This may impact the observation

over the day, as people are less likely to use green public places. However, the observations take place whatever the weather conditions, although the influx of the park may be lower.

In order to help collecting data, an observation grid will be used. It is composed of characteristic that are easy to collect thanks to observation as the gender, time spend in the park and , people in group or not and the activity performed.

This observation grid will be used to analyze data collected and thanks to it, the study can determine who are the different users of the Park , what are their demographical backgrounds and the most important what kind of activity they performed, using statistical distribution.

2-4-2 Questionnaire

Generality

The second part of the study is a questionnaire using quantitative responses . The survey involved asking people knowing Lumière Park to answer a questionnaire.

The questionnaire is composed of five parts: Part 1- background information, Part 2- the perception of good accessibility and linkages (AL), Part 3- the perception of degree of comfort and image (CI), Part 4 – the perception of user and activities and Part 5- the perception of sociability (S).

The measurement of main attributes is rated using a Likert scale ranging from 1 to 5 ranging from “Highly Disagree” to “Highly Agree", with a neutral answer expected as corresponding to the average response. The high score will indicate that the indicator is perceived as good and vice versa if the score obtained is low. The reason for using a 5-point Likert scale with a neutral answer was to provide an answer close to the average.

Furthermore, the technique of providing the scales “Highly Disagree” to “Highly Agree” will give the result intensity from respondents, thus impacting the distribution of the respondents’ score.

This questionnaire will be administrated in face to face interview so that contact between interviewer and interviewee is better for comprehension of it. It will occurs during five consecutive days during a period the Park is the most likely to be used by Almere citizens. The aim is to complete at least 12 questionnaires per day. People targeted to answer this questionnaire have to be representative of the population using the Park, so that the study have a clear overview of the perceptions they have of the park .

Sample size and target group

To have an objective representation of the population, the number of person interviewed must represent the different demographic background of the district. The number of people living in Almere-Stad is 109 800 inhabitants in 2016. (municipality of Almere).

This study takes into account only the people living in Almere-Stad district and not all the population of Almere. The reason is because not all citizens of Almere are not likely to know the Park.

Using survey monkey website, the size of the sample with a population of 100800 inhabitants, a reliability level of 90% and an error margin of 10% , the sample size for this questionnaire survey is 68 persons.

Variables

This questionnaire is based upon the four main determinant factors identified in The project for Public Places. The aim of this questionnaire is to collect the perceptions users and non-users have of Lumière Park.
Each factor is divided into several indicators, describing more precisely each dimensions of these factors.

The construct of comfort and image (CI) employed four dimensions, namely:

- general attraction (GA)
- feeling of shelter and safety (SA)
- liter and maintenance (M)
- comfortable places to sit (PS)

Meanwhile good accessibility and linkages also employed four dimensions, namely:

- visibility from a distance (VD)
- effort to reach a place on foot (FC)
- connection to public transport, parking facilities for bike/ car (PT)
- clear information and signage (S)

For the construct of user and activities (UA), it's employed three dimensions, which are:

- Uses and users (US)
- Frequency of social events and activities (SE)
- General activity (GA)

For the construct of sociability (SOC) employed three dimensions, namely:

- Number of people in groups (GP)
- Atmosphere of pride and ownership (AT)
- Presence of children and elderly people (PR)

Each indicators are used to build the questionnaire used during the face to face interview, and are related to a specific attributes. (Appendix 2).

3- Planning of proposed research:

The action plan is described in the table below. It explained the main actions performed during this process of data collecting and analysis. Observations and questionnaire are part of the process of data collection. These two actions are highly linked with the weather forecast and the affluence of the Lumière Park during this time. It may be possible to spend more time collecting data than it is planned in the table.

Date	**Action**
14 / 12 / 18 14 / 12 / 18	Spatial Analysis of the Lumière Park
15 / 12 / 18 17/ 12 / 18 19 / 12 / 18	Uses observation
20 / 12 / 18 21 / 12 / 18 04 / 01 / 19 05 / 01 / 19 06 / 01 / 19	Questionnaire Survey
07 / 01 / 19 08 / 01 / 19	Data Analysis – Uses and Observation
09 / 01 / 19 10 / 01 / 19	Data Analysis – Questionnaire Survey

4- 1 Study case

4-1-1 Almere

Almere is of a poly-nuclear green suburb of the Randstad, located twenty kilometres far from Amsterdam. It is the newest city in the Netherlands and the most populated one of Flevoland Province with a population of 200.000 inhabitants. The city was originally constructed to prevent urban sprawl and provide affordable and sustainable housing for the upcoming middle classes. Almere is a city that is made after the first half of the 70', planned in the polder of Flevoland in order to help Amsterdam support the very fast growing population.

The main idea of urban planners was to create interdependent nuclei structures where each district have it owns characteristics. They are separated from each others by green spaces as agricultural land, parks, woodlands and connected via roads for private vehicles, exclusive bus lanes, and bicycle paths.

Almere-Stad was the second nucleus to be developed in 1980, the central nucleus of Almere, in the center of South Flevoland. However, no high-rise apartment buildings were built. This is the economic heart of Almere. Nowadays there are several residential areas, offices, markets industrial areas, parks, and a lake. The city hall, as well as a regional hospital, are located in this district. By integrating parks into the design, urban planners wanted to enhance the quality of life of residents. Almere is still a young city as well as Almere-Stad district and is always looking for smart and green development. This study can be used as a support for public space developers who want to increase Lumière Park use and develop a vision that feet with citizens expectations and needs.

4-1-2 Lumière Park

Lumière Park is located in the eastern bank of the Weerwater and is only accessible for slow traffic. It is composed of three distinct parts. The northern part is designed as an urban park with rows of trees and meadows. The second part of the park is composed of a natural and preserved forest. At the southern part, the beach with only few amenities.

