ABSTRACT

The objective of this study is to evaluate the accessibility and usage of parks in Gönyeli (North West of Nicosia, Cyprus). By having a better understanding of what parks users prefer and want, local authorities can develop urban spaces in a way that benefits all. A total of 380 questionnaires were distributed to residents in Gönyeli and the findings were analyzed using descriptive statistics with the aid of SPSS 22. Field studies were also completed to identify the urban parks found in Gönyeli. The findings made from this study revealed that the parks have a friendly atmosphere and that people enjoy visiting the parks during spring and summer seasons. However, it has also established that a number of people in Gönyeli are not generally satisfied with the facilities and access of the parks. Following the distribution of the questionnaires, the feedback received showed that facilities could be improved to persuade more people to spend their time outdoors in the park.it was concluded that parks in Gönyeli in regards to the facilities and equipment it has to offer to park users. Recommendations were made that park authorities must engage in research in order to come up with better urban park designs and urban plans.

Keywords: Gönyeli; park accessibility; park usage; urban parks; urban development

ŐZET

Bu çalışmanın amacı, Gönyeli'de (Lefkoşa,kıbrıs kuzey batısi) bulunan parkların, ulaşılabilirliğini ve kullanımını değerlendirmektir. Yöneticilerin, parkların kullanıcılarının tercihlerini ve isteklerini daha iyi analiz ederek, kentsel alanları herkese fayda sağlayacak şekilde geliştirebilirler. İstatistikler, Gönyeli halkına dağıtılan toplam 380 anket doğrultusunda SPSS 22 programının da yardımıyla elde edilen sonuçlar analiz edilerek, elde edilmiştir. Gönyeli'de bulunan kentsel parkları saptamak için saha çalışmaları da yapılmış ve tamamlanmıştır. Bu çalışmadan elde edilen bulgular, parkların dostça bir atmosfere sahip olduğunu ve insanların bahar ve yaz mevsiminde parkları gezmekten zevk aldıklarını ortaya koymuştur. Bununla birlikte, Gönyeli'deki bazı kişilerin genel olarak parkların tesislerine ve ulaşımından memnun olmadıklarını da belirlenmiştir. Anketlerin dağıtılmasının ardından alınan geri bildirimler, daha fazla insanın zamanını parkta açık havada geçirmek istemelerine sebep olduğu ortaya çıkardı. Gönyeli'deki park kullanıcılarının, araçlarını park etmek için de sunulacak alana ihtiyaçları olduğu belirlenmiştir. Yöneticilerin, daha iyi kentsel park tasarımları ve kentsel planlarla yaratabilmesi için araştırma yapmaları gerektiği konusunda önerilerde bulunulmuştur.

***Anahtar Kelimeler*:** Gönyeli; park ulaşılabilirliği; park kullanımı; kentsel parklar; kentsel gelişim

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CHAPTER 1
INTRODUCTION

1.1 Background of the Study

There have been several studies upon the matter of urban green spaces and how they can be related to the stress level of people as well as their well-being. This is while the expansion of this area of research is mainly focus on western countries that is, Europe and North America (Saw et al., 2015). This notion has long been noted that urban environments do have contributions to mental health (poor) and well-being (Faris & Dunham, 1939). Comparisons have been made, in which rural and urban areas have been under research and the results have shown people living in urban areas have higher psychiatric disorders than those in rural areas (McKenzie et al., 2013; Romans et al., 2011). The concern is constant and increasing on an on-going basis due to the fact that urbanization is growing and is to be increasing up to 12% by the year 2050 (United Nations, World Urbanization Process, 2014). The outcome of urbanization is overcrowded, noise pollution and other types of pollution (e.g. air, and/or water), which yields in a lower mental health and well-being levels for the residents of urban areas (Peen et al., 2010). Studies have also shown that those residents, whom are relatively more exposed to natural environments have lower distress and reduced stress, causing them to have better moods (White et al., 2013; Tyrvainen et al., 2014). Therefore, urban green spaces and how they are related (or interrelated) to well-being of people is a crucial matter to be investigated more thoroughly as comprehensive understanding upon this matter can greatly benefit all humans as it affects collective quality of life (Saw et al., 2015).

1.2 Research Problem

The development of urban green spaces and public urban places such as parks has been considered to offer a lot of benefits. For instance, a study by Bedimo-Rung, Mowen, and Cohen (2005), showed that the development and usage of urban parks has positive environmental effects. On the other hand, Wolch et al. (2010), contends that the usage of parks by residents is positively related to better social and healthy lifestyles. However, arguments can be made that the ability of parks to offer these and other benefits is being limited by a series of factors. One of the challenges that can be noted is lack of accessibility and most parks in Gönyeli are considered as not being accessible (Bisht, Mishra & Fuloria, 2010). But the problem of lack of accessibility of the parks can be dismissed by arguments made by Weber (2003) which showed that urban parks are highly accessible because of their position and the nature of urban planning and design surrounding them. It is not therefore clear as to why such parks are not accessible and this makes it difficult to come up with sound solutions to improve their accessibility as well as utilization.

To make matters worse, lack of accessibility can affect the utilization of the parks and thereby limiting their ability to offer potential health, environmental and other social benefits. This can also be reinforced by observations made by Wang, Brown and Liu (2015), who noted that if people are to benefit from parks, then they must be using the parks and yet some people do not use urban parks especially in Gönyeli. In reality, a lot of people do not use parks because of lack of accessibility, green spaces, facilities, poor designs and security reasons (Van Herzele & Wiedemann, 2003). With a low utlisation rate, it is therefore difficult to use urban parks to achieve the desired environmental, social and political objectives. The problem can thus be said to be low utlisation and not all parks have got the same utilization levels. This can also be supported by the classification of parks as noted from Jia (2003), and Van Herzele and Wiedemann (2003) upon which modern urban parks such as Teardrop Park, Burrow Street Park and South Park are based on. This goes along with what is being observed in Gonyeli as some parks are being used more than others. This contradicts with the idea that urban parks have a high utilization rate and yet that of Gönyeli is low in certain places (Gregory et al., 2009). As a result, it is not clear as to why some parks are not accessible and yet the given ideas show that urban are highly accessible and usable

because of the nature of urban design and plan as well as their potential health benefits. This study therefore seeks to examine the accessibility and utilization of urban parks and offer possible ideas that can also be used to improve urban parks accessibility and utilization.

1.3 Relevance of the Study

The study of parks and their accessibility has been of interest for several embodiments of academia as well as within a number of industries, due to the reason that adequate usage of available land and other spaces in a city or urban area and transformation/creation of green areas for improvement of local well-being and as a stress-reliever. This is highly important for urban design and urban planning as well as urban development (Wolch et al., 2014; Wei, 2017; Wang et al., 2015). The provision of natural environment, nurturing and motivating physical activity for all age-ranges, and foster lifestyle within the community, which can be expanded to the society as a wholesome (Byrne & Wolch, 2009). Unit enhancements and consequently interactions as a result of improvements in the park are highly capable which results in better economic and tourism outcomes that are vivid as well as a fall within the area of healthcare expenses, all of which can be seen on a daily basis and be seen (Geoghegan, 2002). This is one of the reasons that boosts the importance of studying parks and their accessibility and usage within urban areas as well as their relationship with social aspects (well-being) (Chiesura, 2004; Wolch et al., 2010).

1.4 The Aims and Objectives of the Thesis

This research aims to measure and analyze the accessibility of parks as well as their usage in the area of Gönyeli, (North West of Nicosia, Cyprus.) The main objective of this research is to assess the accessibility of parks in this area and the urban design of parks which are in this region and their usage/utilization. Measuring the accessibility of parks will give a better understanding of how to develop the urban spaces and in turn achieve an improved level of quality of life for the local residents and park users.

This analysis can help the authorities in their decision-making process when developing the urban areas, in particular parks and green areas. furthermore, this can help with including

why people and locals have difficulties using parks; such as lack of green areas and poor accessibility. This will allow the authorities to identify which aspects of urban design and accessibility features are more important for locals, better design for parks, where families and children can make use of the facilities and equipment. The main objective of this research is to examine the accessibility, and the usage of parks in Gönyeli. The study also seeks to attain the following objectives;

- To assess the current usage of urban parks in gönyeli.
- To establish the requirements needed to improve the accessibility and utilization of urban parks in Gönyeli.

Subsequently, this will affect their quality of life as it affects the leisure time people have and require social activities and urban spaces that are public and available for them to spend their time. Hence, the importance of quality of life and urban design and their relationship can resemble in this study as they result in an improvement in the lives of locals.
This research will to clarify and address the factors that play a major role in the usage and accessibility of parks in the area of Gönyeli as well as providing implementation for land usage and design elements of urban public spaces.

By identify the key factors and requirements needed for creating a more sustainable and accessible park is of great importance since residents of gönyeli can benefit from the facilities and equipment.

The development of green spaces in urban areas provides a certain degree of health regeneration, improvement of quality of life by encouraging park users to use the facilities and spend their free time outdoors.

Having places, where people can walk normally and be able to exercise alongside improving social aspects of the area, helps to decrease obesity levels as people tend to have healthier bodies when they have accessibility to green spaces and urban facilities, in particular, in parks. Lack of sufficient amount of green spaces lowers the quality of urban area. The area of Gönyeli lacks sufficient green space areas. There are a number of lands, where the space

is not being used or it has been remained untouched. This causes a problem in the urban design aspect of this area as well as having a negative impact on the residents of area.

1.5 Research Questions

In light of the given objectives, this study therefore seeks to provide answers to the following questions;

- How accessible are the urban parks in Gönyeli?
- How often are people in Gönyeli visiting the local urban parks and for what purpose?
- What improvement can be made to improve accessibility and utilization of the urban parks in Gönyeli?

1.6 Research Methodology

The study is a qualitative study that relies on the use of questionnaires to collect the required data. A total of 380 questionnaires were randomly distributed to residents of Gönyeli, North Cyprus. The responses were analyzed using frequency distribution and descriptive statistics. The data was compared to three case studies; South Park in San Francisco, San Francisco's Burrows Street Pocket Park and Teardrop Park. Time restriction was the main limitation of his study. Data was collected in a short time frame and therefore a smaller cohort was used. Questionnaires were distributed to one specific community (Gönyeli) of people which resulted in lack of variability in data. thus, findings cannot be generalized to other locations. Questionnaires were voluntary and posed out to participants. The questionnaire was completed in average time scale of 20-30 munities.

All participants were informed of the aim of the research, why the data was being completed and how the information would be used. All participants were aware that data would be used in a confidential manner and participant identification would be anonymized. Participants were well informed that they had the right to withdraw their data any time or refuse to complete the questionnaire.

1.7 The Scope and Limitation of the Thesis

The study focuses on the examination of the accessibility and utilization of urban park in Gönyeli, North Cyprus. Accessibility and utilization of urban park in Gönyeli were examined in relation to hierarchy of parks aspects which include physical, transport, knowledge, social and personal dimensions. The study is confined to the use of a questionnaire and the use of descriptive statistics to analyses the collected findings. The study will dwell on the examination of urban parks in Gönyeli in terms of their accessibility and utilization.

CHAPTER 2
LITERATURE REVIEW

2.1 Urban Parks

Bedimo-Rung, Mowen, and Cohen (2005), outlined that urban landscapes, environmental features such as green spaces or public parks hold a heavy burden as leisure activities and other community aspects is provided through them. Benefits of urban parks are wide in array in respect to the natural environment, which they project, which reduces stress levels and enhances health recovery, whether mental or physical. This also expands to those lifestyles that are sedentary due to encouragement of physical activity (Byrne & Wolch, 2009).

Communities can have closer bonding and interactions with one another alongside having added benefits in economic aspects from tourism attracted to the area. Moreover, to have reduced the mere expenses that can be related to healthcare as well as other means of social life, such as transportation and related systems of choice is also enhanced via urban parks (Byrne & Sipe, 2010). All aforementioned factors can yield in a positive outcome for the community's or society's well-being. This area needs to be covered by various disciplines and different sciences for better understanding and comprehending the matter to better serve the overall and collective well-being of society (Chiesura, 2004; Wolch et al., 2010).

Park accessibility is a key factor in defining and explaining the depth of park utilization. Therefore, this can be extremely related to the other variable that is well-being of the community or society on a greater scale (Wang, Brown & Liu, 2015). Thus, this aspect of green space and their usage within urban communities is of crucial importance and provides a criterion for assessments of allocation of the aforementioned green spaces. Maruani and Amit-Cohen (2007), hinted that other methods and the common models of decision-making and planning on the subject are direct standardized quantitative approaches which includes the number of parks per capita for measurements upon park access.

It has been noted that such models cannot consist of the complex-natured decision-making-process of humans. Therefore, adequate planning for the decision-makers is to consider this topic as a multidimensional structure as it involves various concepts in a diversity of needs and its roles in the usage of park. This is extremely important for the planning team and designers to be aware of the magnitude of this matter in their process of decision-making. It is currently described that accessibility as a concept is a construct of multi-dimensions, which can be subject of/to physical or nonphysical variables and related aspects (Gregory et al., 2009).

Hass, (2009), contends that when measuring accessibility there are several factors that must be noted, such as time and distance as ordinary variables which address functionality within Central Place and Location theories and on geometric basis. Bisht, Mishra and Fuloria (2010), hinted that the accessibility concept has been extensively growing towards other dimensions (spatial-physical) and consist and involve several other factors from personal or social matters that can be namely, age criteria, gender theories, cultural aspects as well as financial.

Researchers have suggested to separate social and organizational dimensions of accessibility from other factors such as geographic factors of accessibility as a concept (Murray et al., 2003). The terminology of 'social-organizational accessibility' for variables that are considered as non-physical to be represented and projected. These factors are deemed as constraining or fostering the process of receiving a service or to be able to obtain it. On a similar concept, Murray et al. (2003) further suggested that social aspects such as social barriers or preferences to be merged and looked as one in the context of accessibility (Murray et al., 2003). This was especially emphasized in a study conducted by Jia (2003) that reachability and accessibility are the same in definition with convenience, which can mean that the precept of accessibility can be illustrated using functional means of accessing a service or group of services and is much more complicated and vaster in comparison with sore analysis of distance from A to B as a physical mean of measurement. Henceforth, it was suggested that the ability to access services from the influence of socio-personal key elements to reach a desirable/desired activity with ease can be used for defining accessibility (Gregory et al., 2009).

As previously mentioned, researchers now tend to have described accessibility as a multidimensional concept in its nexus. It was stated in a study conducted by Byrne and Wolch (2009) that park accessibility is highly related to user characteristic of the park as well as features of the park. This is while another study conducted by Wang, Brown and Liu (2015) has taken a different approach towards the matter and designed an integrated model of accessibility for park with survey and data collection means in suburban areas in comparison with features of the park and in contrast with socioeconomic status (SES).

Regression models as well as spatial analysis were conducted for measuring physical and nonphysical factors for accessing urban parks. The results of their study were in consensus with the fact that the nature of park accessibility is a multidimensional one that consists of various factors that are/are not physical. Both aspects of physical matters alongside nonphysical matters have a significant and vivid relationship with accessibility concept. The research on this matter has extensive boundaries that are yet to be grown and discovered. For instance, some studies have focused on specific groups of society with specific needs and/or preferences, such as, people of color or those with lower income that are relatively more exposed to be vulnerable to have access to facilities (Sister, Wolch, & Wilson, 2010).

Perception of park access has been found to be significantly and positively related to income level as well as home spoken language (alternative for racial/ethnicity) as social and economic factors (Wang, Brown and Liu, 2015). This is in consensus with other studies that have stated population groups that have been selected from different cultural groups or economic status, show a different perception on the subject of park usage and accessibility (Byrne & Wolch, 2009; Hutchinson, 1987).

It can be understood from suggestions of the above-mentioned researches that social and economic background is highly effective for the perception of park access. This is while the literature consists numerous studies that are based on western cities and communities in the context and lacks adequate number of such studies within the region of Middle East and specifically Cyprus as a Mediterranean island. This is an indicator for further and more thorough research on this subject in other areas of the world such as the one selected for our case and to analyze and compare the results of various geographical targets and subsequently

diverse races, ethnicities, or backgrounds. This can further expand the understanding on the topic of park accessibility and its relationship with other factors such as socioeconomic variables and/or well-being elements.

Contributions of public parks extend to the fabric of our understanding upon the matters of urban structure and its economics. This is due to the fact that park access is related to urban environment as means of livability and that it enhances this aspect (Mccann & Ewing, 2003). In areas that have lack of park or can be called "park-poor" areas (e.g. inner-city), require implementation of various strategies to develop and increase green spaces through the city and these strategies (i.e. use/reuse remnant lands, or development of infrastructure for transportation options) are implemented or being implemented on a global scale (Byrne & Sipe, 2010).

The concept of green space and public parks constitute trivial and elemental of urban development in the world and this has been introduced by West and Japan, which shown considerable vitality in China nowadays (Shi, 1998). China has shown extreme internal migration from rural to urban areas and has had vast rates of growth within the urban areas. It is also noteworthy that the planning and development of parks has been after prioritized infrastructure development of real estate and transportation options within an urban area (Wolch et al., 2014). It was reported that China had green space ration of 12 m^2/capita on average basis. This was while the USA was reported to have a national median of 50.2 m^2/capita for green spaces and South East Queensland (SEQ) of Australia was reported to have an average green space with 154 m^2 per capita (BNFA, 2014).

The concept of park accessibility and usage is in this study focuses on the area of Gonyeli located in Lefkosa, Northern Cyprus. Measures of well-being were also used as part of the multidimensional concepts of park accessibility. In addition, park hierarchy elements such as utilities, location, number of houses and other variables have been included for better understanding. This study is thus different research from other studies conducted in Western countries such as United States of America, Australia and China. The difference expands from mere geography to aspects such as culture, ethnicity, and background.

2.2 Urban Parks and Health

Cities generally in the world are growing and therefore are more exposed to pollution and being congested (Blanco, Lemus & Grande, 2009). The lives of urban citizens can be improved through green spaces via provision of ecosystem services that are present in a wide variety and this can be seen more vividly on their health. Covering of vegetation, variety of sizes in green space, the welcoming of species, increasing the quality of environment, progress in public transportation systems and their proximity, facilitation and other services can be reached through well-allocation of green spaces (Fuller & Gaston, 2009).

Roy, Byrne and Pickering (2012) hinted that river banks, sports field and pitches, reserves and parks are all considered as public green spaces alongside greenways, trails, gardens, street trees, conservation areas for nature, and cemeteries or green alleys. Private green spaces consist of corporate campuses, compounds or apartments, private yards and backyards. Existence and abundance of urban green areas aid public health of the population as well as supporting the unity and integrity of ecological elements of the city. Green areas can act as filters of air and therefore, reduce air pollution and acoustic noise irritations as well as reducing temperature and balancing weather, which can be extended to withholding against storm water, and preserve groundwater and as a substantial mean, provide food (Escobedo, Kroeger, & Wagner, 2011).

Nowak, Crane and Stevens (2006) posit that considerable amount of airborne pollutants can be absorbed by trees and other vegetation, which yields in cleaner air and benefiting the atmosphere. Urban forests and covers have a key role in moderation of temperature via provided shadows, which cool the area they cover and greatly help residents to avoid heat related illnesses (Cummins & Jackson, 2001; Nowak et al., 1996) such as hyperthermia. There have been many studies conducted upon the matter of urban green spaces and health with focus and targeting of parks (Bedimo-Rung, Mowen, & Cohen, 2005; Kou et al., 1998). Mortality is an element that has been suggested to have linkage with lack of access to parks (Coutts, Horner, & Chapin, 2010).

Other studies have complemented the green area relationship to health as a protector of health (Villeneuve et al., 2012). In addition, parks provide physical services that are activities, which are motivated in the presence of a green area. This is significantly related to health and its progress towards a higher level and therefore decrease mortality and a number of diseases such as chronic (Woodcock et al., 2009). Similarly, many studies have shown the significant relationship that exists between parks and their proximity with activities that are considered physical (Brownson, Chriqui & Stamatakis, 2009).

It has been stated that alongside genetic variables that have vivid contributions (Stunkard et al., 1986), other characteristics such as behavior patterns or physical activities also are highly influential on the matter of obesity trends (Hill & Peters, 1998). Accessibility to parks, where the existence of physical activities is facilitated through recreational means, is a key element for adults in general and specifically beneficial for children to be active (Diez Rouxet al., 2007; Timperio, Salmon, Telford & Crawford, 2005).

In a study conducted by Giles-Corti et al. (2005), it was noted that attractiveness is crucial as well as the magnitude of open spaces. A considerable number of studies were conducted in Australia through surveys among several sections (cross-sectional), found that if the parks are being perceived as an esthetical place and are satisfactory, they can motivate physical activities on a greater and more explicit scale (Giles-Corti et al., 2005; Giles-Corti et al., 2013). These studies have highlighted several aspects, such as, minor traffic, existence of sidewalks and green vegetation i.e. trees and shops and markets retail).

Another study has stated that park use and other activities that are considered physical have been increased and enhanced after improvements. This is while the researchers have measured the aforementioned factors in prior to initiation of improvements (Veitch et al., 2012). As an extension to common research, Dahmann et al. (2010), have examined recreational programs within the municipalities of California and have found that there are some areas, which have lack/limited access to public programs that are recreational/active. These areas were located to be with higher density of population as well as projecting lower income levels. Their access to local or public environmental and recreational facilities was stated to be “inferior”.

Obesity can be improved, sustained and fostered through campaigns that are merely recreational or other the like programs as well as increasing the number of parks and/or green spaces, from which physical activities that are against obesity can be encouraged. Childhood obesity was under examination by Wolch et al. (2011). Wolch and others also noted that there are several factors that are deemed environmental and can be namely, foodscape, exposure to pollution and more specifically traffic and its density. This was extended to other nonphysical aspects that are more social-wiser, which can ben namely, employment status, income or poverty, and criminal activity/record. Their study found that accessibility of a park and the offering of recreational activities are highly significant in relation to development and fostering of obesity for children.

Empirical evidence has found that urban parks and green areas are in an extremely positive and significant relationship with psychological well-being and overall quality of life (Ernstson, 2013). Parks also have effects on stress and are known to be source for its reduction (Woo et al., 2009). Solitude, calmness and the opportunity to have them can be provided through urban green spaces for its residents and locals. This can be extended to a higher chance of interaction with greeneries and/or animals (Fuller et al., 2007).
Senses such as peace, tranquility, contemplation and rejuvenation can be feasibly reached through parks, when residents visit them (Kaplan & Kaplan, 2004). Self-esteem, mood and subsequently mental health can be improved through green exercises (e.g. physical activities).

On a similar basis, a meta-analysis conducted by Lee and Maheswaran (2011), have noted the existing relationship among various elements of psychological health, urban green space and their improvement. In addition, other meta-analyses studies have shown that stress level related to life events were less significant for the people who have had greater access to green areas in comparison to those people who do not have that access. This is another resemblance of green areas and their stress-repellent features (Groenewegen et al., 2006).

Other feelings such as, safety and belongingness are increased in the perception of locals and residents of a society via interacting in urban parks and their presence (Kou et al., 1998). Behavioral issues of children in specific, can be fostered through better accessibility to green

areas. Psychological issues and health can be positively affected by interactions with animals (species) as well as reduction in their symptoms of disorders such as, attention deficit (Fuller et al., 2007). This was established in other studies that children greatly benefit from interacting with animals and different species, especially in nature and or green areas. Their well-being and overall health can be enhanced significantly through such activities (Kahn & Kellert, 2002).

However, there can be factors that have a negative effect, such as air pollution that surrounds parks that can affect health negatively. Other factors such as safety concerns may be projectile for parks situated in highly trafficked areas. Activities such as walking (normal-pace and daily) or bicycling (daily) can encourage physical activities on a lifestyle as well as reducing air pollutants by using a smaller number of automobiles (Cavill & Davis, 2007). Transportation strategies that are not properly formatted for active forms of transportation can have a higher negative health effects on society, and more specifically on lower income segment of color in the community (Byrne & Wolch, 2009).

2.3 Hierarchical Levels and Accessibility Standards of Urban Parks

It is expected to see over a 70% of collective world population to be living in urban areas (cities) by the year 2050, which shows the significant rise of urbanization (UNFPA, 2011). This is a vital concern as urbanization process and its development follows distance and disconnection from natural environment and natural interactions (Kahn & Kellert, 2002).
The extensive range usage of urban lands and areas leads to a challenge for meeting the criteria for having or adding green areas to the infrastructure of a city or urban area through parks and other open spaces. Green areas and in particular neighborhood parks can provide easy access to their territories and therefore foster and contribute to well-being, health, and decrease stress, obesity, and mental issues, while enhancing social means and community exclusiveness, relatively improving activity and grow active lifestyle (Jones, Hillsdon, & Coombes, 2009). This is while all the aforementioned benefits can be explicitly affecting residents' lives when they are or can be easily accessed. Hence, this notion indicates that research upon the matter of urban parks and their usage and accessibility contains vital importance both for academia and decision-makers in action.

The usage of a specific park or green area can be formed and created on a proper manner if accessibility of that park has been clearly identified and made easy. It was stated by a study that if local parks provide easy access, it is perceived more usable for locals in comparison to large national parks. This was more obviously stated by those people of color (Byrne, Wolch, & Zhang, 2009). Following the footsteps of the aforementioned study, distance and the size of parks where focused in another study conducted by Giles-Corti et al. (2005), which found these factors to be highly influential in using public parks and that they can increase the possibility of visits.

However, several studies have stated that by changing measurements of accessibility, the empirical results may differ and significantly change the outcome of a research (Weber, 2003). Also, to be able to predict trends and other changes in human behavior and decision-making process is an extreme measurement, which can be affected by an array of variables, from which any of them can be significantly influential. Moreover, it has been found that there is a substantial difference among studies, in which accessibility is measured through subjective methods (perceptions) and those with other measurements, such as geographic quantitative methodologies (distance, or park per capita) (Bird, 2009).

Understanding and comprehending the process of human behavior and to be able to predict it (at least up to some level) is of necessity and significance to grasp the full spectrum of perception. This cannot be merely accessed through geographic access (Anon, 2006).

Quantitative methods are commonly and dominantly in light when it comes to measurement and methodological approaches to park accessibility and related subjects (Murray, O'Kelly, Kwan, & Tiefelsdorf, 2003). This is while extent of research upon the matter of perception of accessibility and geographic accessibility can have an influence in usage of park. Urban areas are constantly growing and as previously mentioned, it will grow for at least five more decades as it has been estimated.

Nonetheless, growth of population alongside several other factors that can be namely, environment decay, raise of temperature, and last but not least, a significant drop in the scale of green spaces and their availability to be used as open/green areas within urban

environments. It has been stated that urban green areas and/or spaces (UGS) can significantly enhance and foster the scale and level of quality of life as it has been described by OECD (established in 1961, having an extensive amount of quantitative data and scaling for quality of life measurements).

This is due to the fact that UGS can greatly influence temperature by equalization of heat and its transfer as a thermal measure (Cetin, 2015). Additionally, existence of UGS is crucial for mental health-related issues and stress that is caused by urban lifestyles and routine/daily life matters (Oliveira et al., 2013).

As quality of air in urban areas can be improved via existence of green areas and parks in particular, they are extremely vital for overall quality of life for the residents. Moreover, the presence of parks can add to property value calculation due to reduction in energy consumption rate.

Green activities and increasing availability of parks is in consensus with sustainability measures and means, which are burdening extreme levels of necessity for human life and its quality. The importance of this matter has been highlighted in several studies (Han, Lee & Lee, 2011). Cognitive strengthening atmosphere of physical and social activities as a mixture of urban service is an elemental factor for improving children's abilities in a fast-pace growing world of urbanization (Bird, 2009; Amoly et al., 2014).

Table of 2.1 of this study shows a variety of classifications that are defined in a hierarchical manner by authorities and decision makers for UGS (Anon, 2010). This is specifically designed for addressing diverse groups among users of green areas within urban territories. An instance of these classifications based on decision makers of UGS can be that a playground is defined to be the smallest unit for children before becoming teenagers – by master plan of Delhi. As playgrounds are deemed significant for development of children in their very young ages for provision of outdoor activity, which can be associated with their cognitive development as they spend their time within green areas, or in our specific case, parks (Dadvand et al., 2015).

Table 2.1: Hierarchical level and urban green space standards in different regions (Jia, 2003; Oh and Jeong, 2007; Van Herzele and Wilderman, 2003)

Classification of parks in America (Jia, 2001)			
Class	Area	Serving Population	Service Radius
Children's Park	200-400 m²	500-2500	Neighborhood (300-400 m)
Small Pleasance	200-400 m²	500-2500	Neighborhood (300-400 m
Neighboring Park	2-8 ha	2000-10000	400-800m
District Park	8-40 ha	10000-50000	800-5000m
Large Urban Park	>40 ha	>50000	Riding distance within an hour (by Car)
Regional Park	100 ha	Serving a larger region	Riding distance within an hour (by Car)
Specific facility	Including avenues, seashore, square, historic relic, flood plan, small park, and et		
Classification of Parks in Greater London Plan			
Parks smaller than 2 Ha in size		-	400m
Korean urban Green Spaces System (Oh and Joeng. 2007)			
Parks	Area		Catchment Distance
Children's Park	Over 1500	-	Less than 250m
Neighborhood park	Over 10,000	-	Less than 500m
Walkable area parks	Over 30,000	-	Less than 1000m
Local parks	Over 1,00,000		No Limit
City level Parks	Over 1,000,000		No Limit
Urban natural Parks	Over 100,000		No Limit
Cemetery parks	Over 100,000		No Limit
Sport Complex Parks	Over 10,000	-	No Limit
Minimum standards for urban green spaces for Flanders, Belgium (Van Herzele and Wiedemain, 2003)			
Functional level	Min. surface (ha)		Max. Dist. From home (m)
Residential green	-		150
Neighborhood green	1		400
Quarter green	10		800
District	30		1600
City green	60		3200
Urban forest	>200		5000

A variety of activities can be offered via different hierarchical levels of parks, from a neighborhood park to city level parks, ranging from spending few hours for physical or social activities and interaction to family scales for weekend camping or countryside areas for a full-day or two-day trip around the town (Van Herzele & Wiedemann, 2003). Therefore, it seems logical to see an interrelation and complementary relationship among various levels of park hierarchy levels and their accessibility, which is among the most important factors that have direct and significant effect on usage of that area. This yields in enhancement and growth within various aspects of life, which the most relevant to our topic of research would be highlighted as scale of quality of life.

The presence of urban green areas and its importance cannot be emphasized on its due. The scale of this importance is equal among various hierarchical categories of parks and green spaces, which all can be directly related to citizens' quality of life and its improvement (VanHerzele & Wiedemann, 2003). Based on Table 2.1 of this study and the references that are provided, playgrounds are noted to be in close distance and within adequate range of residential households. This further empowers the need of physical and social activities for children, whom can use the park on a frequent basis. The next stage on the hierarchical scale would be neighborhood parks (community parks), which can be in a distance of quarter of an hour but yet, within walking reach of residential units, that are followed by city level parks, which can be reached through mobility by automobile (all transportation types, including private or public). This classification can be within one-hour reach.

Other studies have focused on different aspects, such as preference for walking in accordance to access to a specific or group of green areas within the hierarchy levels. It has been stated that relevant to the users of parks and green areas, the preference of people using them also differs. Playground visitors tend to have a preference of very limited time for walking up to 5 minutes. This is while the frequent visitors of neighborhood parks prefer to walk for 10 to 15 min and those, whom visit community parks tend to walk for 15 minutes or more (Gupta et al., 2016). There have been numbers of studies, in which the focus and emphasis are on the matter of urban spaces, and in particular green areas and their accessibility (Sotoudehnia & Comber, 2011). However, majority of the aforementioned studies are cased within Western countries from Europe, the USA and Australia alongside

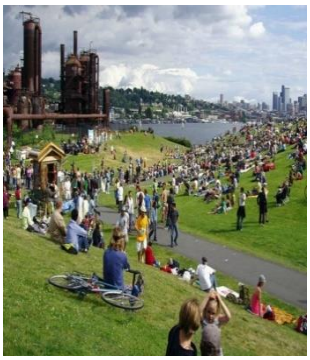
Japan. This leads to a lack of sufficient amount of data in the context of Asian countries, Latin America, and Africa in the concept of urban areas and in particular green areas within urban areas and this also expands to a significant lack in quality of life data in the previously mentioned areas (Anon, 2014). This has been stated and noted by various organizations, from which World Urbanization Prospects by (UN-DESA, Asia) can be named.

A number of definitions and terminology is presented in Table 2.1 that are based on standards for accessibility in the USA and other accepted areas such as Europe. These have been issued by various councils from different cities. Service radius is considered as mean of accessibility by the U.S system, while walking distance and its maximum is considered as accessibility by Greater London Plan. Additionally, catchment distance is the notion for Korean system and distance from home and its limit is the key accessibility measure in Belgium. This has been reported to be the significant amount of data that has been collected by various meta-analyses in relation to park hierarchy and from those people who are considered as frequent visitors to those parks (Gupta et al., 2016). Distances for lower ranks in the hierarchical levels in Korean and American system is defined to be from 250 meters to 300 and 400 meters respectively. This can be seen in Table 1. Short distances as mentioned can be very easy to use for primary schools and children in that age range, therefore the lower on the hierarchical level the park is, the better for these children's parents in regard to traffic, stress, and safety concerns (Van Herzele & Wiedemann, 2003). Areas, in which atmospheres are for children and design is to have the children and their parents at ease in regard to previously mentioned concerns, should be in very short distance and within the areas that household units and residential units are emerged.

2.4 Types of Park Hierarchy

Table 2.2: Types of park hierarchy

	Definition	Features	Examples
Regional Park	• Located in urban areas and/or in proximity and within range of transportation routes that are major. • Provide various activities that are recreational and can be related to urban or rural territories. • Provide nature-specific-related aspects of environment. • Includes facilities which can offer various recreational services. • Distance can be from 0 to 60 minutes of residential unit areas. • Size start from 100 acres • Must have enough space for collective territory population.	<u>Metropolitan</u> • Central location • High accessibility Have enough space for extensive numbers, such as schools and sport fields and to picnic areas or event areas with parking. <u>State Park</u> • Presents natural and environmental uniqueness (animals or plants, cliffs) • Provide adventure/active/passive actions with safety provided by personnel • Can be accessed by any transport • Have satisfactory facilities.	 Example 2 : Regional Park New York/ USA
Urban Park	• Very close to interchanges of transport and are average size. • Activity center • Distance from 5.0 km to 10.0 km from residential areas • From 40 to 100 acres • Can contain more than 50.000	• Having more than 60% soft cape elements. • Adequate facilities such as sport centers and play areas and parking or picnic areas.	 Example 3: Millennium park / Chicago

Local Park	• Relatively smaller sizes and are within town and city centers of service provision • town park • Perceived larger in comparison with a community park • Highly accessible from city or suburb. • around 3.0 km distance • from 8 acres to 40 acres • can host 12,000 to 50.000 people	• recreational programs provided in a small park that is public • Providing both passive and active activities (fishing, camping, walking, and sports).	 Example 4 : Richard Haag's Gas Works Park/ Seattle, WA
Community Park	• Public lands with public access. • Offer larger activities compared to neighborhood park activities. • Can hold various events and aspects (physical, social and cultural). • Approximately 1.5 km distance • Typical size of 2 to 8 acres • Can host 3,000 to 12,000 people	• Contains passive of active recreations • Commonly contains basic amenities (sport, court, lawn, picnic and parking area).	 Example 5: Milton community /Santa Maria Boulevard
Neighborhood Park	• Specifically designed for residents of within household areas. • Easy access by pedestrians or bicyclists, located on streets with sidewalks. • Distance 1.0 km • From 0.6 acre to 2.0 acre • Can contain from 1.000 to 3.000 people	• Offer a variety of recreational schemes. • Neighborhood social focus • Contain facilities (playground, seating area, open lawn, and pathways)	 Example 6: Neighborhood Park/ Singapore

Pocket Park	• Located among buildings. Small and/or mini-sized. • Transformed unused lands to green areas. • 0.5km from built-up areas • From 0.2 acre to 0.6 acre • Can host 300 to less than 1,000 people	• Specifically, designed and targeted area (e.g. young children or senior citizens) • Small open area, beach, picnic table, walkway, and planting boxes/pots can be found.	 Example 7: Makers Quarter Pocket Park San Diego / USA

2.5 Park Accessibility

Park accessibility in this study can be defined as the extent to which people can access the parks. Efforts to examine the accessibility of the park will be based on dimensions of accessibility which are derived from a study by Van Herzele and Wiedemann (2003) as noted in Figure 2.1. Thus, five park accessibility dimensions in respect of physical dimensions which looks at the area, proximity and walkability of the parks; transport dimension focuses on car ownership, travel time and costs while the knowledge dimension focuses on the availability of information about the parks. Social dimension will be examined in relation to social exclusion, ethnic groups, shared activities and safety. Lastly, the personal dimension looks at financial affordability, health, active lifestyle and availability of leisure time.