The future of the Lumière park is linked to the construction and further development of the Floriade 2022 on the other side of the Weerwater. Floriade is an international horticultural exhibition, with the theme "growing green cities". This congress will attract professionals from all over the world and will put the city in light. This will help increase the use of the space and attract more people to this park, which will also be subject to modifications, as with city senses project which aims to develop a themed-park, to be situated in the northern part of the park

Lumière Park is an interesting study case because it is the nearest to the central business district of Almere city. However, there are not so many people using it. Most of the time this park is visited by small groups of people or individuals, but general affluence is low.
However, the affluence of a park is only a characteristic, as is the sum of the ecosystem services we benefit from. This research looks at how this park is used by people and how to increase this use because Almere is still a young city. Floriade 2022 is probably going to change Lumière Park affluence and characteristic. That's why it is important to understand how people and communities can benefit from this change. This study is aimed to analyze users et

non-users perception of Lumière Park and how the different attributes of Placemaking for Public Places influence the use of it.

4-1-3 Spatial Analysis of Lumière Park

A spatial analysis of Lumière Park in needed to understand the wider spatial and social environment of the place itself. This study want to determine how density, unicity, routes, or mix of functions influence the behavior of people living in the surrounding of the Park.

4-1-3-1 Density

Density is the number of people living within the zone of attraction of the park. The size has a great zone of attraction as the park is designed linearly. It extends over a length of over 800 meters and a width of 250 m in its most extreme parts. The park is surrounded by Almere Stad district in its north-western part and by Filmwijk district in his north-east part and east part . The most likely users of the park will be the inhabitants of the Eastern part of the Park. Lumière Park is mostly surrounded by housing building so the number of people who are likely to use it is high. In addition, we can say that the zone of attraction is divided by two , if we take into account the western part of the Park only surrounded by the Weerwater. The map bellow in figure 1 show the different areas under the influence of the Lumière Park. There are four different area living within the zone of attraction of the Park and they are represented in violet in the figure 1.
However the park is slightly off the city center and do not have a real connection with Almere Stad district , that reduce its areas of attraction.

4-1-3-2 Unicity

Unicity is about the question whether or not people have to go to this specific park or that there is a choice to go to one or more other parks as well. In the context of the Lumière Park, we can notice that there are 3 main parks surrounding Almere Stad district and Filmwijk district. They are named Ebenezer Howardpark, Lanterna Magikapark and Park Dc Jm Den Huylpark. These three parks are smaller than Lumière Park and are not considered as city Park so they do not attract most of the people around these two district. Lumière Park remain the essential green space for residents around it's zone of attraction. They are represented in the figure 1 with an orange color and the blue double arrows show how they can spatially attract people around the lumière Park.

4-1-3-2 Anchoring

Anchoring means that the park is part of the daily life of the residents. By using only desk research it is difficult to have a clear overview of the users and if yes or no belongs to their daily life. However, the design of Lumière Park can be a good predictor for this part of the spatial analysis. We can observe that Lumière Park is composed of a wild avenue that is connecting Filmwijk and Almere Stad district. This cycling and pedestrian path are a preferential option to join the city center without using their car or public transport. So we

can predicted that this park is strongly linked with the daily life of people living around it. In addition we know that both the city and Dutch culture are promoting the bike use in the city, that is way a large number of people should use it to travel between the two districts.

4-1-3-2 Mix of function

A mix of functions means that the green space is surrounded by many other building providing all kinds of different services. By observing Google maps and others online maps, no one can deny that there are only few services surrounding Lumière Park as most of the building around it are residential areas. We can noticed the presence of the hospital near the North east entrance of the Park and of course the city mall which attract a lot of inhabitants living in Almere Stad and in other district of the city. We can also observed small and medium company implanted in the Filmwijk district but they do not attract enough people to have a clear impact of the green park. Building providing news services are represented in green in the figure 1.