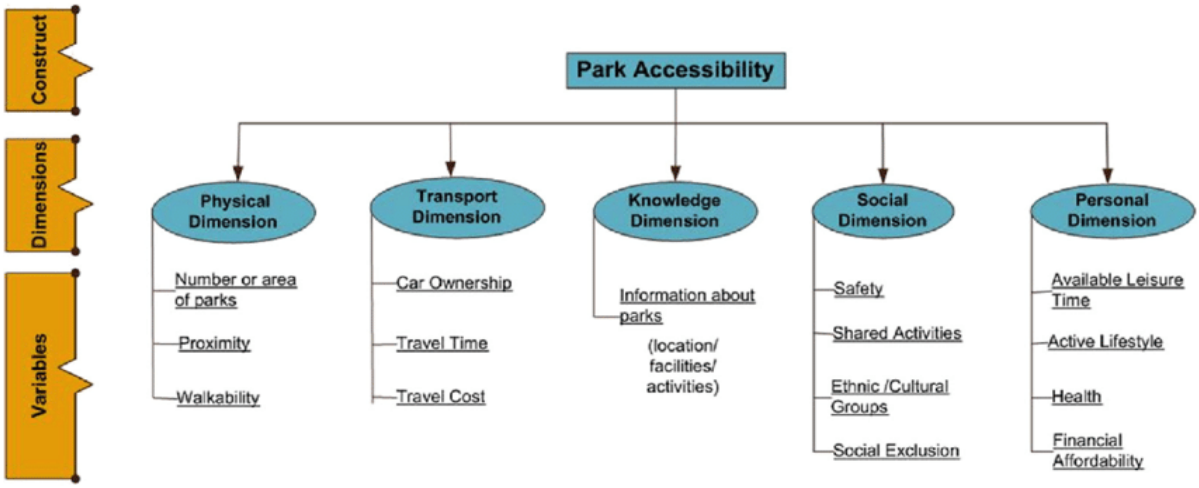


Figure 2.1: An integrated model of park accessibility (Van Herzele & Wiedemann, 2003)

The importance of parks has been mentioned in various studies as well as previously in this section. However, this importance carries on to be vital in many aspects such as built environment (Zhang et al., 2011). Their effects on social aspects alongside other benefits in economic state as well as health and quality of life and environmental/natural benefits cannot be neglected. Sports, social activities, cultural events, interactions, physical activities, recreational programs and other exercises are provided through green areas and in particular parks. Parks with higher levels of accessibility can subsequently encourage and foster physical activities, from which better health can be reached and therefore, as a result, quality of life increases (Anon, 2006). Figure 2.1 represents a broad multi-dimensional overview on the subject of park accessibility and its vast spectrum.

The calm and peaceful atmosphere provided by parks are essential for mental health to improve and be eased (Velarde et al., 2007). In addition, through parks, interaction among society and its people increases, which creates bonds and sense of belonging as well as attachment for the individuals as well as groups (Kearney, 2006). Trees are crucial for changing the built environment as parks are limited to a location, trees can be spread vastly on the city, ranging from streets and walls, corridors, and other spaces that are not merely within a park. Trees have direct and indirect benefits for residents and locals, which affects the overall quality of life of people.

The aforementioned benefits can be namely, reduction of physical and mental health issues such as stress (McPherson et al., 2011), decrease in risk for children to be exposed to asthma (Lovasi et al., 2008), combatting mortality for elderly (Takano et al., 2002), and moderation of fatigue as well as mental aggression (Kuo & Sullivan, 2001). For urban development to be sustainable it is crucial to note and highlight green infrastructure and its strategies to be implemented, which regards to the matter of nature manipulation or exploitation by urbanization, from which a natural injustice is the cause and the effect of such actions (Perkins et al., 2004). Studies have taken various aspects of environmental justice and injustice under research (e.g. food environment, food distribution, fast-food effects) (Hilmers et al., 2012). Moreover, studies have extended the scope of research to pedestrian areas with lower income levels and to the locations, where minor populations reside (Cottrill & Thakuriah, 2010). Various cases have been studies in this context, such as playgrounds

(Wells et al., 2008). Equity in context of spatial and environment have been under measurements and analysis by a number of researchers (Boynton-Jarrett et al., 2011).
A number of studies have focused on socioeconomic factors and status for the emphasis of their research in regard to park accessibility in neighborhoods (Landry & Chakraborty, 2009). It has been noted that minor populations, people of color or other ethnicities commonly have a longer distance to green areas in comparison to other people (white people) (Wolch et al., 2005). This notion has different views that can be deemed as contradictory (Timperio et al., 2007). This has been stated that due to the complex nature of this subject, it can be greatly influence by an array of social variables, which can be on individual level or neighborhood/society scale (Swyngedouw, 1996).

The more an area is crowded with population, the less vegetation it is consist of (Boone et al., 2010). Income level of neighborhood and its relationship with coverage area of vegetation is also noted in several researches (Boone et al., 2010). Among social factors that are relevant and influential to the park accessibility and usage context, schools and education are another factor. Generally, areas hosting higher education level demographics are more likely to have their parks in a better physical shape and image (Heynen & Lindsey, 2003). Backgrounds of individuals, their identity and groups are other factors, which can be named in this aspect. The perception of neighborhood on green spaces and their usage and configuration in relation to the existing social activities is a matter to note (Boone et al., 2010).

There are many methodologies to be undertaken for measuring accessibility and its means in the context of green spaces. Container approach takes a numerical approach from a specific geographic unit, which can be a neighborhood (Maroko et al., 2009), while others can consider for distance traveled by different transportation systems (Kessel et al., 2009). High quality data consisting data based on geographical means can be used in other methodologies (Landry & Chakraborty, 2009). Proximity level between two locations can be defined as accessibility according to several studies (Tsou et al., 2005).

Coverage methodologies consist of kernel density estimation, Thiessen polygons, gravity-based service area, floating catchment, and buffer analysis (Lee & Hong, 2013). Other

studies have used different techniques and methodologies in dealing with this phenomenon, such as Euclidean distance (Brown, Schebella & Weber, 2014; Cavill & Davis, 2007). Its linkage with transportation systems and means has also been stated by several studies (Jiao et al., 2012). Other factors such as traffics, speed limits for driving, the system of public transportation such as busses, waiting time, turn or direction restricted streets are also related with this context and therefore must not be neglected (Cavill & Davis, 2007). These studies have significantly furthered the context of research and approach methodology to park accessibility and usage. However, this notion does not mean that the literature or actual planning and industries are not in need of further exploration of the topic as well as unlimited aspects of further analysis or new discovery. Next chapter of this research presents a number of case studies that are most relevant and recent to this paper. Data gathered in the following chapters are the sole work of the researcher.

2.6 Chapter Summary

Based on the given literature, it can thus be noted that there are a lot of benefits that can be obtained from the use of urban parks and most of them are respect of the natural environment, lifestyles, mental and physical health. Of huge importance is the idea that park accessibility is a key factor in defining and explaining the depth of park utilization and this tends to affect a lot of social aspects. When dealing with park accessibility, it is paramount considers aspects such as time and distance and geographic factors of accessibility as a concept. On the other hand, considerations should be made that the concept of green space and public parks plays an important part in urban development and social well-being However, the existence of parks in urban areas does not always lead to improved health because of the existence of negative factors such as air pollution. Also, other factors such as safety concerns may be projectile for parks situated in highly trafficked areas. But much of the activities that surround the utilization of parks revolves around the use of park facilities. It is thus important to ensure that the parks have adequate and standard facilities. The availability of transport, the distance to park and costs incurred to get to the park are some of the key concerns that determine the utilization of parks.

An evaluation of the given literature has shown that by changing measurements of accessibility, the empirical results may differ and significantly change the outcome of a research. This is important especially if logical and undisputed logical arguments are to be established. With the increased growth in world growth, environment decay, rising temperature, and a significant drop in the scale and availability of green spaces and their availability; are some of the key challenges that can interfere with efforts to improve the accessibility and utilization of parks. As quality of air in urban areas can be improved via existence of green areas and parks in particular and this is in consensus with sustainability measures and means, which are burdening extreme levels of necessity for human life and its quality. Different parks have different accessibility and utilization levels as noted by the different hierarchical levels of parks. Such considerations must be considered in order to determine how urban parks should be developed and which facilities should be added. As a result, it can thus be said that there is an interrelation and complementary relationship among various levels of park hierarchy levels and their accessibility. Park accessibility and utilization are mainly influenced by 5 dimensions and these are physical, knowledge, social and personal dimensions. All these dimensions are the key elements that determine the extent to which the parks can be accessed and utilized. It is thus important for urban planners and designers to ensure that they consider these dimensions when designing urban plans and parks.

CHAPTER 3
PREVIOUS CASE STUDIES

3.1. Case Studies

Efforts to look at the accessibility and utilization of the parks will be based on an analysis of the widely known urban parks whose accessibility and utilization are in line with urban parks standards. Hence, the constitute a standard base upon which other parks such as Gönyeli urban parks can be compared with so as to determine their level of development, accessibility and utilization. Such an analysis will be based on the contemporary design, design strategy and sustainability of the parks and how they contribute towards improving the accessibility of the parks. This is important because it helps in making comparisons with Gönyeli parks to determine if they match these standards or not. The case studies that were looked at are South Park in San Francisco, San Francisco's Burrows Street Pocket Park and Teardrop Park (Neighborhood Park).

3.1.1 Case Study 1: South Park in San Francisco

South Park is one of the ancient public spaces that is located in San Francisco and was designed by Fletcher Studio in 1852 (inhabitat.com, n.d). It is an English garden, opened to public in the 19th Century. The park's user profile is diverse and rich.

3.1.1.1 Description of the park

As it stands, the park forms a strong cultural and economic link and this is because it is situated at the heart of the city. Such a position makes it easily accessible to aspects such as design and tech businesses, museums, culture centers and the city's business.

The area's population is variable, there are different economy type population living in this zone. More importantly, is that there are commercial real estates and residential hotels of

high value that are located next to it. Due to its big size, the 1.2-acre park was designed in flexible and functional manner that allows it to accommodate a lot of people of different backgrounds and diverse needs and wants.

Figure 3.1: South park in San Francisco

3.1.1.2 Contemporary design

Contemporary design can be defined as the extent to which the designs are modern or simply modern design (Chow, 2013). The park is designed in 2017 with the sole aim of or providing flexible spaces and social amenities that are beautifully designed and well-choreographed. The formal design of the park was necessitated by the following factors;

- Use of the park
- Social nodes
- Points from which the park can be accessed
- Circulation patterns
- Existing structures
- Surrounding natural features such as trees.

The park has a lot of colorful and drought-resistant plants that are arranged using scales of plazas in a linear way along every single walking passage that connects the park to other various social amenities and public spaces.

3.1.1.3 The design strategy of the park

In this study, design strategy refers to the design models and frameworks that are used to design the parks. The design strategy is composed of four tightly bound material systems and these are:

- Short surrounding walls.
- Infiltration basins that are vegetated.
- Sloping meadows.
- Modular paving units that are expandable.

3.1.1.4 The design of the park

The design is composed of a series of elements and process and these are;

- Long surrounding walls that help to provide protection, maintain quality standards, define spaces, and offer places to seat away from the streets.
- Site-cast concrete paved tectonic system. These factors make it easy to have a modulation path that is coherent in the width in relation to the contextual spatial desires. This is also because the paths have edges that have fine-grain adjustment that easily responds to match site-specific conditions.
- A customized ‘universal’ play area.
- Rounded berms and mounds that are used for a lot of things such as offering access to both formal and informal play facilities and space that have a well framed structure.

3.1.1.5 Sustainability of the park

In terms of sustainability of the park, it was observed that;

- The design of the park is ecologically sustainable because it has an irrigation system that does not depend on the city's water supply but rather uses rainwater collected on-site.
- The park is also composed of bio infiltration gardens and drought resistant plants.
- The park can also be said to be socially sustainable as it in a position to cater for the diverse needs of people from different economic spheres population by providing access to public play areas that can be used by individuals of all ages.
- The park has no fences and that makes it easily accessible to the public while the short concrete walls serve as both protective and seating purposes. Hence, making it a good place that stages daily life events.

On the other hand, South Park can be said to be socially and ecologically sustainable in the sense that it has a combination of contemporary aesthetic, parametric and historical design that help to offer an evolving, magnetic and delightful place for use and building connection.

Figure 3.2: Sustainability features of the park

3.1.2 Case Study 2: San Francisco's Burrows Street Pocket Park

San Francisco's Burrows Street Pocket Park is located in San Francisco, USA and was designed by the Lincoln Reimagine Project in 2014 (inhabitat.com, n.d). The Burrows Street Pocket Park officially opened in 2014 with a landscaped hillside of local plants, sculptural street-side seating, and a beautiful mural by SF-based artist Jason Jagel. Inhabitat was on-scene at the ribbon cutting ceremony to bring you a first look at this new public space.

3.1.2.1 Description of the park

The park is the result of many months of planning by Architecture for Humanity, Architectural Digest, the City of San Francisco, and the Portola Neighborhood Association, and it was funded by Lincoln as the third edition of The Lincoln Reimagine Project. Burrows Street is a one-mile road in San Francisco's Portola neighborhood that dead ends at the 101 freeway. The area was once prone to vandalism and illegal dumping, and noise from the adjacent freeway made it an unpleasant place to visit.

The Lincoln Reimagine Project worked with local designers and the community to transform the space into a welcoming public park (inhabitat.com, n.d). What was once a fenced-off slope now features landscaped pathways and trees that will grow to buffer noise from passing traffic. Artist Jason Jagel painted a vibrant mural that depicts elements of the neighborhood wrapped in a warm embrace, and Rebar designed a set of sculptural tables and seats that provide passersby with places to rest and congregate.

Speaking about the park, Lincoln Design manager Solomon Song said: "It had to be inviting it had to be something that people see and recognize as an inviting space. if you look at the design of the benches, normally benches are hard and rigid that sends a signal that you're not wanted there. We tried to use the design language that we used in the Lincoln MKZ, which is inviting and elegant.".

3.1.2.2 Design elements of the park

The design elements of San Francisco's Burrows Street Pocket Park are made up of the following elements;

- Trees and green space implementation
- Noise buff
- Comfortable benches
- Environmental design
- Friendly environment
- Public park (Pocket park) transformation
- Complex irregular space
- Well-coordinated buildings whose height ranges from 210 feet to 235 feet.

3.1.2.3 Design strategy of the park

The following aspects are important when looking at the design strategy and they must be considered at all costs;

- Analysis of the site and also in relation to post-occupancy.
- An oversight of the construction process.
- Examination of tender bidding process and contract documents.
- Use of better marketing materials and capital campaign methods.
- Adoption of green building practices and holistic design.
- How the design process was done to include community-related aspects and issues?
- Sustainability.

The park was designed by Engineered Artworks and is situated in a busy commercial district that offers a place community members and visitors to gather, relax and enjoy life (inhabitat.com, n.d). This park serves as an example that it is possible to change urban

ecosystem of any city into better looking cultural and social spaces that improve the social ecology of the street and enrich the community's experience.

Figure 3.3: Social and cultural spaces

Figure 3.4: Site map of pocket park

3.1.3 Case Study 3: Teardrop Park (Neighborhood Park)

Teardrop Park (Neighborhood Park) is covers a space of 1.8 acres and is located in Lower Manhattan, USA and was designed by Michael Van Valkenburgh in the year 2004 (inhabitat.com, n.d).

3.1.3.1 Description of the park

The construction process of the park is still ongoing and this made it possible to introduce better and sustainable designs and public spaces to the park. As a result, it was awarded ASLA Design Honor Award in 2009.

3.1.3.2 Design elements of the park

- Children friendly
- Urban child design
- Water features
- Natural stone
- Scaled design
- Plants found in the park provide a good habitat for migratory and native birds.
- The park's soils are self-sustaining and does not require the use of things such as fungicides, herbicides or pesticides and chemical fertilizers.
- The southern part of the park is shady and is composed of a water playground, "theatre steps", two sand pits and a long slide. On the other hand, the accommodates too much sunlight to penetrate the broad lawn of the entire un-programmed play space. This side of the park however has things such as a perched gathering area and a small wetland playing path.

3.1.3.3 Design strategy of the park

- The design strategy of the park is socially sustainable and accommodates a lot of people from different social backgrounds with 69% of the 200,000 children that visit the park every single year having enjoyed from constructive functional and dramatic activities and 72% from physical activities offered by the park (inhabitat.com, n.d).

3.1.3.4 Environmental contributions of the park

- The construction process of the park was deemed to be environmentally sustainable as it was discovered that it made it possible to reduce carbon emissions by 1,776 lbs, diesel usage by 80 gallons and wastage of stones by 60 tons.
- Contributed to the increase the vegetation of the city by 99.5% establishment through the planting of 3,260 woody trees and shrubs.
- Retains good nitrogen levels.
- Reduces water wastage.

3.1.3.5 Sustainability of the park

The construction of the park was totally based on the principle of sustainability in its diversity and this greatly influenced construction activities and the design process. As a result, both the materials that were used and the activities of the contractor well-regulated to ensure that they adhere to sound and sustainable practices (Bedimo-Rung, Mowen, & Cohen, 2005). Sustainability practices carried out at the park went on to include things such as the use of Treated and recycled graywater, fungicides, herbicides and pesticides, organic soils and maintenance regimes and efforts to ensure that their underground storage pipes that supply water to meet the park's irrigation needs.

Figure 3.5: Sustainability features of teardrop park

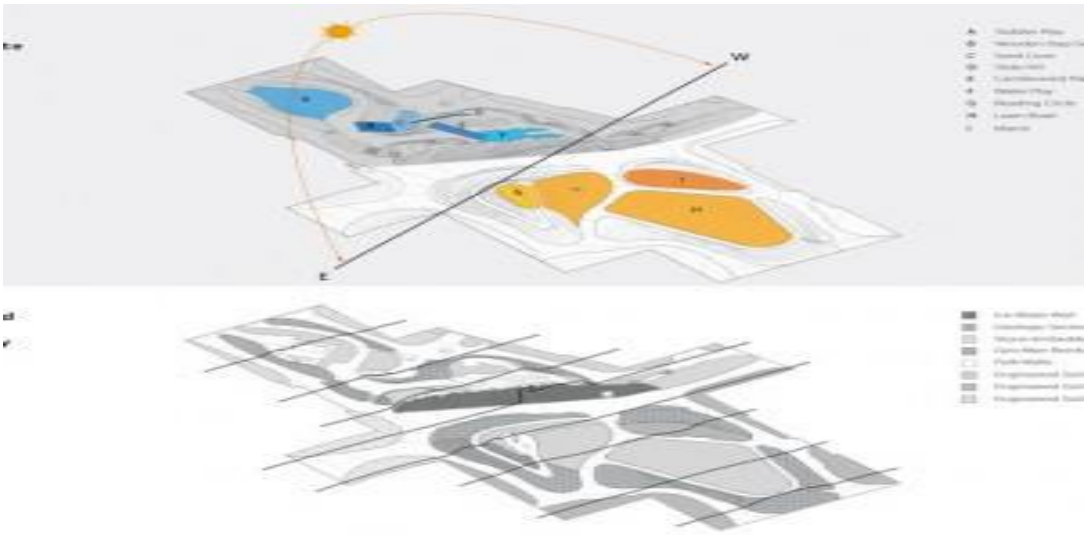


Figure 3.6: Site plan of teardrop park

3.2 Passive and Active Parks

Passive and active parks are the two most distinct ways that can be used to distinguish recreation areas. When a recreation area is in need of a lot of development and urban character, the area is known as an active recreation area (Bedimo-Rung, Mowen, & Cohen, 2005). An examples of active parks or recreation areas thus includes things such as skateparks, gymnasiums, swimming pools, ball fields and playgrounds. Active areas are also charactrerised by a lof of high costs and this is because of maintenance work that must be carried out on them. Hence, they are often charactersied by a lot of management interferences or activities. On the other hand, passive parks focus on open spaces found in parks with a sole aim of conserving the natural environment (Brownson, Chriqui & Stamatakis, 2009).

As opposed to active parks, passive park are less costly to maintain and examples include rails, benches, picnic areas etc. the other aspect that can be noted with passive parks is that the associated level of management is very low (Dadvand et al., 2015). These differences will allow comparisons to be made between urban parks found in Gonyeli.

3.3 Chapter Summary

Examinations made from the three case studies reveals that it is important for contemporay urban parks to have sustainable urban designs. This is important not only towards the environment but also towards improving the quality of social lifestyles of community members. Observations can be made from these case studies that looking at the accessibility and utilisation of the parks alone, is not sufficient. But, it is also important to consider the design elements, design strategy and sustainability of the parks. Implications made from the case studies also suggest that Gonyeli efforts to examine the accessibility and utilisation of Gonyeli urban parks should also be done by looking at their design elements, design strategy and sustainability.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Research Method

The current study deems a qualitative research method to be applied on this topic to better understand the elements and factors included. Therefore, this study will conduct a questionnaire survey that is based on studies dealing with park accessibility and usage to collect primary data from the respondents. The study also relies on the use of case studies so as to enrich the empirical basis of the study. Field studies were also carried out and this includes personal visits and examination of the study area which in this case is Gönyeli together with Yenikent and are 25 Km^2 in size.

4.1.1 Location and maps of Gönyeli

The researcher has conducted several physical analysis of the locations of parks. These physical observations enable a better perspective on the area as well as the notion of each park. This can yield in more accurate results and relatively, better informing the respondents. This is followed by a set of hierarchy (in parks and green spaces) questions to better understand various aspects of urban design and its fetches.

The following maps and photos are specifically designed and gathered by the researcher for the purposes of this study. Several in-person visits have been made to all the marked locations in the area as well as self-administered survey, which was done in-person by the researcher. Additionally, photos and maps were virtually designed using AUTOCAD software in Windows platform. Moreover, active and passive sites have been highlighted through this chapter for better understanding the land usage and distribution of green or unused areas in the region. Near East University has been highlighted as a landmark for navigation. Furthermore, a boundary of 300 meters is also selected for the location and

alignment of parks in the area for further clearing the location of this study and enhance geographical measures of this research.

These maps are the result of on-spot, in-person assessments that were conducted by the researcher in the area of Gönyeli during summer 2018 (June to August). During this period, all marked locations that are shown in Figure 4.4 have been visited by researcher himself for collection of data as well as personal observation, which is an aspect of quantitative and primary data collected. Images, photographs and map (e.g. google earth) analysis were conducted to better understand the existing usage and accessibility of parks in the area.

Figure 4.1: Arial map of Gönyeli

4.1.2 Research area-Gönyeli

Figure 4.2 shows the existing parks that are found in Gönyeli including all the green areas and empty land that is available for future urban development. The legend map of Gönyeli is important because it helps to provide details about the availability of land that can be used for green spaces. It can also be seen in Figure 4.2 that some of the land is idle and this provides more room for future urban and park development.

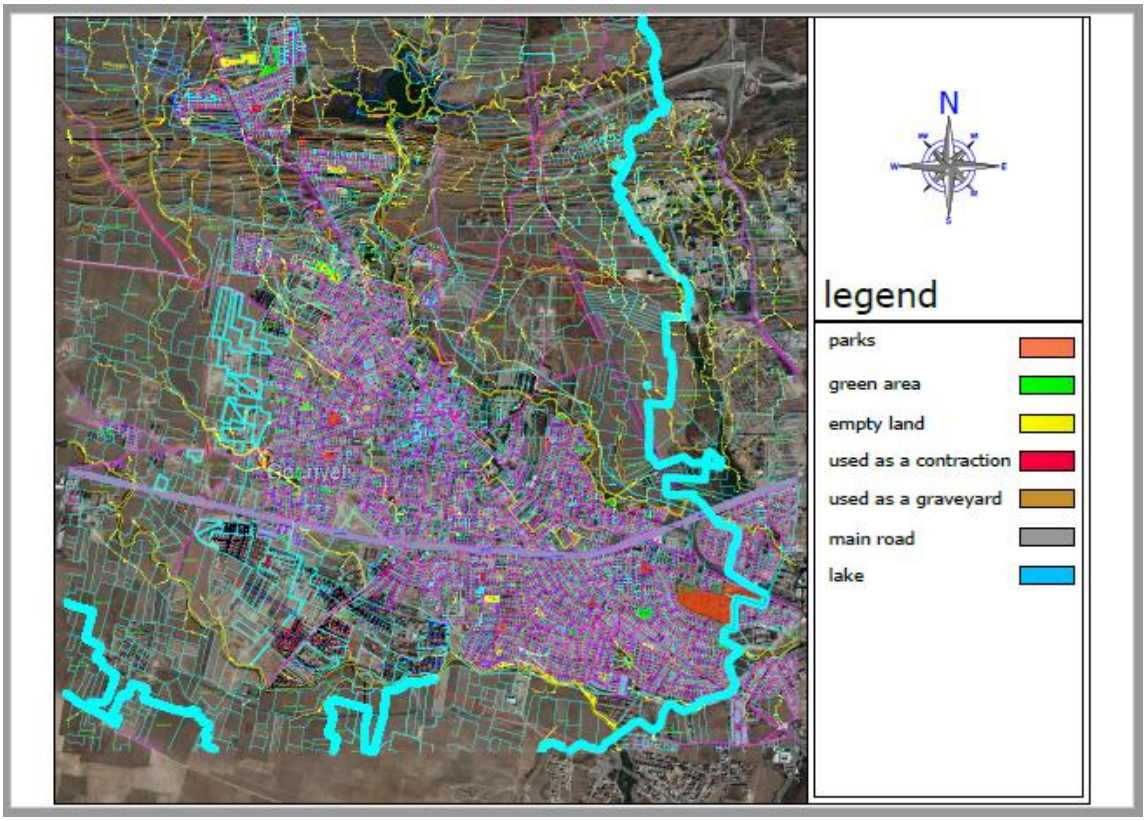


Figure 4.2: Legend map of Gönyeli

The distribution of green areas in the area can be greatly modified or developed. This can be seen through the gathered data as shown in Figure 4.3 that the area clearly contains numerous passive areas, which can be used or transferred into green areas/spaces. This can lead to a better quality of life for the locals as well as having extremely positive effect on weather and balance of it that is related to higher levels of green and vegetation presence.

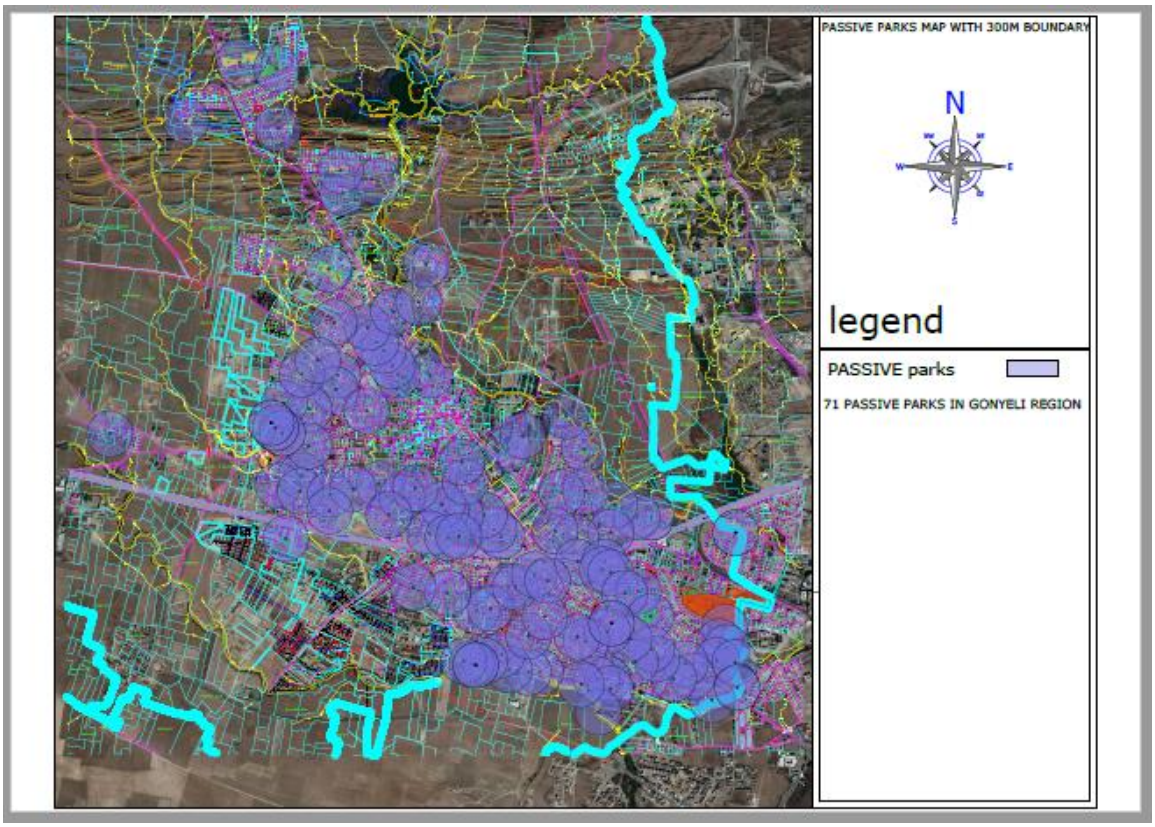


Figure 4.3: Number of passive parks in Gönyeli

Figure 4.3 shows that there are (71 passive) area parks in Gönyeli and many of these areas are not in use or are in conditions, which cannot be used as a park due to the land not having sufficient size or shape for this transformation. However, as it was presented in last chapter of this study, even small areas can be designed in accordance with needs of the area and its demographic population to improve their quality of life as well as motivating their lifestyles to be more active with transforming several relatively small areas into creative, chic, and accessible green areas for promotion of whether physical or nonphysical activities for locals (or both).

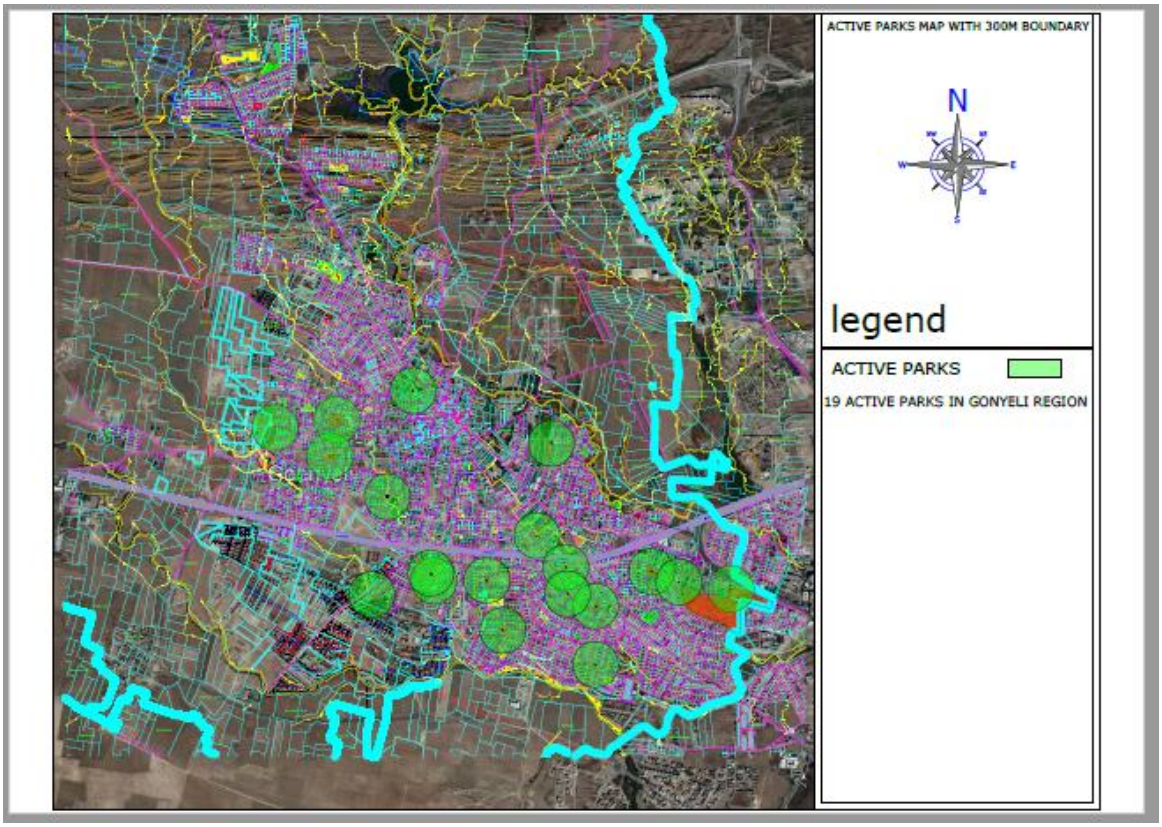


Figure 4.4: Number of active parks in Gönyeli

It can be noted in Figure 4.4 that there are (19 activive) areas in Gönyeli and this provides ideas of how much work is required to maintain them. This also provides further details of the extent to which Gönyeli municipality is involved in managing the parks. Hence, this possibly suggests that the urban planners and designers are making frantic efforts to improve accessibility and utilization of the parks. A combined graphical description of both active and passive parks is shown in Figure 4.5.

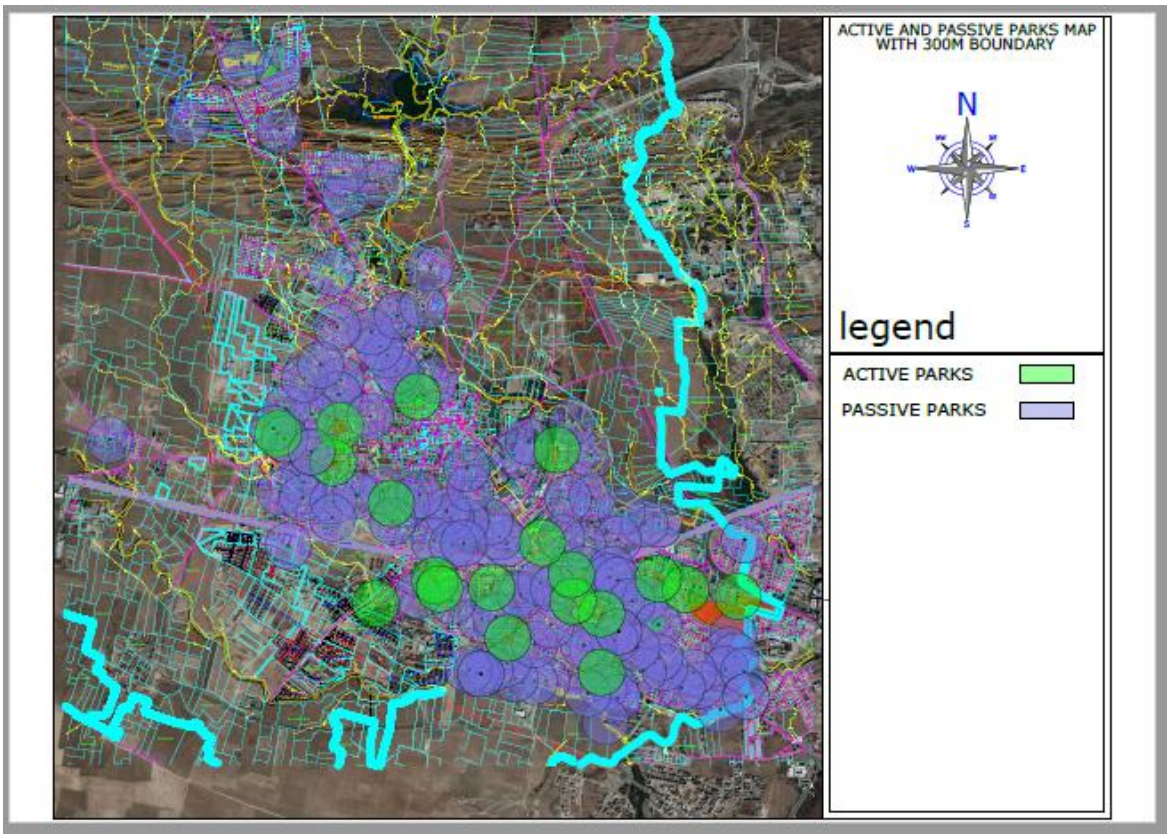


Figure 4.5: Active and passive parks in Gönyeli

Based on the field trips that were undertaken, it was noted that there are differences in times of visit in regard to number of visitors. This can be due to several factors such as working hour, summer school/courses, weather temperature, or similar factors that are not included in this study. However, we do acknowledge their existence and other factors, which may be influential, yet remain unaccounted for in this research as our method defines. Noting these variables is beneficial for research to consider control variables as well as noting the unknown that is critical for the world of academia for further investigations.