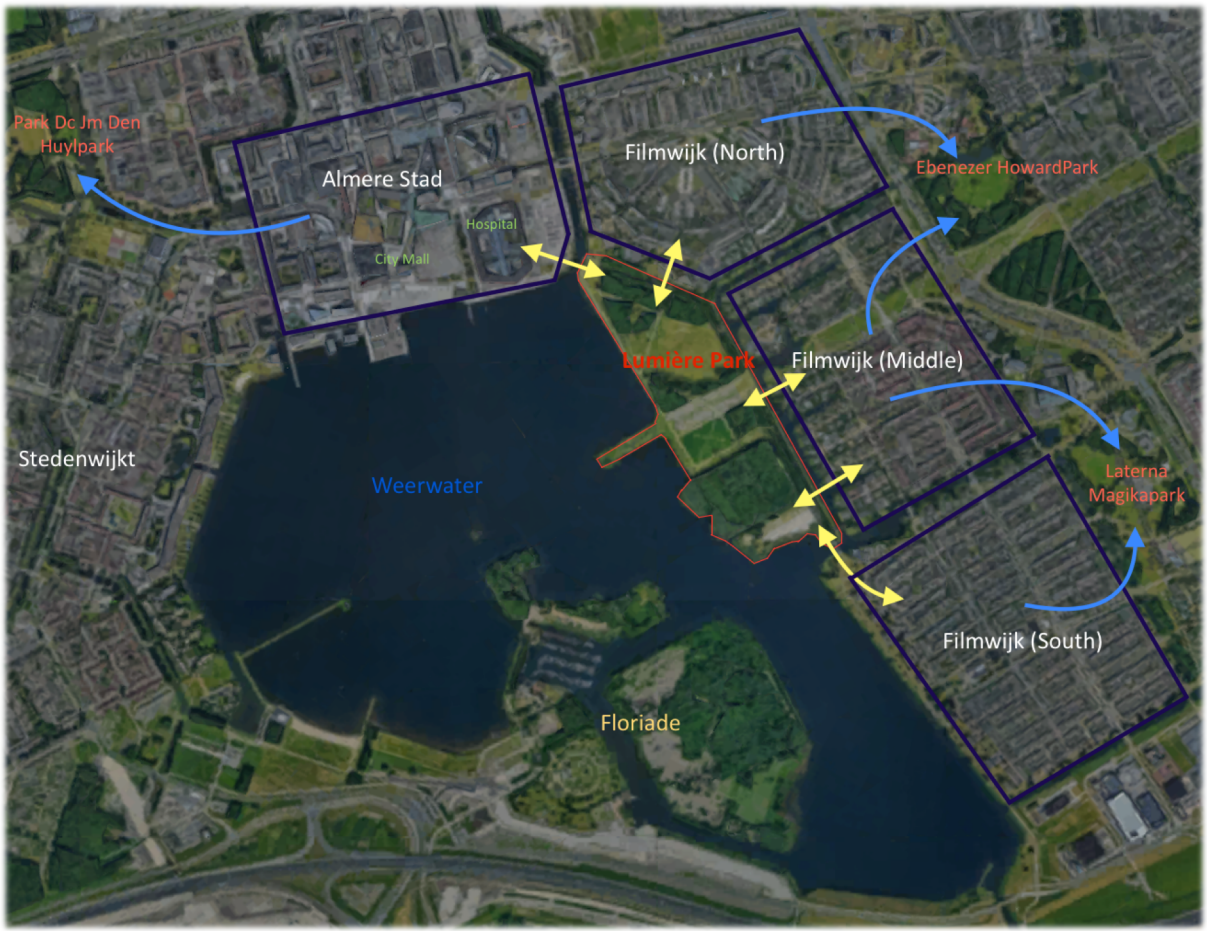


Figure 1: Spatial Analysis representing surroundings of Lumière Park

5- Results

This chapter explain the different results this study obtained per sub-question thanks to questionnaire survey, direct observation and desk research. It illustrates different data collected thank to graph and tables. It also makes a description of the method of data collection and what is the expected result.

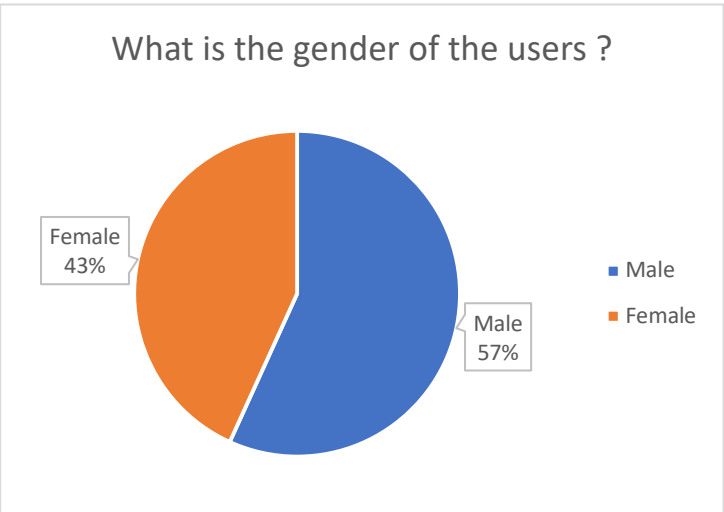
5-1 What are the different users and uses of Lumière Park ?

In the first part , the study explain the different demographical background of the users collected during observation. Then it will analyze the different uses people of this green spot, by showing distribution of the different uses. Finally it aims to analyze the reason for visiting the park and the frequency of use.

5-1-1 Who are the users of the Park?

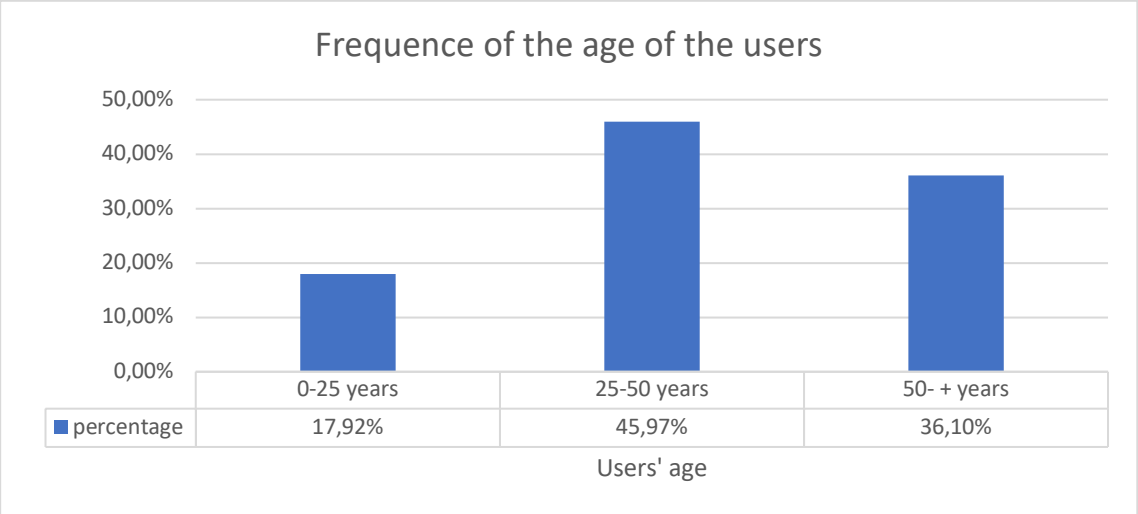
This part answer the first question related to the first sub-question. It give an overview of the collected data during the observation survey. These data were collected during three observation time, during the Christmas break in the first and second week of January. Data were collected during the same three period of the day as described in the methodology part. The following graphs and tables summarize the nine observations performed.

The number of person observed is 385. (n=385)
If we calculate the ratio between the number of people observed and the number of observation, we find an average of 43 people observed during one session. (m=43).
The graph 1 bellow illustrate the frequency of the gender in the data collected with observation. Data coming from the questionnaire were not analyzed because not all interview were occurring during a visit in the Park. We can observe that 43% of the users are female and 57% of the users are male in the graph 1 bellow. Of a total of 385 respondents, 166 are women and 219 are men.



Graph 1: Gender frequency of users observed

In the graph 2 bellow, we can observe the age frequency of the different users observed. Users of the Park are distributed in three main categories that are people between 0 and 25 years old for the first category, 25 to 50 years for the second category and people above 50 years old in the last group. The study decided to create only three category because users' age are based on personal feeling. The age of a person is difficult to measure, it was chosen to divide them into only three groups. Thus the risk of error concerning the age remains limited.
We can observe that the major part of the population using Lumière Park is the second one representative on the people between 25 and 50 years old. They represent 45% of the population observed (177 people). Then come the third group, people above 50 years old. They represent 36% of users of the park with a total of 130 people observed during nine sessions. Finally, the youngest part of the users only represent 17% of the users with 69 people observed.



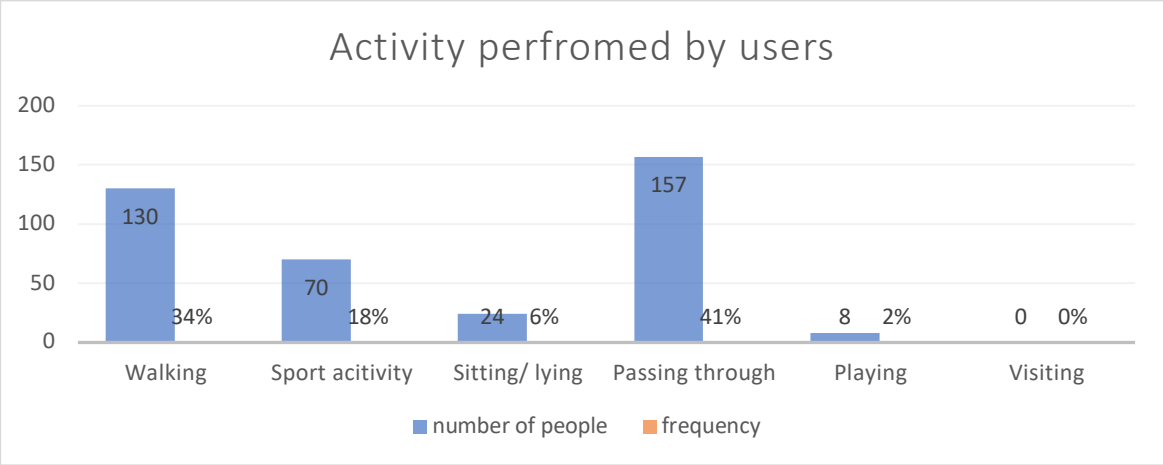
Graph 2: Age frequency of the users

Then the study tries to determinate either people go to Lumière Park in group or alone. The data collected demonstrate that 42,33% of the users are alone and 57,67 % are in group when they visit the green spot. People are counted in group as there are at least with another person. The study did not try to determine the average of people in group.

5-1-2 What kind of activity do they practice ?

This second part of the first sub-question gives an overview of the different activities performed during the visit of the lumière Park. Data were collected thanks to observation sessions are summarized in the graph 3 bellow.
We can observe that the two main activities performed during observation are walking and passing through. They respectively represent 31% and 41% of the total activity with 130 person observed walking and 157 passing through the park.
Sport activities are the third main activity performed during observation with a total of 70 person observed. Sport activity is taking in consideration all people performing a physical activity such as running, skating, fishing etc.. The only sport which is not considered in this category is walking.

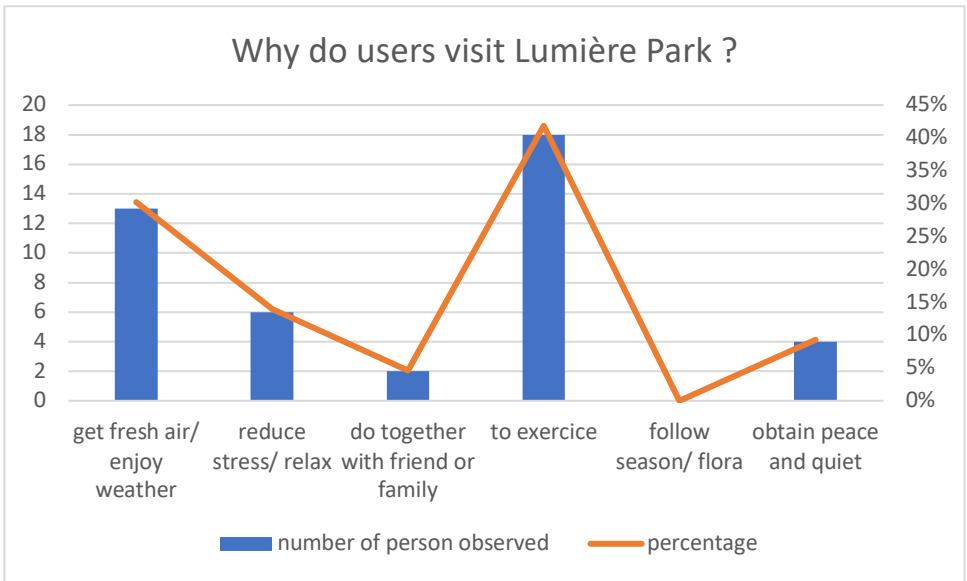
Finally, the three last activity represent a few part of the observation. Only few people were observed playing (2%), sitting or lying (6%) or visiting (0%).



Graph 3: Representation of activities performed during visit of Lumière Park

5-1-3 What are the reason for frequenting the Park and other characteristics

In this third part of the first sub-question, the study gives an overview of the reason for frequenting this park and other criteria as the time spend in the park. The first data were collected thanks to questionnaire survey and the second were collected thanks to observation.
In total, 43 people were interviewed in the Lumière Park. The study has originally planned to find 68 respondent for the sample size but condition as the weather time have reduced this number. The data analysis is concentrated on the number of 43 persons. It reduces the reliability level of the data collected but they are still helpful to give an overview for the first-sub-question.



Graph 4: User's reason for visiting Lumière Park

As we can observe in graph 4 above, the main reason for visiting the Park is to exercise or practice a sport activity. They represent 42% of the sample interviewed with a number of 18 respondents. The second main reason for frequenting Lumière Park is to get fresh air and enjoy the weather. The size of the sample for this activity is 13 people, and the frequency of this activity is 30%. Then come the two activities reduce stress/ relax and obtain peace/ quiet with respectively a frequency of 14% and 9%, that represent 6 people interviewed for deucing the stress and 4 people interviewed for obtain peace and quiet. Finally the last reason for visiting Lumière park is to do something with friend or family. They represent 5% of the persons interviewed with only 2 interviewee.
The reason observe fauna or flora has obtained no positive answer thanks to questionnaire survey.