4.2 Questionnaire Survey

Foremost, a questionnaire was used in this study because it contains accessibility analysis specific questions to measure the responses from participants. This will enable us to determine the accessibility of the parks in this area. In addition, the survey also consists of usage analysis questions, from which it can be derived that how these park function in regard to the usage from people's perspective. The questionnaire is composed of two sections, demographic section which covers information pertaining to gender, age, education level, marital status and year of residence. The second part of the questionnaire is the informative section which attempts to acquire information about the accessibility of the parks. This section is based on a 5-point Likert Scale with values corresponding to strongly agree, agree, neutral, disagree and strongly disagree. These questions will seek to determine among others;

- Whether the residents are satisfied with the parks.
- How they view the parks in terms of accessibility.
- Whether the parks have the necessary and up to standard facilities.
- Possible suggestions or improvements that can be used to enhance the accessibility and utilisation of the parks.

4.3 Population and Sampling Method

The area of Gönyeli together with Yenikent is 25 km^2. This area was reported to have 28000 populations in 2011. It also contains an approximate number of 11200 houses, from which we can estimate a number of 45000 (11200 x 4 = 44800) population. According to the most recent sample size calculation methods a sample size of 381 respondents was calculated for this research.

Due to the limits and restrictions of this research, a number of +350 respondents will remain within the 95% level confidence, which means the confidence interval of the data will remain within 5% that is proximity of the population of 44800 on p-calculated-value (American

Marketing Association, Creative Research Systems, 2018). This enables the researcher to conduct statistical analysis upon the data collected.

The survey is based on ethical means of survey design and is anonymous. Thus, the population size is 44 800 residents residing in Gönyeli, North Cyprus and a random sample of 380 residents was used in this study.

Participation is completely voluntary and respondents are not asked direct questions such as income, religion or personal interests. In addition, respondents are informed of means of this research and are aware of data confidentiality matters.

4.4 Data Analysis Tools and Methods

The collected findings were analysed using Statistical Package for Social Sciences (SPSS) 22. Graphical images of the case study which includes active and passive maps were done using AUTOCAD. Also, descriptive statistics and frequency tabulations were used to analyse the collected data.

CHAPTER 5
RESULTS

5.1 Results of Data Analysis

Table 5.1 and Figure 5.1 show that most of the people have been staying in Gönyeli for more than 7 years as represented by a frequency of 197 people which equates to 51.8% of the people. The least number of years' people have stayed in Gönyeli is less than 3 years and 51 people have been staying in Gönyeli for than 3 years. 34.7% of the respondents have been staying in Gönyeli for 4 to 6 years.

Table 5.1: Duration of residence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 3 years	51	13.4	13.4	13.4
	4-6 years	132	34.7	34.7	48.2
	+7 years	197	51.8	51.8	100.0
	Total	380	100	100	

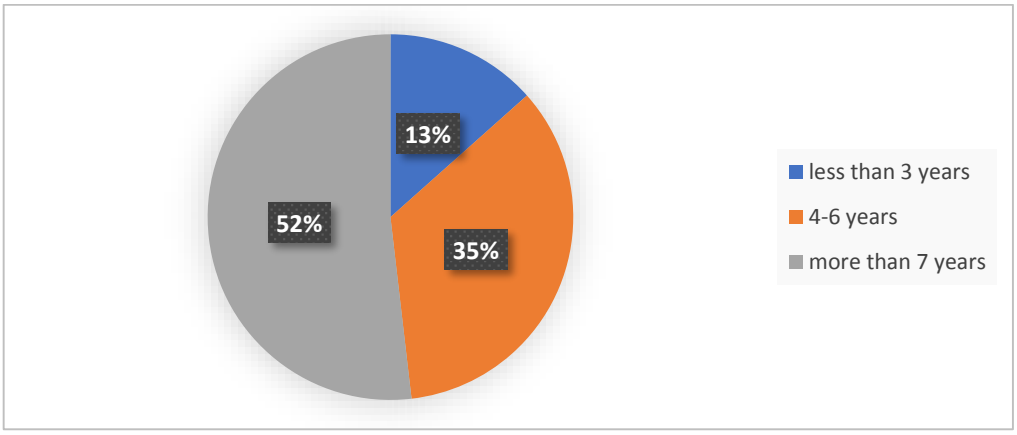


Figure 5.1: Duration of residence

Table 5.2: Age of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 18 years	36	9.5	9.5	9.5
	19-25 years	116	30.5	30.5	40.0
	26-30 years	135	35.5	35.5	75.5
	31years and above	93	24.5	24.5	100.0
	Total	380	100.0	100.0	

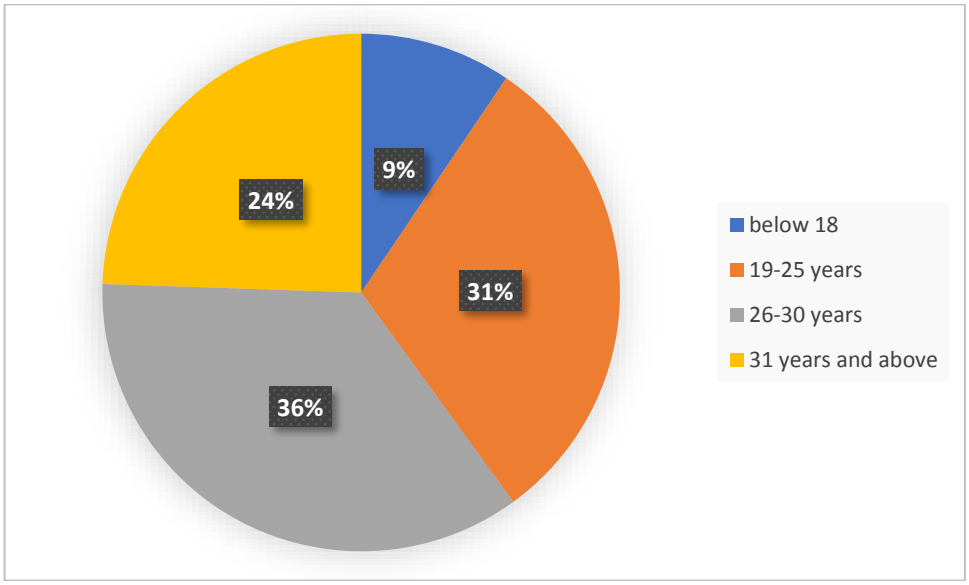


Figure 5.2: Age of the respondents

The above Table 5.2 and pie-chart 5.2 present the demographic variable of age for the respondents. As it is shown, the majority of participants are between 19 to 30 years old and the lowest amount is for those below age of 18 with only 9.5% of the whole sample population. This shows that the young generation are more likely to use the parks and attend to use the facilities and park designated areas in this region.

Table 5.3: Educational qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school	106	27.9	27.9	27.9
	Undergraduate	132	56.6	56.6	84.5
	Postgraduate	197	15.5	15.5	100.0
	Total	380	100.0	100.0	

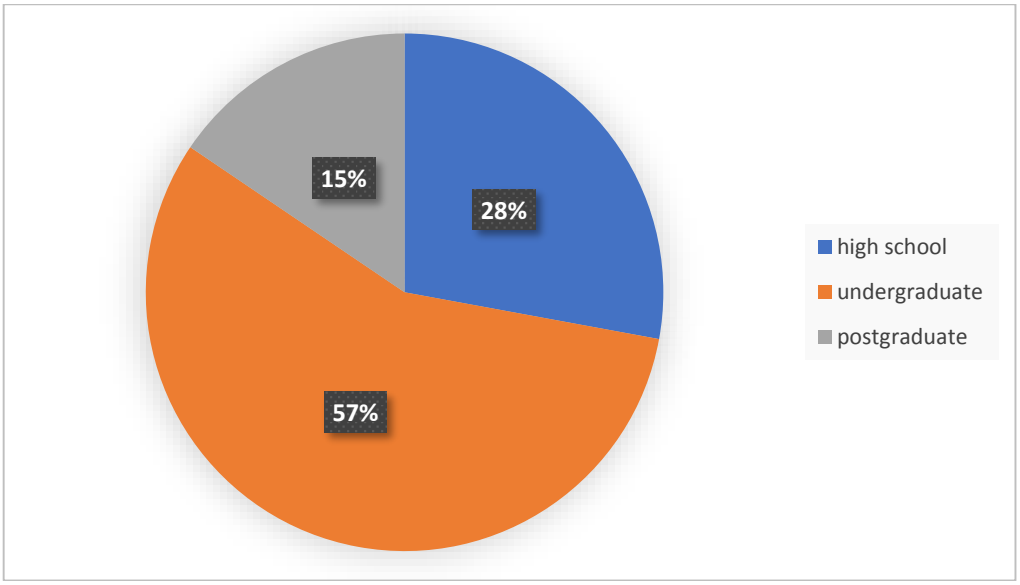


Figure 5.3: Educational qualification

Table 5.3 and the relative chart present the education level of participants in our survey. The majority goes to undergraduate group followed by high-school graduates and then postgraduates respectively with 56.6%, 27.9% and 15.5%.

Table 5.4: Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	182	47.9	47.9	47.9
	Married	193	50.8	50.8	98.7
	Window /Divorced	5	1.3	1.3	100.0
	Total	380	100.0	100.0	

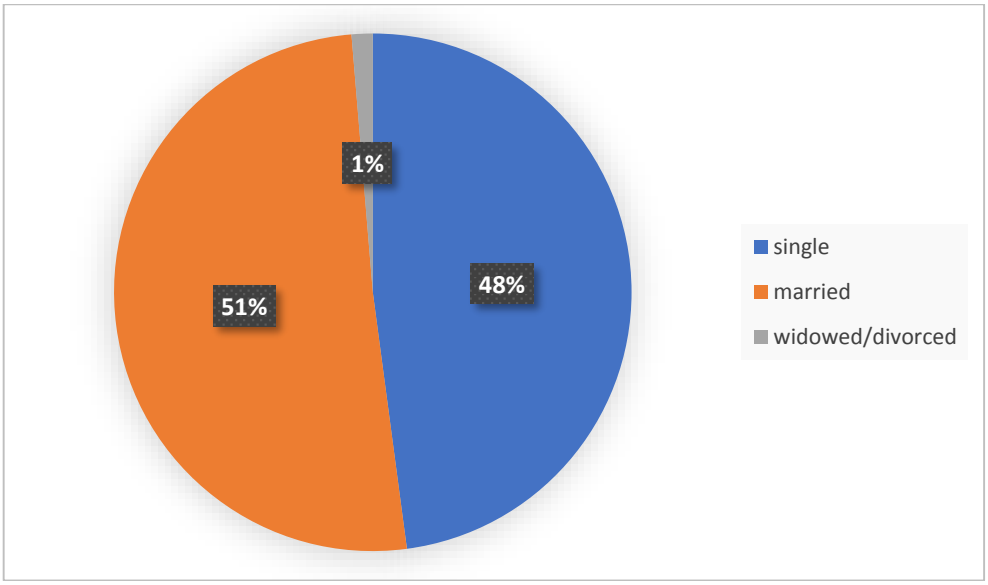


Figure 5.4: Marital status

Table 5.4 is dedicated to marital status of participants and as it is shown, married people with 50.8% have the highest level followed by singles with 47.9% and then widowed or divorced with 1.3%.

Table 5.5: Closeness of the park to work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	59	15.5	15.5	15.5
	Agree	83	21.8	21.8	37.4
	Natural	59	15.5	15.5	52.9
	Disagree	157	41.3	41.3	94.2
	Strongly Disagree	22	5.8	5.8	100.0
	Total	380	100.0	100.0	

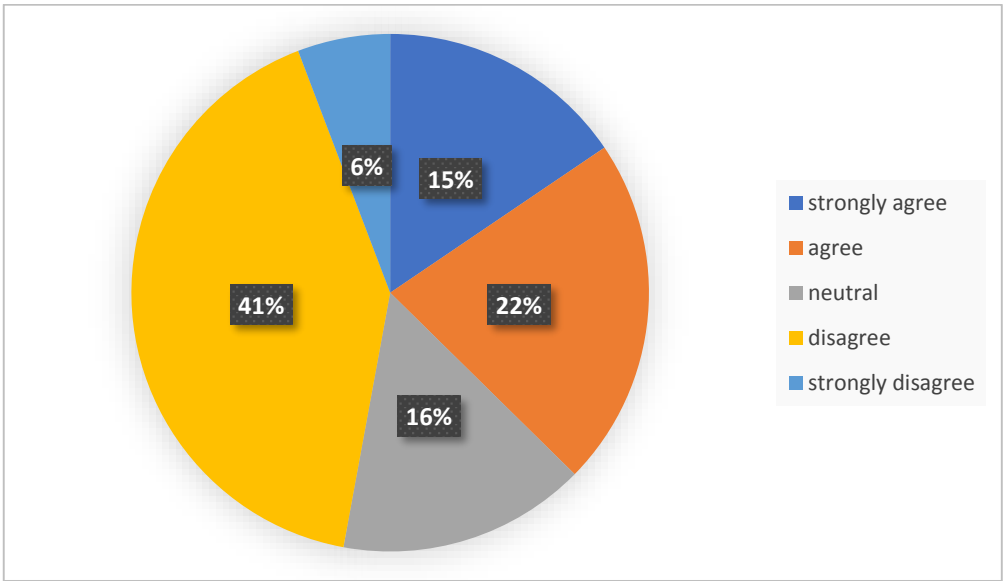


Figure 5.5: Closeness of the park to work

The results shown in Figure 5.5 do not meet the required standards given by the dimension of accessibility established by Van Herzele and Wiedemann (2003). Hence, possibly showing why most people consider the parks as inaccessible and have low utilisation levels. It is thus important to ensure that the parks are conveniently located so that any person can easily access them.

Table 5.6: Closeness of the park to homes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	19	5.0	5.0	5.0
	Agree	110	28.9	28.9	33.9
	Natural	108	28.4	28.4	62.4
	Disagree	118	31.1	31.1	93.4
	Strongly Disagree	25	6.6	6.6	100.0
	Total	380	100.0	100.0	

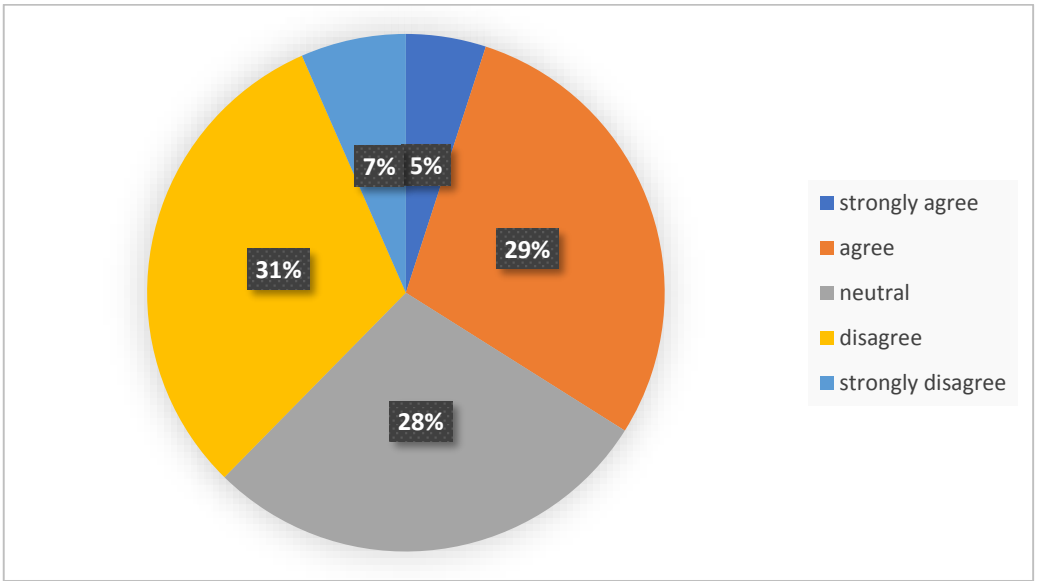


Figure 5.6: Closeness of the park to homes

There is some relative uncertainty and disagreement that the parks are close to people's home and this is in contradiction to the ideas given by Van Herzele and Wiedemann (2003). Hence, in order to improve park accessibility and increase utilization levels, it is important for urban designers to ensure that the parks are closely located to people's homes.

Table 5.7: Location of the park in suitable area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	2.6	2.6	2.6
	Agree	86	22.6	22.6	25.3
	Natural	127	33.4	33.4	58.7
	Disagree	91	23.9	23.9	82.6
	Strongly Disagree	66	17.4	17.4	100.0
	Total	380	100.0	100.0	

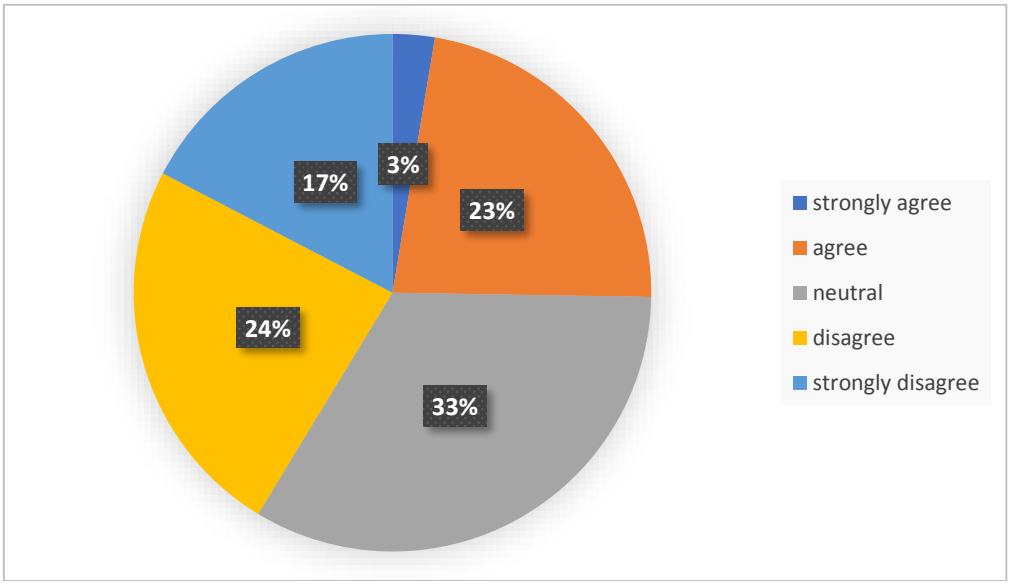


Figure 5.7: Location of the park in suitable area

Based on the above tables and charts 5.7, it can be seen that majority of people do not seem to agree with the fact that locations of parks are good and neither their answers show that they have green areas (parks) close to their homes or workplaces.

Tables 5.8: Convenience of parks and have stores around

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	12	3.2	3.2	3.2
	Agree	51	13.4	13.4	16.6
	Natural	145	38.2	38.2	54.7
	Disagree	117	30.8	30.8	85.5
	Strongly Disagree	55	14.5	14.5	100.0
	Total	380	100.0	100.0	

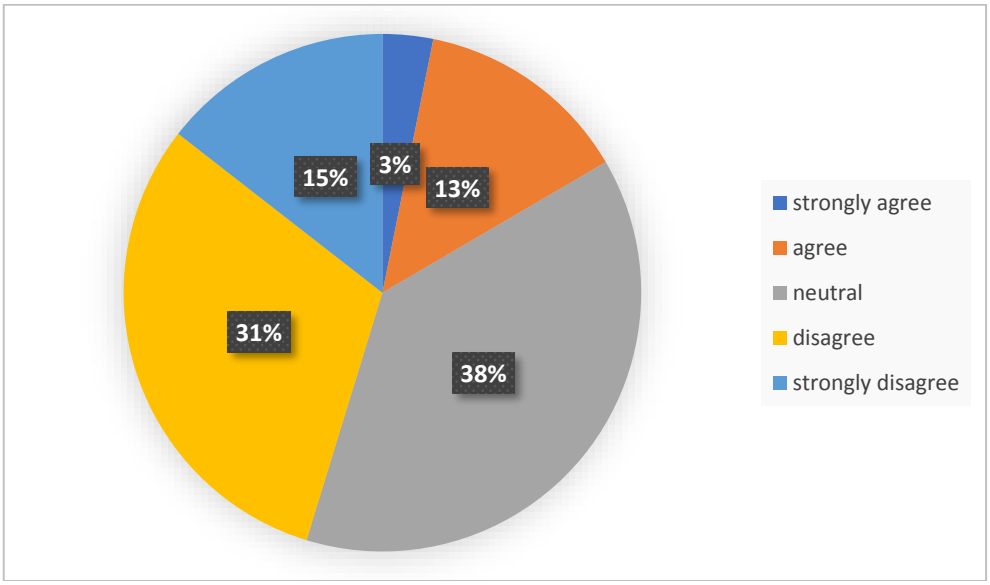


Figure 5.8: Convenience of parks and have stores around

Figure 5.8, relates to ancillary services and these are important as they help to make it easy and enjoyable to use the park especially for relaxing, dinning and other activities. The results show that these ancillary services are not available. This possibly suggesting why some people do not prefer to use the parks or rather prefer to go somewhere else or sit inside the house.

Table 5.9: Recreation facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	3	0.8	0.8	0.8
	Agree	26	6.8	6.8	7.6
	Natural	116	30.5	30.5	38.2
	Disagree	165	43.4	43.4	81.6
	Strongly Disagree	70	18.4	18.4	100.0
	Total	380	100.0	100.0	

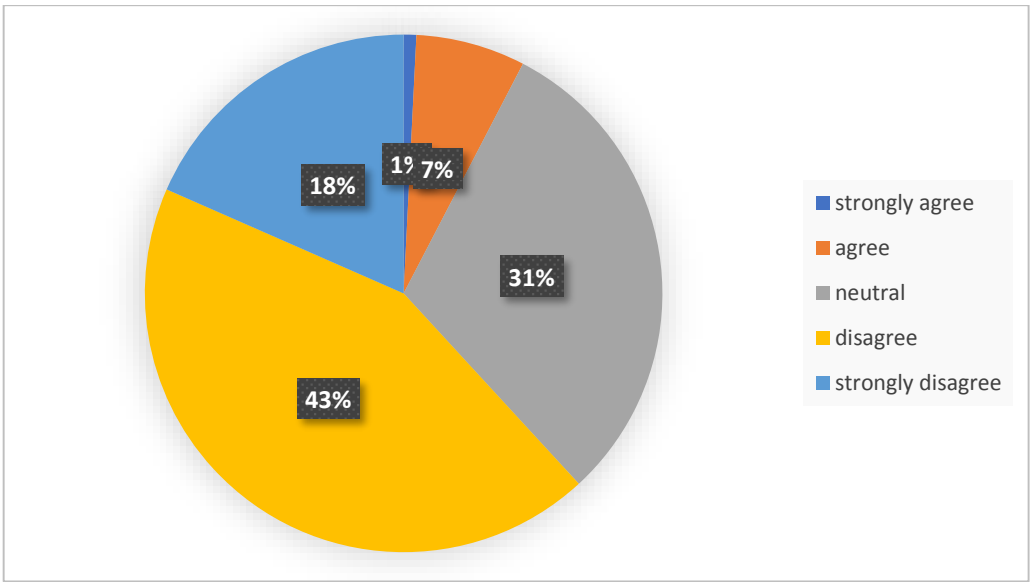


Figure 5.9: Recreation facilities

Recreation facilities are some of the key features that attract people to visit and use the park. The absence of such facilities thus dissuades people from using the parks. Results provided in Figure 5.9 and Table 5.9 provide strong evidence that there are not enough recreation facilities in Gönyeli parks.

Table 5.10: Attractiveness of the park in appearance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	1.6	1.6	1.6
	Agree	50	13.2	13.2	14.7
	Natural	120	31.6	31.6	46.3
	Disagree	137	36.1	36.1	82.4
	Strongly Disagree	67	17.6	17.6	100.0
	Total	380	100.0	100.0	

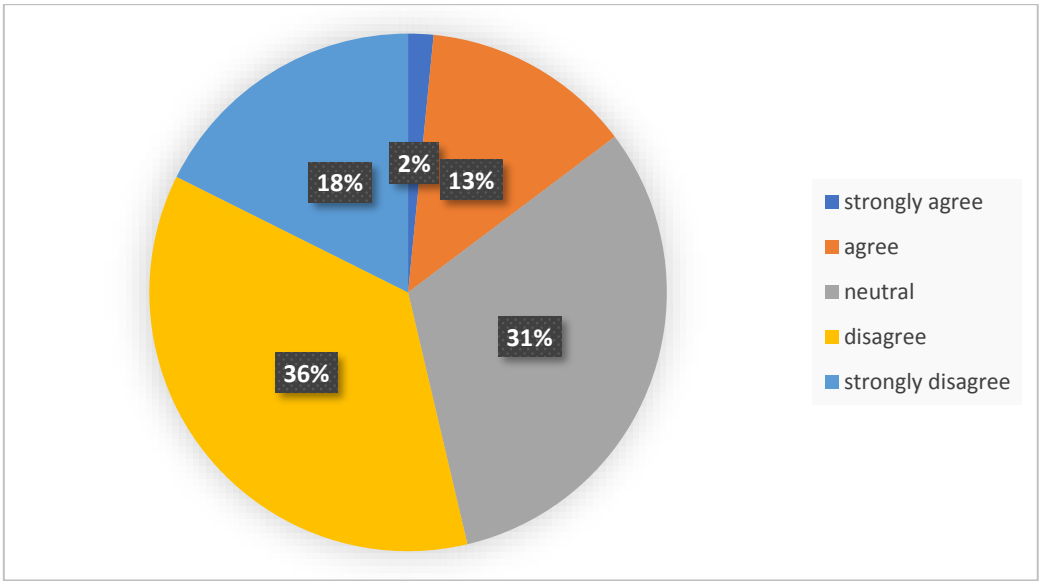


Figure 5.10: Attractiveness of the park in appearance

Attractive parks have a capacity to draw a huge number of people to make use of the park and if not, then possibly few people will use the parks. This can be supported by the established results in Table 5.10 ad Figure 5.10. thus, it is important to always ensure that urban planners design attractive parks.

Table 5.11: Park's open spaces

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	2.6	2.6	2.6
	Agree	77	20.3	20.3	22.9
	Natural	161	42.4	42.4	65.3
	Disagree	103	27.1	27.1	92.4
	Strongly Disagree	29	7.6	7.6	100.0
	Total	380	100.0	100.0	

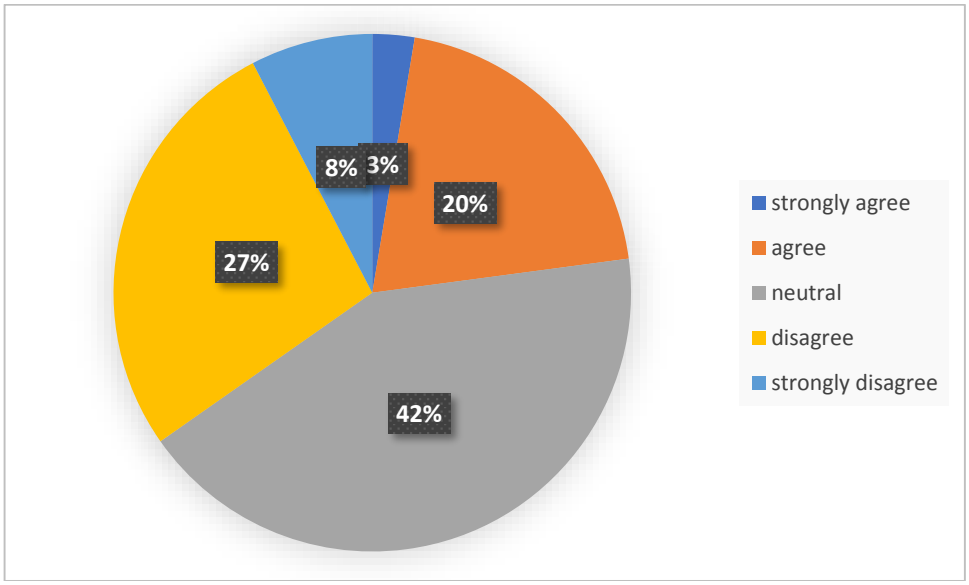


Figure 5.11: Park's open spaces

Based on Tables 5.9, 5.10, 5.11 and 5.12 we can observe that majority of people disagree with or are neutral towards the matter of parks' facilities. These items include, having stores around, having recreational facilities, being attractive in their appearance and including open spaces in the parks. Based on personal observations of the researcher and consensus of results from participants, the answers are deemed relevant and reliable as the parks in this area do not contain attractive facilities. Below tables are presenting items from the questionnaire that are related to transportation variable that was included in the survey to better understand how people of this region see this matter in relation to parks located in their neighborhood and living area.

Table 5.12: Parks can be reached with public transport

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	260	68.4	68.4	68.4
	No	120	31.6	31.6	100.0
	Total	380	100.0	100.0	

Table 5.12 shows that majority of people who visit the parks are having access to public transportation means, which help and enhance the accessibility of parks in the region.

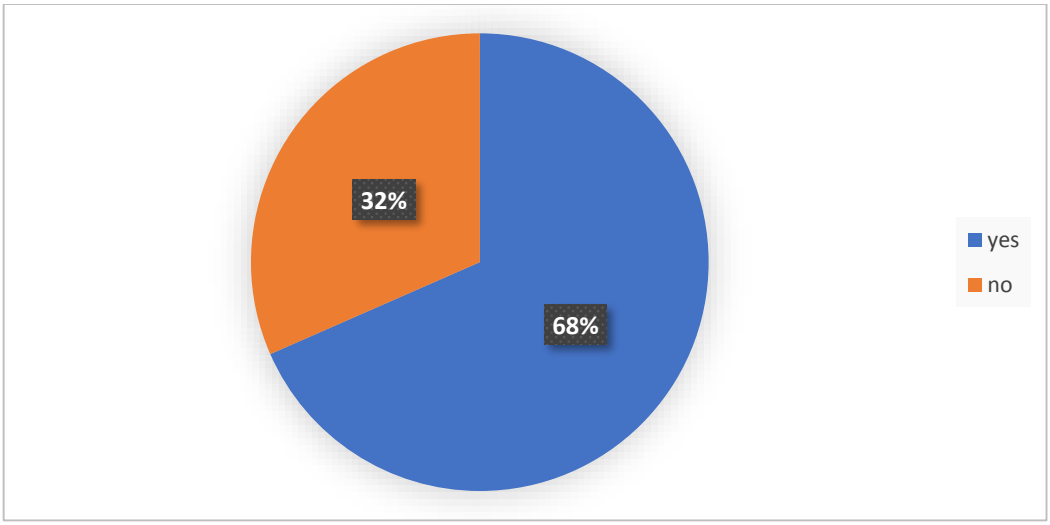


Figure 5.12: Parks can be reached with public transport

Table 5.13 shows that traffic surrounding parks is not a very important matter for people of this area as majority have answered neutral to this item and the amount of those who have disagreed to this question are very low in comparison to other response groups.

Table 5.13: Parks surrounded with traffic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	22	5.8	5.8	5.8
	Agree	91	23.9	23.9	29.7
	Natural	189	49.7	49.7	79.5
	Disagree	76	20.0	20.0	99.5
	Strongly Disagree	2	0.5	0.5	100.0
	Total	380	100.0	100.0	

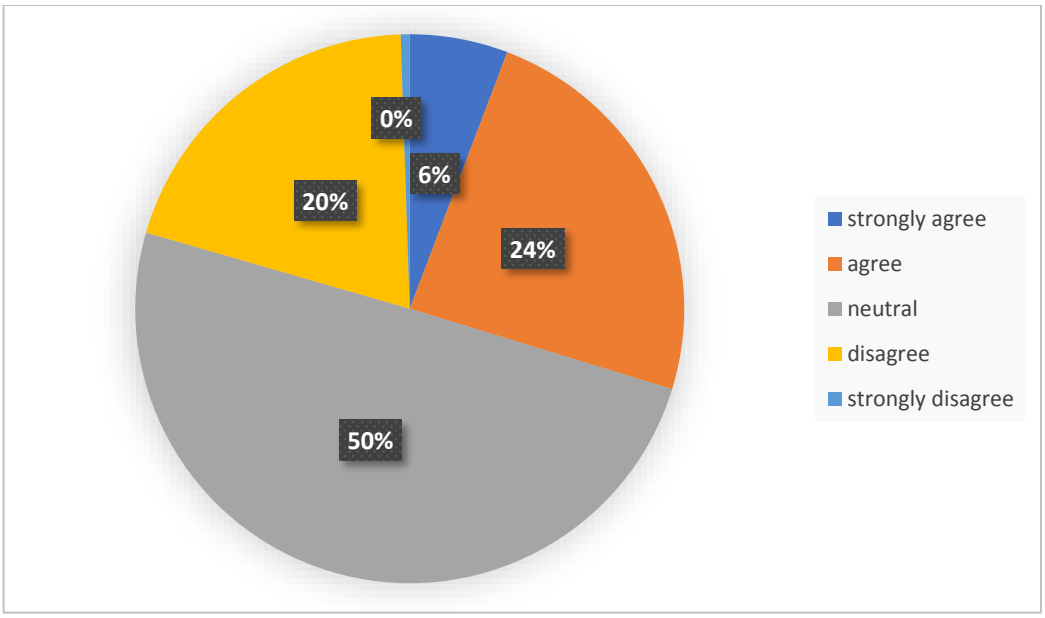


Figure 5.13: Parks surrounded with traffic

Table 5.14: Bus stops around the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	69	18.2	18.2	18.2
	Agree	164	43.2	43.2	61.3
	Natural	42	11.1	11.1	72.4
	Disagree	73	19.2	19.2	91.6
	Strongly Disagree	32	8.4	8.4	100.0
	Total	380	100.0	100.0	

Table 5.14 presents the responses from participants in regard to the item that asks whether or not there are bus stops nearby parks and their locations. It seems that majority agree to these questions, which shows that bus stops are close by and are accessible from park location.

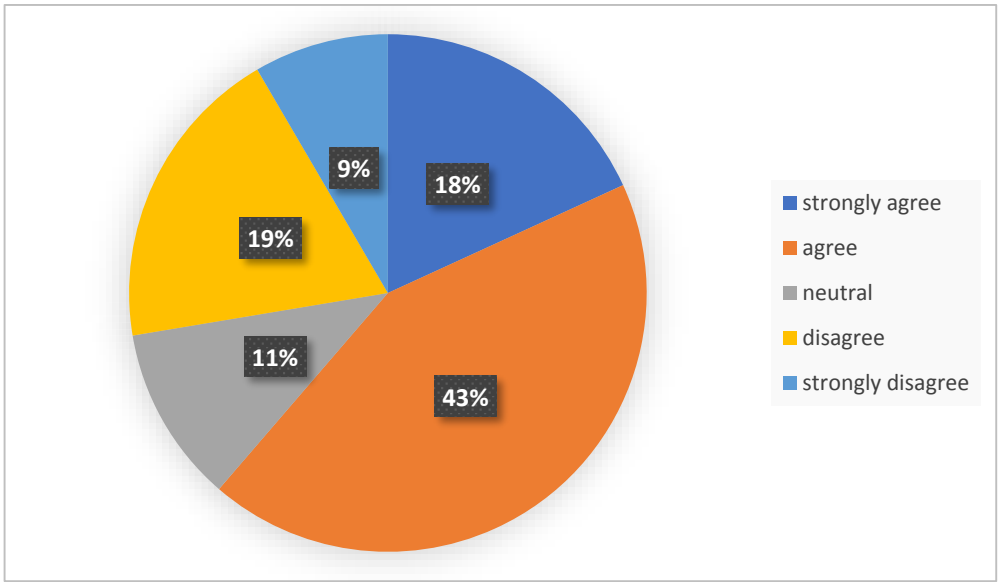


Figure 5.14: Bus stops around the park

Table 5.15 presents another aspect of transportation in this case. Survey question is if participants visit parks by walk or bicycle and as it is shown in the majority of visitors (13.4% plus 32.1%) have agreed to this question.