The study also tried to analyze either people using the green park live from for the spot or not. Data collected illustrate that the average distance between the living place and the park is 885m. the study also calculate the standard deviation for the sample and it is equal to 230m. It illustrates the fact that 95% of the users of the Park live in a distance between 650 meters and 1125 meters far from it.

5-2 How users of Lumière park perceived the main attributes for a good public place:

Table 1: Perception of the different main attribute for a good public space

Key attribute	Dimension	Dimension average	Key attribute average
Comfort and Image (CI)	It is an attractive place	3,65	**3,33 / 5**
	It is a safe place	2,75	
	Park is well maintained	4,15	
	Comfortable places to sit	2,75	
Access and linkage (AL)	Visible from distant point	4,15	**3,73 / 5**
	Easy to access	4,85	
	Well connected with public transport	2,65	
	Well indicated and signalized	3,25	
Uses and activity (UA)	I participate cultural events	1,55	**3,35 / 5**
	Other people when I visit the Park	4,40	
	It is part of my daily life	3,60	
	I practice physical activities	3,85	
Sociability (SOC)	Lots of people in group	2,35	**2,86 / 5**
	Children and elderly people	4,35	
	Participate to social events	1,25	
	It's a place that I appreciate	3,85	

Data were collected thanks to questionnaire survey. During interviews, users of the Park were asked to answer a number of 16 questions related to different key attributes the study wants to analyze. This questionnaire was administrated in face to face interview so that the interviewer can help the respondents if they do not clearly understand the question.
A total of 43 users have answered this questionnaire with a proportion of 31 people during the visit of the park and 12 persons in another context of Lumière Park. So data collected in an average estimation of the perception of the users and non-users of the Park. Non users of the park are mainly represented by AERES university student who helped me collected data.

Each indicators were assessed thanks to a Likert scale, where each interviewee have to give their opinion about the question asked. They have a choice to make and say if they are totally agree or totally disagree with the question or sentence.

In order to convert data collected in numerical values, each answer was assessed in the following way: 1 point is given if the respondent is strongly disagree with the question, and 5 points are given if the interviewee is strongly agree with my question. At the end, the study obtained different notation varying from 1 to 5 for each dimension and attribute. It aims to make the average of each criteria and give an overview of the perception they have of these dimension.

We can observe in Table 1 above, that each criteria is evaluated separately and has obtained an average between 1 and 5. The first attribute to be assessed is the comfort and image of the Lumière Park. The highest average is obtained for the question is the park well maintained, with 4,15/ 5, then come the question, is it an attractive place with an average of 3,65/ 5.
The two main dimension with the lowest average are answering the question is it a safe place, and there is enough comfortable place to sit, with the same average 2,75/5.
Finally in the last column we can observe the average of the attribute comfort and image assessed by interviewees. It obtained an average of 3,33/5 which can be ranked as the third main attribute in users' opinion and feedbacks.

Then the study analyze the perception of access and linkage for the Lumière Park. Each dimension were assessed in the same way that for the comfort and image on the place. The two main dimension with the highest average are "easy to access" and "visible from a distant point" with respectively an average of 4,85/5 and 4,15/5. The two main dimension with the lowest average are "well connected with public transport" and "well indicated and signalized" with respectively an average of 2,65/5 and 3,25/5. In the last column we can observed the average of the four dimension assessed for the attribute Access and linkage. The average for this dimension is 3,73/5.

The third attribute to be analyzed is "uses and activity" of the Lumière Park. The two main dimensions best rated by interviewee are "there are lots of people when I visit the Park" and I practice physical activity with respectively an average of 4,4/5 and 3,85/5. Then comes the dimension "it's part of my daily life" which obtained an average of 3,6/5. The lowest dimension assessed is the answer "Do I participate to cultural events". Most of the people answered "disagree" or "strongly disagree" to this question and this dimension is rated with 1,55/5. The global average for this key attribute is 3,35/5.

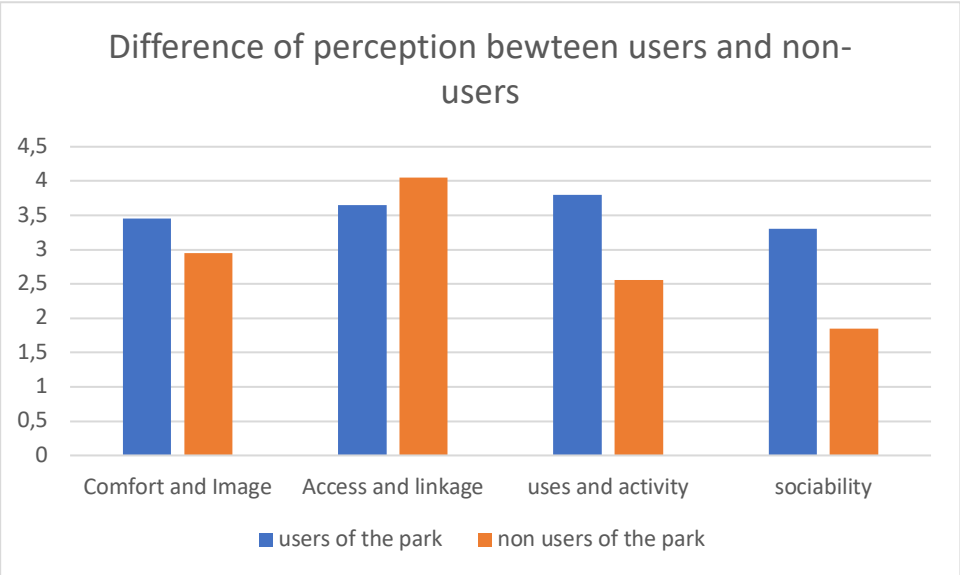
Finally, the last main attribute assessed by this interview survey but not the least is the sociability of the Park. The two main dimension best rated by users of the park are "presence of children and elderly people" and "it is a place I appreciate" with respectively an average of 4,35/5 and 3,85/5. Then people were asked to answer the question if there are lots of people in groups during their visit of the Park. The average for this answer is around 2,35/5. Finally the last dimension assessed is the participation to social events and the average is the lowest in this dimension with 1,25/5. The main average for this key attribute is 2,86/5. This is the key attribute rated with the lowest average by interviewee.