Table 5.15: Walking or riding a bicycle to the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	51	13.4	13.4	13.4
	Agree	122	32.1	32.1	45.5
	Natural	77	20.3	20.3	65.8
	Disagree	109	28.7	28.7	94.5
	Strongly Disagree	21	5.5	5.5	100.0
	Total	380	100.0	100.0	

This means mostly people use their bicycles or just walk to the parks in their region, while the other portion of sample population have disagreed, which means they use other means of transportation to reach or visit parks (28.7% plus 5.5%) and the remaining have answered neutral, which can mean that this group can or are using both means of transportation (private or public) as well as car or bike or walking.

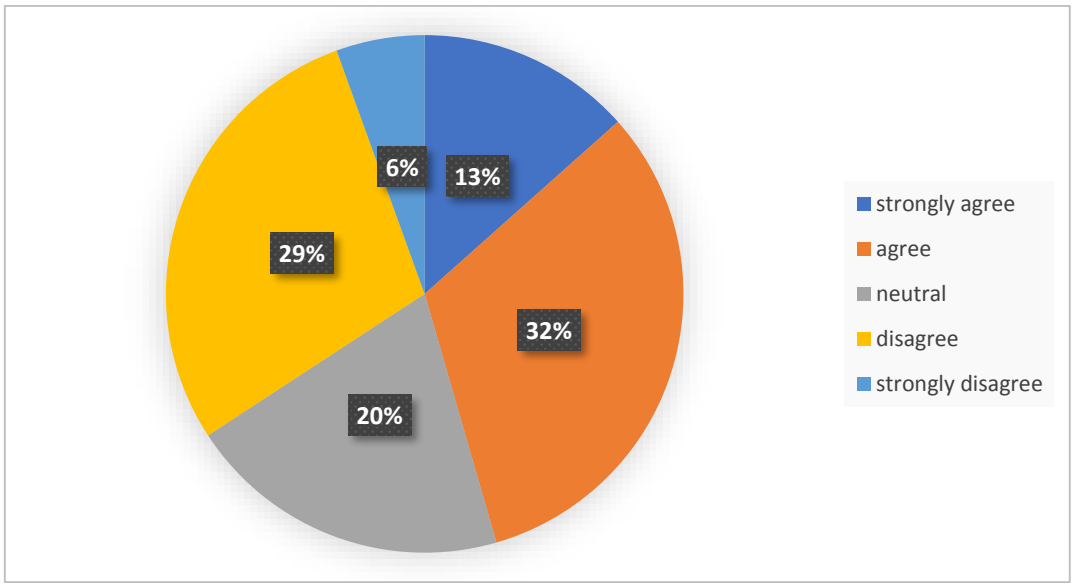


Figure 5.15: Walking or riding a bicycle to the park

The following tables are related to the analysis that was conducted on survey items addressing family friendly related indicators.

Table 5.16: Parks are friendly free

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	29	7.6	7.6	7.6
	Agree	89	23.4	23.4	31.1
	Natural	164	43.2	43.2	74.2
	Disagree	94	24.7	24.7	98.9
	Strongly Disagree	4	1.1	1.1	100.0
	Total	380	100.0	100.0	

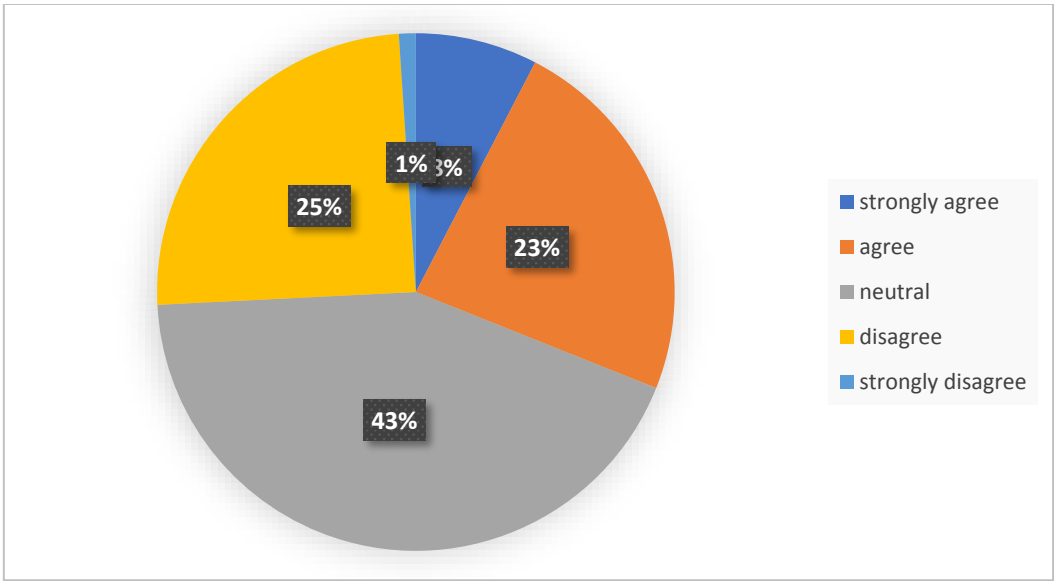


Figure 5.16: Parks are friendly free

Table 5.17: Friendliness of the park to children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	35	9.2	9.2	9.2
	Agree	99	26.1	26.1	35.3
	Natural	148	38.9	38.9	74.2
	Disagree	87	22.9	22.9	97.1
	Strongly Disagree	11	2.9	2.9	100.0
	Total	380	100.0	100.0	

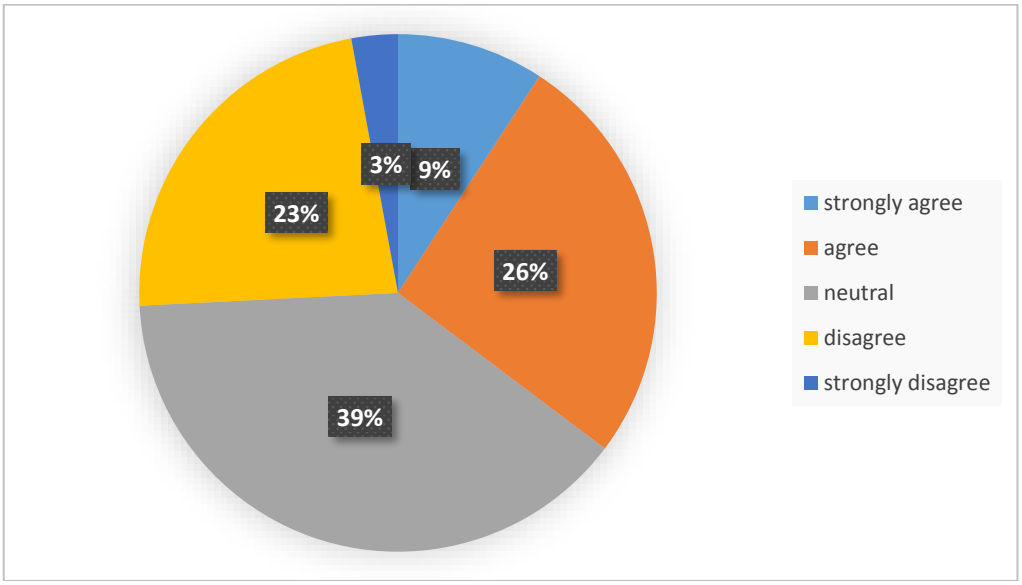


Figure 5.17: Friendliness of the park to children

Parks must be used by a lot of different people and this includes children as well. As can be noted from the table and figure above, there is a high agreement among residents that the parks are friendly to children. This contributes towards explaining why some parks in Gönyeli are being used more than the others.

Table 5.18: Parks with playing areas

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	15	3.9	3.9	3.9
	Agree	63	16.6	16.6	20.5
	Natural	152	40.0	40.0	60.5
	Disagree	140	36.8	36.8	97.4
	Strongly Disagree	10	2.6	2.6	100.0
	Total	380	100.0	100.0	

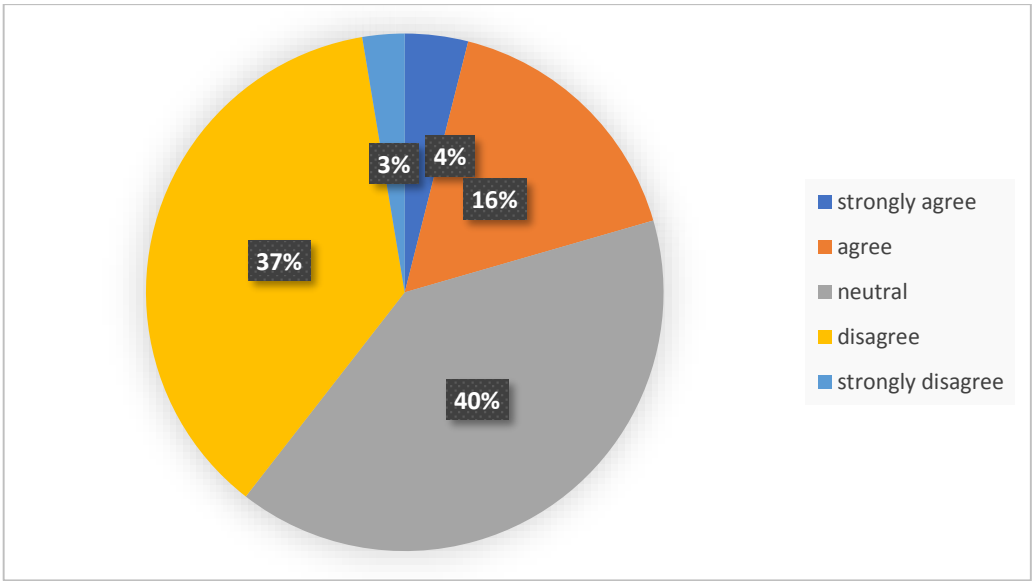


Figure 5.18: Parks with playing areas

One of the major reasons why people especially children, visit parks is to play in the parks and this implies that parks which have a lot of playing areas will attract a high number of users. This is what table and Figure 5.18 illustrate.

Table 5.19: Cleanliness and maintenance of the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	7	1.8	1.8	1.8
	Agree	48	12.6	12.6	14.5
	Natural	167	43.9	43.9	58.4
	Disagree	132	34.7	34.7	93.2
	Strongly Disagree	26	6.8	6.8	100.0
	Total	380	100.0	100.0	

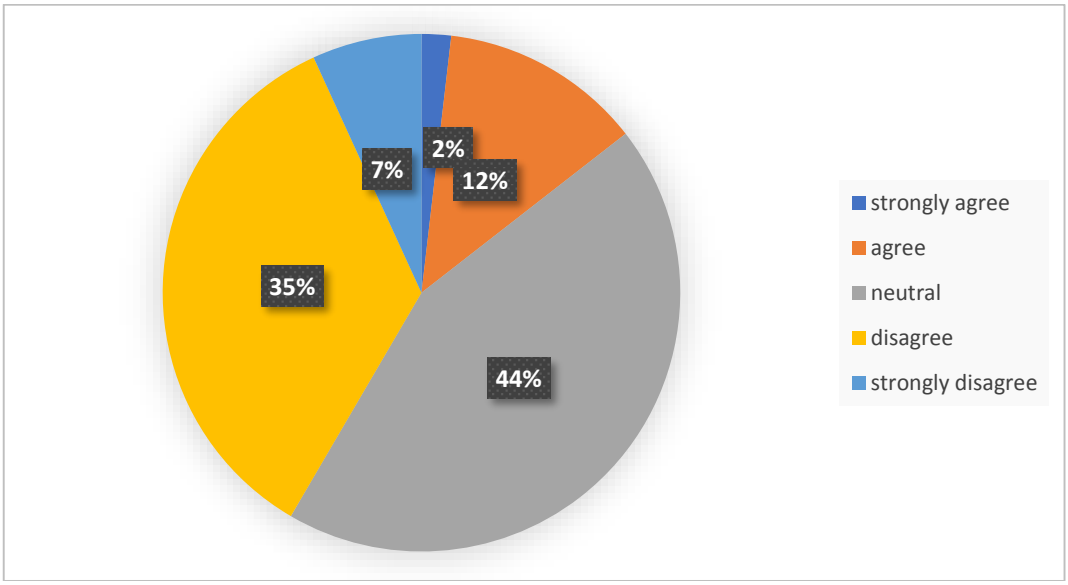


Figure 5.19: Cleanliness and maintenance of the park

According to the findings of above tables in regard to parks and their level of family-friendliness, it can be seen that majority of participants have agreed that parks in this area are friendly for family and kids and possess adequate environment for kids and children. However, the parks still lack sufficient playgrounds and facilities for kids. This can be seen from above tables. In addition, this was mentioned various times during the process of data collection by the researcher. Mostly, visitors ask or need playgrounds for their children and for family to spend time in open space. Cleanness of parks is also another factor which people have paid severe attention and seems the government can improve the atmosphere of parks by providing a cleaner area.

Table 5.20: Satisfaction with the park's facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	2	0.5	0.5	0.5
	Agree	24	6.3	6.3	6.8
	Natural	141	37.1	37.1	43.9
	Disagree	165	43.4	43.4	87.4
	Strongly Disagree	48	12.6	12.6	100.0
	Total	380	100.0	100.0	

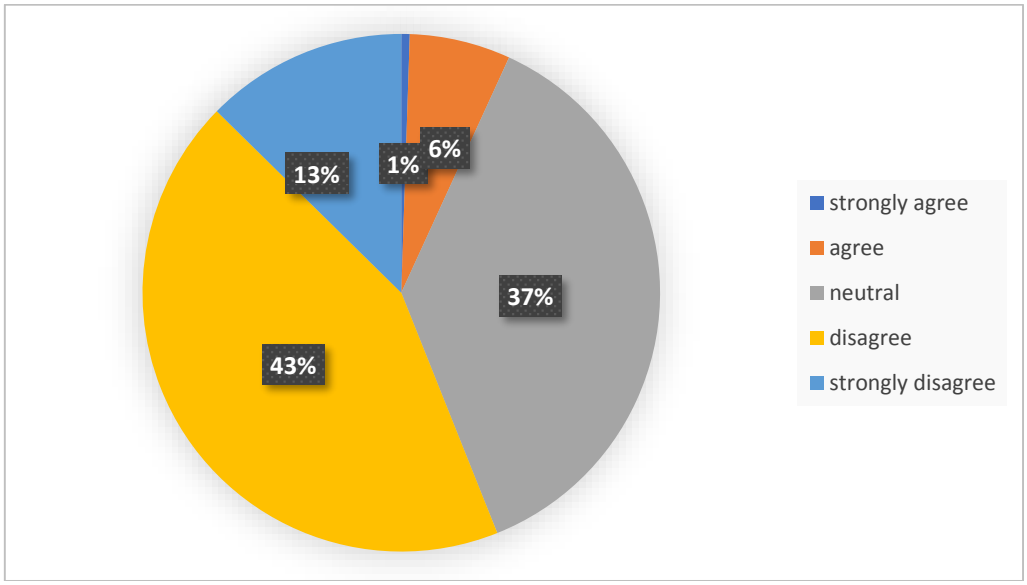


Figure 5.20: Satisfaction with the park's facilities

Table 5.20 and its subsequent chart reveal that people of this region (participants) are not generally satisfied with the facilities of parks in this area.

Table 5.21: Regular use of the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	1.6	1.6	1.6
	Agree	52	13.7	13.7	15.3
	Natural	161	42.4	42.4	57.6
	Disagree	133	35.0	35.0	92.6
	Strongly Disagree	28	7.4	7.4	100.0
	Total	380	100.0	100.0	

Table 5.21 shows that majority of participants are not regular users of parks in this area. The cause of this can be seen in previous tables. Low level of satisfaction and lack of suitable facilities and several other reasons can be identifiers of visit rate for people in the area.

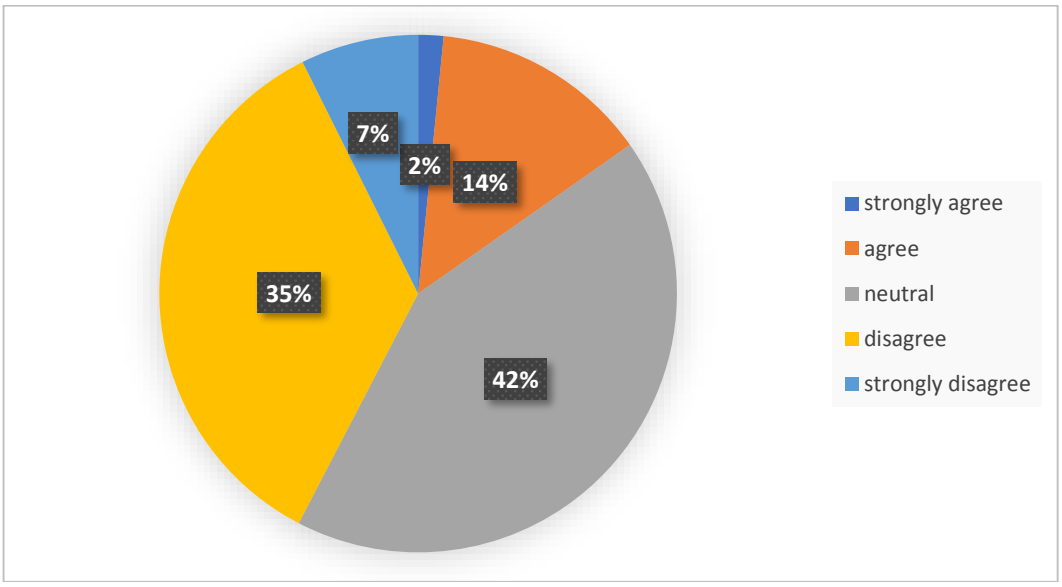


Figure 5.21: Regular use of the park

Table 5.22: Parking space

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	7	1.8	1.8	1.8
	Agree	124	32.6	32.6	34.5
	Natural	131	34.5	34.5	68.9
	Disagree	109	28.7	28.7	97.6
	Strongly Disagree	9	2.4	2.4	100.0
	Total	380	100.0	100.0	

Table 5.22 shows the availability of parking spaces around designated parks in the region. According to collected data and its results, it can be seen that percentages of agree, neutral or disagree to this item are fairly close to each other. This can be due to the fact that some people do not find this matter as important or that each park that was highlighted in this study has a different aspect in regard to parking space.