5-3 What is the correlation between the uses and perceptions ?

The third sub-question tries to answer the question if the perception between users and non users is different or not , and if demographical background have an influence on the perception of the users.

5-3-1 Is there a different of perception between users and non-users?

In order to analyze if there is a difference between users and non-users, data were collected thanks to thanks to questionnaire survey. Out of a total of 43 respondents for the questionnaire, 12 people are non-users of the Park and 31 are using it (interview during visiting the park). To analyze data, this study is calculating the average for each key attribute depending the use they have of the Park. The difference of sample size is important, but this comparison is still possible.



Graph 5: Representation of difference in perception of the main attribute between users and non users.

In the graph 5 above, we can observe both average for each key attribute depending on the fact that the person is users or not. The fist attribute to be compared is comfort and image of the Lumière Park. The graph 5 illustrates the difference in the rated dimension. Users of the Park have best rated comfort and image of the Park with an average of 3,45/5 and non-users of the Park have rated this attribute with an average of 2,95/5. The difference is the perception is numerically 0,5 /5 for the first attribute, comfort and image.

The second dimension assessed in the accessibility and linkage of the lumière Park. Non-users of the park have best rated this attribute with an average of 4,05/5 and users of the park have rated it 3,65/5. We can observe a difference of 0,4/5 for the notation of this attribute.

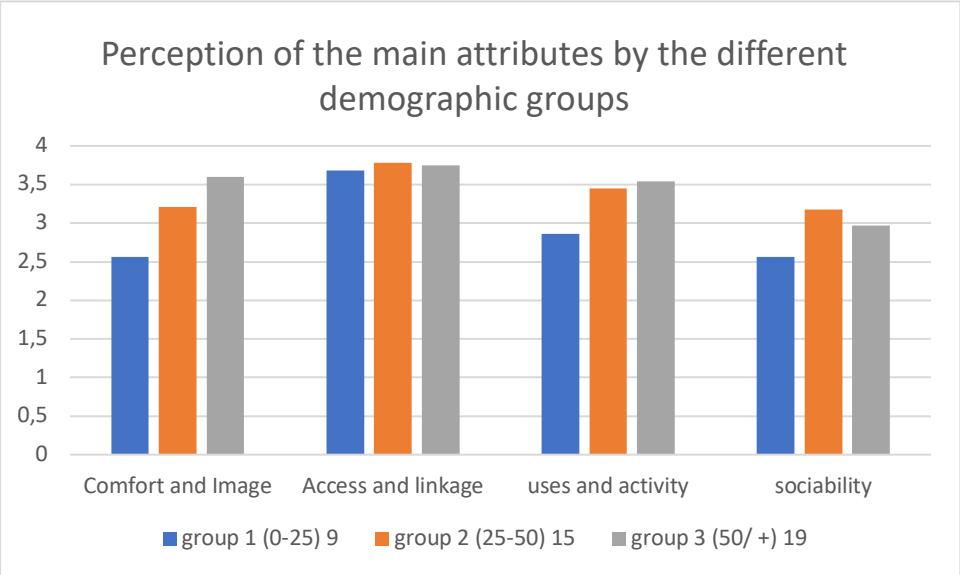
The third dimension compared are uses and activity of Lumière Park. Users of the green spot have best rated this attribute with an average of 3,8/5 and for the non users 2,56/5. It makes

a difference of 1,24 for the third attribute, uses and activity, which is the second largest difference observed.

Finally the last attribute to be assessed is the sociability of the park. Users of the park have highly best rated this attribute with an average of 3,3/5 and non users have rated it 1,85/5. This make the greatest difference in perception between users and non users with a number of 1,45/5.

5-3-2 How different demographic background are influence by the perception of the Park?

This third sub-question try to answer the following question, Are the main key attributes perception influenced by the age of the users. Data were collected using questionnaire survey and results are summarized in the Graph 6 bellow.



Graph 6 : Perception of the main attributes by the different demographic groups

Concerning comfort and image, we can observe a large difference between the perception of this attribute according the age of the group. Youngest users value this attribute with an average of 2,56/ 5 , people of the second group have rated this attribute with an average of 3,21 / 5 and the oldest group have rated comfort and image with an average of 3,6/5.

For the second key attribute, access and linkage, we can observe an almost similar frequency with an average for the three groups 1,2 and 3 that are respectively 3,68/5, 3,78/5 and 3,75/5.

Relating to the third attribute, use and activity of the park, we can observe a lowest average for the first group (0-25) , rated 2,86/5. Two other groups 1 and 2 have quite the same average, respectively 3,45/5 and 3,54/5.

At the end of graph 6, we can observe that average for the last main attribute, sociability are heterogeneous. The first group has rated this attribute with an average of 2,56/5 and the

second group 3,18/5. Finally the last group 3 have perceived this attribute with an average of 2,97/5.

5-3-3 How to increase use of the park and improve it, according to PPS advices.

This last question of the third sub-question is using desk research to summarize different advices collected and picked-up in different study cases of Project for Public Places.

In order to attract a greater number of visitors, Lumière Park and urban planners and other decision makers could follow some strategies that enhance perception and use of the Lumière Park. They could make the park more attractive for different kind of users, and bring some diversity in the different demographical backgrounds.

The first of these advice would be to use cycling transit passing throughout the park for attracting users. Instead of crossing it without even paying attention to its surroundings, give them a reason to stop and enjoy the view on the green spot.
Management of the spot is also a priority and municipality could start a differentiated management of the park, with different zones of management ranging from slow maintenance to higher one. They could also develop some strategies to attract visitors during different seasons and design the different path for more flexibility.

Another advice could be to reconnect the park with its surrounding and attract more people coming from the city center of Almere. Most of the users visiting the park are living around it. Lumière Park could provide more amenities for the different group of visitors. Only few benches are available, and only facilities are located around the beach in the south part of the park.

Another advice could be the creation of new walking path throughout Lumière Park and create a real atmosphere as well as a strong identity. Lumière Park is supposed to be an attractive green place for the city and its surrounding as we can see with VondelPark in Amsterdam.

6- Discussion of results :

The objectives of this research is to have a clear overview of the different users and uses of Lumière Park. Then this study tries to determine how the different users perceived this park and the main key attributes for a good public place, according to the Project for Public Spaces. Finally, it aims to analyze the different data collected thanks to questionnaire and observation survey, to find a link between the uses, users and perception of the attributes. Thanks to this analyze the study formulate some advices to increase quality of Lumière Park and enhance and diversify its uses.

6-1 Who are the different users and uses of Lumière Park

Findings have shown several significant characteristics regarding park users. The park is mostly visited by male gender with a proportion of 57%, which is significant when we compare it to the percentage of the population of Almere which is equally distributed between the two genders. Lumière Park is mainly visited by people aged more than 40 years and we can observe a sub-attendance with the youngest visitors of the Park, aged between 0 and 25 years old. This feeling is even higher regarding to my observation and time spend in the park, where only couple of teenagers can be observed during one hour and a half. Lumière Park do not attract this part of the population, only 17% of the users of the Park are under twenty-five years old. Analysis of the different activity lead to a relentless report that is most of the users of the park are just passing throughout it. This park has an importance in the movement and soft transportation of the inhabitants, and the connection between the city center and Filmwijk. Most people do not stop and enjoy the green spot. They represent a flow of potential visitors that the park should attract. The study also highlight the fact that the park in mainly use to practice sport activity and walking. Most of the users are daily ones, who use it to performed routine activities as walking the dog or to get fresh air. People want to practice in a green environment and the park offers this opportunity. Its sublime setting on the city, as well as its view on Weerwater and paths through the woods are undeniable assets for the users, which allows a real disconnection with an urban environment of the city itself. When we compare the reason for visiting the park, most of the people answer that the main reason is to exercise and get fresh air. People want to have an healthy environment and enjoy benefit from the different ecosystem services the park provides.
Finally the major part of the users are living in a small zone of attraction around the park, which is 885m. It means that the users are most of the time living in the surrounding of it underlining the anchoring of the park. It also indicates the poor attraction of the park for people living or working in the central business center.

In this part of the study and concerning the data collection, everything went according to the plan and the methodology described. Data collection thanks to observation is quick and efficient. It allows to have a clear overview of a population and first hand data are objective. It means there is no interpretation of the data but only factual facts. This allows to have a sample with a large population, so we have a better distribution of data and they are also more secure. However, observation during different week and different month could offer a best understanding of the results. Data were collected during Christmas break in the beginning of January. The frequentation of the park was maybe not representative of the real population during a normal week of work.

6-2 How users of Lumière park perceived the main attributes for a good public place ?

We can observe that the difference of perception between the four main attribute for a good public place is minimal, especially if we compare the average of CI, AL and UA. Sociability of the park is the most under-rated attribute with an average of 2,86/5. It illustrates the fact that there are only few cultural and social events in this park. Despite the presence of numerous people if group frequenting the park and the presence of elderly people, the sociability is the point of improvement that urban manager have to focus on. This park belongs to the daily life of most of the users interviewed that highlights that Lumière Park do not have the reach and breadth it should have. Only half of the target group is attracted, represented by people living in the surroundings.

Findings concerning CI of Lumière Park have calculated an average of 3,33 for this attribute. This is the third best rated perceived attribute illustrating that the park is perceived as an attractive place for the users. This park is also considered as well maintained by visitors but they do not consider it as a safe place, especially during the night. His lack of activities and lack of public lightening along the path inside Lumière are determinant criteria for the safety of the Park. Finally users consider that there is not enough comfortable place to sit, as we can observed in the park with abandoned wood benches or concrete ones.

Accessibility and linkage of Lumière Park is key attribute the best perceived by users of the park with an average of 3,73. Indeed, this green spot is easy to access by using soft transportation but there are not real connection with public transport. However this dimension is not perceived as a real stop for users as most of them are living around and also use cycling path going throughout it to reach the city center. They do not perceived this place as well indicated and signalized. It could be best connected with the center of Almere and increase its zone of attraction. People coming from the city center represent a high number of potential visitors.

Findings concerning UA of Lumière Park indicate that most of the users are visiting the park to practice a physical activity. Most of people observed were running or walking in groups or alone. They want a close contact with the nature and do not want to exercise in an urban environment. However Lumière Park is designed with only few amenities to diversify groups of people they could attract. The lack of cultural and social events is another restraining factor that reduce the number of uses for the different visitors.

In this part of the study, nothing went according to the plan. It was planned to interview 68 visitors to have a representative sample of the population living in Almere Staad but contrary to the observation survey, interviewing people required a lot of time and effort. This research has only interviewed 43 people and not all categories of visitors are represented in data collected. Indeed, some groups of users were privileged as people sitting on benches or just walking throughout the park. It is almost impossible to collect the perception of people just passing throughout it and the remark is applicable for people practicing a sport activity.
In addition, it was difficult to represent the opinion of the first group of users aged between 0 and 25 years old as only few of them are users of the park. The study collected the perception of these attribute in interviewing AERES student. They mostly represent the vision of the non-users of the park as a minor part of them are users of it.

Other key factor have influenced the collect of data and maybe the result of it. The first of them is the time during the data collection occurred. It was during the winter Christmas break and a lot a people are spending time with family or have to move another place. Weather condition may also have impacted the uses of the park. Indeed this is a cold and rainy period in Netherland and it has multiple consequences on activities performed. The attendance of the park is totally different during summer time and people can perform aquatic activities and enjoy the different atmosphere of the park.
Language barrier is also an important factor in the data collection. Living abroad and non speaker of Dutch language is a constraining factor in this research. A large number of respondents did not want to be interviewed because they were not used to speak English, did not have time to answer or simply did want.

Concerning the questionnaire itself, the study should have included more criteria and dimension to assess the key attributes. It is difficult to have a clear representation of the thoughts with only four questions. Finally the study should have a larger scale to assess the answer of the respondents in order to have a best repartition and distribution of answers. Using only a five point Likert Scale is useful for the comprehension of the interviewee, but a scale between 1 and 10 could have be more accurate.
Finally the data collection time is very limited in the time and does not allow to a-have a clear representation of the population.

6-3 What is the correlation between the uses and perceptions ?

Findings illustrate that non-users of Lumière park have generally a lowest perception of the main attribute of green spot if we compare it to users of the place. All attribute assessed are under-estimated and under-rated by non-users except accessibility and linkage of the park. It shows the fact that the park do not attract a lot of person living outside the zone of attraction of the park.

In addition, we can observe that the youngest part of the population is disinterested by this place as they have also under-rated all the attribute assessed. This findings can be completed with all information gathered during observation time. Only few young people are visiting the park, and they are most of the time represented by babies walking with parents. Almost no teenagers were overserved during the research. If we compare the findings about the perception of the two other groups 2 and 3, we can conclude that they globally have the same perception of the key attributes. These visitors come here in regular basis.

Some advices collected in different study cases of Project for Public Places have been collected and detailed in the results of the third sub-question. The main problem of Lumière Park is to diversify the different group of people using it and to have a clear vision for this place. It looks that most of population living around have appropriated this green place. Indeed Lumière Park need to turn into a real urban park designed not only for the nearby population but or all the district. It needs to develop its economic activity by providing different amenities, social and cultural events and by creating a mix of function around the place. People frequent this place for his natural and peaceful character. Urban planners must boost the attractiveness of this place without distorting its profound natural character

7- Conclusions and Recommendations

7-1 Conclusion

This study was constructed to have a clear overview of the different users and uses of Lumière Park. We can observe that the users are not really representative of the population of Almere when analyzing the different demographic background. This park is mainly used by people living in the zone of attraction of the park and is part of their daily routine. The study also illustrates the fact that people are frequenting this park to perform most of the time physical activities and to have a close contact with mother nature. Finally this park is not attractive for the youngest part of the population as the different activities and social events are not so diversified.

Then this study tries to determine how the different users perceived this park and the main key attributes for a good public place, according to the Project for Public Spaces. Low number of person interviewed and the methodology make the analysis of data collected complicated for this study. However, we can conclude that the perception of these attribute give a good overview to improve this park. The general comfort and image of the park is perceived as good but could be enhanced by developing a vision attracting a larger public. Accessibility of the park and linkage with different road and path is the strongest perceived point of the attribute. The green spot can use this flows of people to boost its development and attendance. Improvement have to be focused on the uses and activities of the park in order to extend the demographical background of the users. By implementing more facilities in this place, it could attract a greater number of people. Sociability appears as the weakest point of the park. Social and cultural events must take place in the park, during different time of the year.

Finally, we can say that Lumière Park improvement based on the perception of these key attribute is possible. Urban planners and municipality of Almere must develop a vision that fit with expectations of people living in Filmwijk but there is also a need to attract new visitors by diversifying uses and activities. Development of Floriade and the path around Weerwater will change the use of Lumière Park and its features. Its modifications must take into account the vision of the users and rely on the perceptions of the attributes to make park itself a real reason to visit the city of Almere

7-2 Recommendations

General recommendation could be addressed to the municipality of Almere and urban planners working to improve this Park. There is a need to attract people coming from the city center of Almere by diversifying activities proposed and with a better connection between Almere-Staad and Lumière Park. This natural space has to conserve his natural characteristics that visitors are looking for.

Concerning the methodology proposed, searchers could use it to compare difference of perception between several green park of the city. Thus it would be easier to compare data collected in the different park and have a clearer overview of this perception. It could also be interesting to compare the perception of these attribute during the different season of the year to see if the weather condition and time period play an important role in the perception of attributes. The number of respondents could also be improve as the park would be more used during different period of the year.

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9-1 Appendix A - Observation Grid

Date :

Gender :

Time spend in the park :

Visit the park alone or in group :

Estimated age:

Activity performed :

➔ **Walking**	With a dog
	With a stoller
	With a chlid
	In couple (relationship)
➔ **Sport activities**	Jogging
	Biking
	Field activities (football, rugby..)
	Roller/skate
	Fishing
➔ **Sitting / Lying**	Child supervision
	Landscape contemplation
	Rest / nap
	Lunch / picnic
	Reading on the grass
	Sun bathing
➔ **Trip / passing through the park**	By bike
➔ **Visiting**	Touristic
➔ **Others**	Photography

Other remarks :

9-2 Appendix B – Questionnaire

Key attributs perception Survey questionnaire

➔ Age :

➔ Gender :

➔ Do you often visit Lumière Park ? (frequency)

➔ How far do you live from Lumière Park ?

➔ What kind of activities do you practice in this Park ?

➔ Motivation for visiting the Park ?

To enjoy the weather and get fresh air
To reduce stress, relax
To exercise, keep in shape
To do something together with friends and family
To follow the seasons, flora and fauna
To obtain peace and quiet without noise
Other reasons

Indicators	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Comfort and Image 5					
Lumière Park is an attractive place ?					
This is a safe place ? day (1) / night (2)					
The park is well maintained ?					
There are enough comfortable place to sit ?					
Access and linkage 5					
The Park is visible from a distant point					
It is easy to access to Lumière park					
The Park is well connected with public transport					
The Park is well indicated and signalized					
Uses and activities 4					
I participated to social events in this park					
There are other people when I visit the Park					
This park is part of my daily life 2 1					
I practice physical activity in this Park					
Sociability 4					

There are lot of people in group					
The Park is visited by children and elderly people					
This Park has changed a lot during last year					
It’s a place that I appreciate					
Comment :					