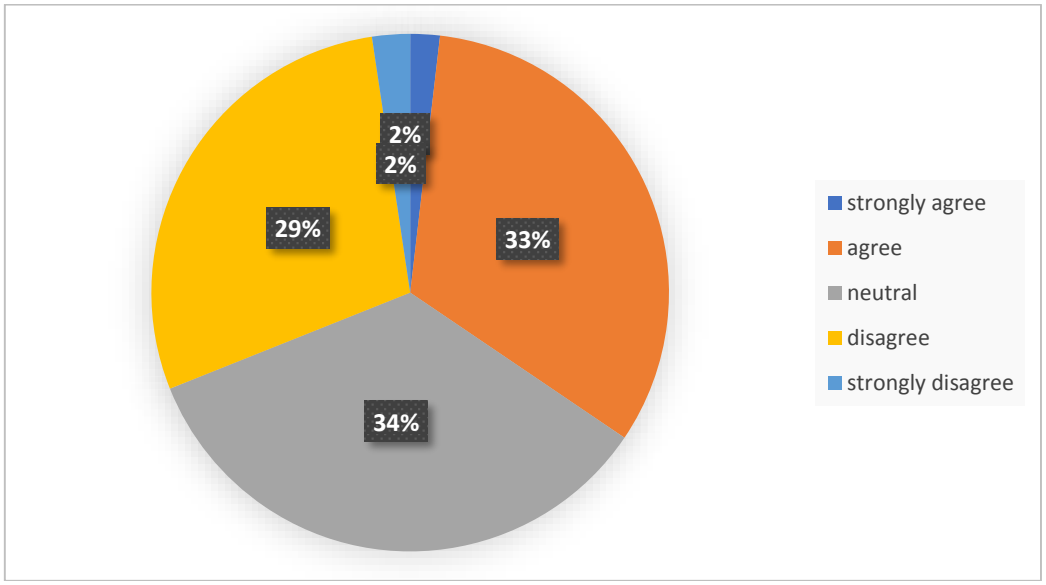


Figure 5.22: Parking space

However, personal observations of researcher show that mostly parks can have a better parking area or a close by parking space for convenience of visitors. This can especially be

seen during weekends and rush-hours of parks, where the number of cars surrounding parks will increase.

Table 5.23: Potential for improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	164	43.2	43.2	43.2
	Agree	152	40.0	40.0	83.2
	Natural	44	11.6	11.6	94.7
	Disagree	18	4.7	4.7	99.5
	Strongly Disagree	2	0.5	0.5	100.0
	Total	380	100.0	100.0	

Table 5.23 shows that above 80% of participants agree to the fact that parks need to be improved and that there are several aspects that can be developed or modified for the better. This is also in consensus with the previous answers analyzed from respondents.

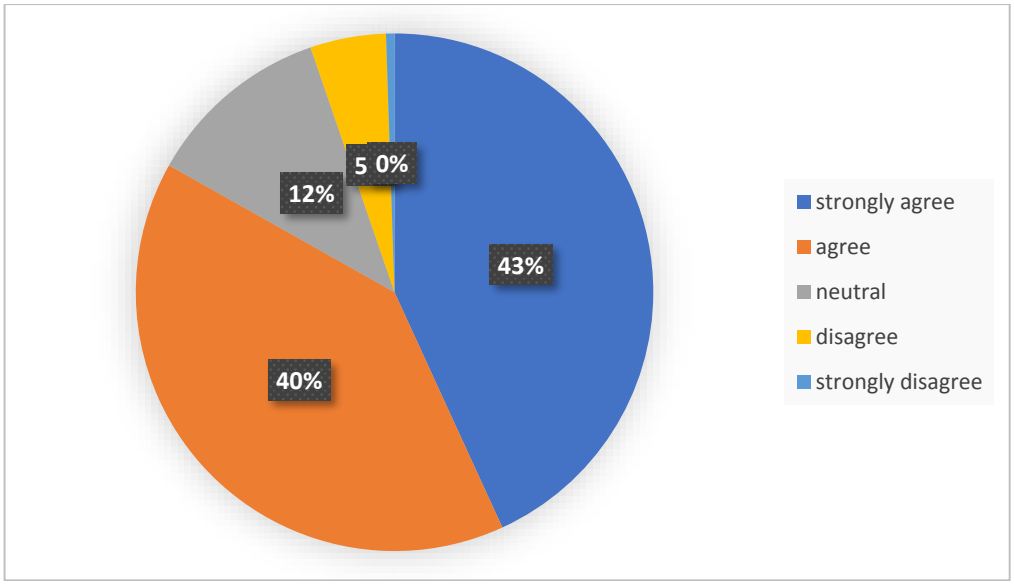


Figure 5.23: Potential for improvement

Table 5.24 and its chart are revealing an important matter in this research and that is safety of parks, which can be an extreme variable for families and other groups to visit parks.

Table 5.24: Safety of the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	96	25.3	25.3	25.3
	Agree	171	45.0	45.0	70.3
	Natural	91	23.9	23.9	94.2
	Disagree	19	5.0	5.0	99.2
	Strongly Disagree	3	0.8	0.8	100.0
	Total	380	100.0	100.0	

The table above shows that majority of people are feeling safe in the areas and in parks' environment. This can play a significant role as a well-established bedrock for improvement of parks in this region.

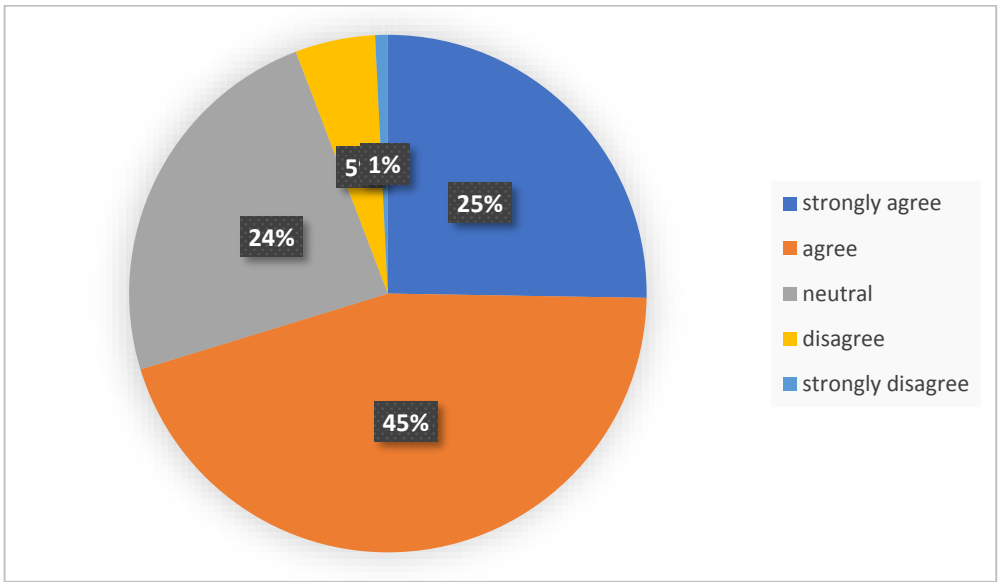


Figure 5.24: Safety of the park

Table 5.25: Green space

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	1.6	1.6	1.6
	Agree	99	26.1	26.1	27.6
	Natural	159	41.8	41.8	69.5
	Disagree	111	29.2	29.2	98.7
	Strongly Disagree	5	1.3	1.3	100.0
	Total	380	100.0	100.0	

Table 5.25 shows that different parks have a different level of green areas. Though, it can be deduced that mostly, greenery and plantation can be improved inside the parks or in surrounding areas of parks. This can lead to a higher level of overall satisfaction and usage of parks. Also, a majority of parks need to have more green areas and more trees to be planted and implemented.

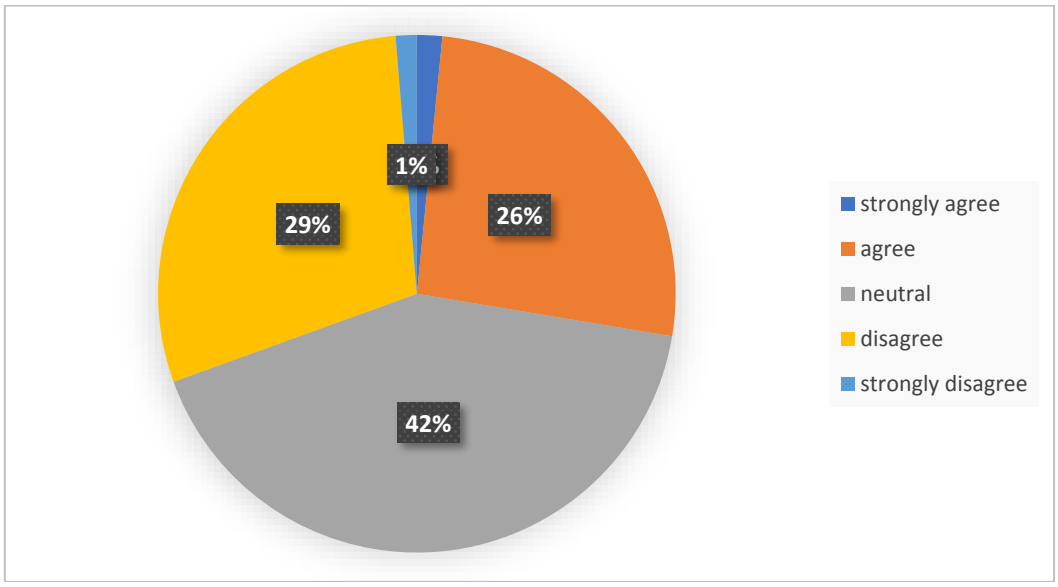


Figure 5.25: Green space

Table 5.26: Availability of sidewalks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	3	0.8	0.8	0.8
	Agree	69	18.2	18.2	18.9
	Natural	154	40.5	40.5	59.5
	Disagree	143	37.6	37.6	97.1
	Strongly Disagree	11	2.9	2.9	100.0
	Total	380	100.0	100.0	

Table 5.26 represents answers of participants in regard to existence of sidewalks around parks. Based on the above table, it can be seen that above 70% of people whether were neutral or in oppose to this matter. This calls for further attention from authorities for providing sidewalks that can be crucial for kids and families to be able to walk around the park or to able to visit parks normally by walk.

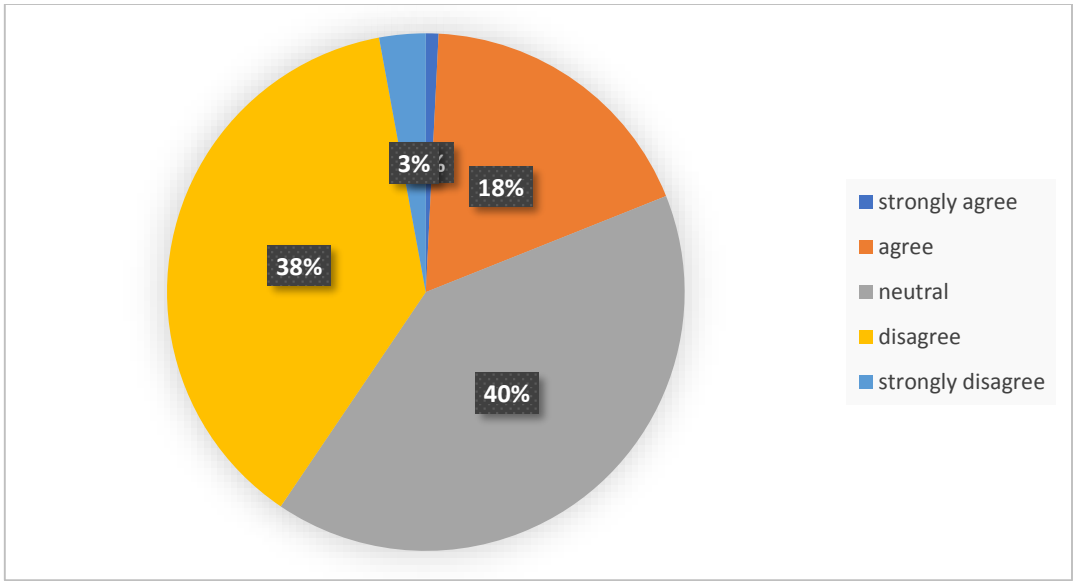


Figure 5.26: Availability of sidewalks

Table 5.27: Visibility of the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	62	16.3	16.3	16.3
	Agree	145	38.2	38.2	54.5
	Natural	102	26.8	26.8	81.3
	Disagree	69	18.2	18.2	99.5
	Strongly Disagree	2	0.5	0.5	100.0
	Total	380	100.0	100.0	

Table 5.27 and its chart show that visibility level of parks is relatively better than some other factors that are presented earlier in this section. This means that the locations of parks are relatively fair as they can be seen from the street, which is a positive factor for parks in this area.

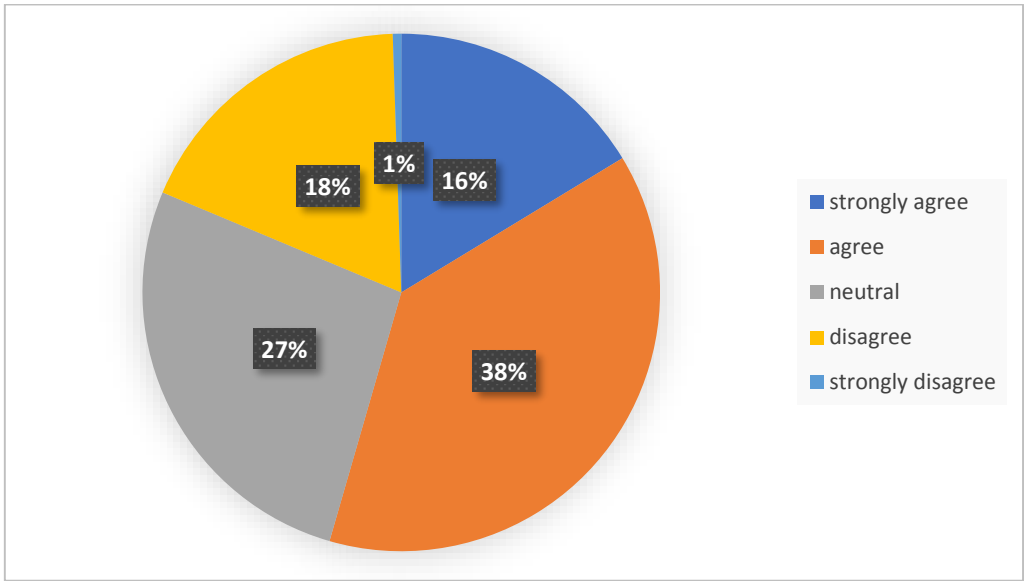


Figure 4.27: Visibility of the park

Table 5.28: Diversity of people who use the park

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	89	23.4	23.4	23.4
	Agree	152	40.0	40.0	63.4
	Natural	99	26.1	26.1	89.5
	Disagree	40	10.5	10.5	100.0
	Total	380	100.0	100.0	

Table 5.28 and its chart present the result on the question from survey that parks provide spaces and atmosphere of meeting familiar or similar people on a visit. It can be seen that majority have positive response to this item. This shows correlation with friendly atmosphere that these parks present. This is also another factor, which can be a good bedrock for improving other aspects of parks that are related to usage and accessibility.

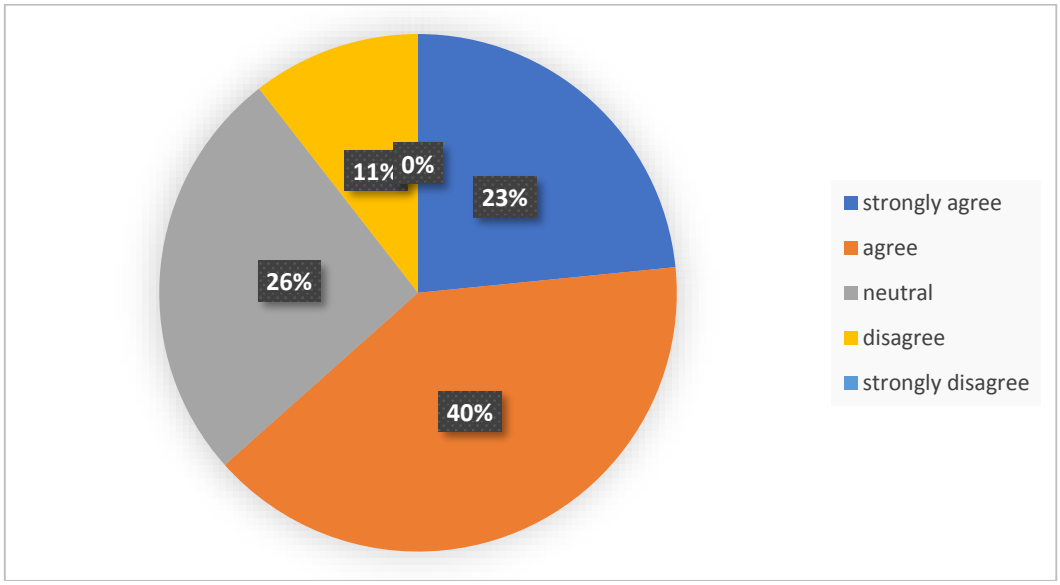


Figure 5.28: Diversity of people who use the park

Based on the established findings, it can thus be noted that the parks are easily accessible by public transport. But, current transport links to the park are not satisfactory and thus it is important to find other ways of improving existing transport links. In addition, these results also suggest that the high number of different types of people using the parks suggests that

the parks are highly accessible and to some extent are being used to by residents of Gönyeli. However, the use of the park still requires a lot of improvements especially in terms of the facilities that are available in the park. This is important so as to encourage a lot of different types of people and of different backgrounds, age and nationalities to use the parks. This also follows concerns which have been established from the findings which show that a lot of residents are not satisfied from using the parks' facilities. Moreover, the available facilities are not enough and of the required standards. As a result, it can thus be concluded that a lot of improvements are needed to improve the accessibility and utilisation of urban parks in Gönyeli.

However, Gönyeli parks can be said to be showing a strong resemblance of urban park features provided by the hierarchy of parks especially in terms of the number of houses surrounding the parks. But more still needs to be done as much of the land in Gönyeli is undeveloped and there are few green spaces that can be used to develop more parks and even improve existing parks.

It can also be deduced that there is a significant difference between urban parks found in Gönyeli and the used three case studies that were used as a point of reference. The major differences that can be observed to exist between these case studies and Gönyeli are in relation to the contemporary design, design strategy and sustainability of the parks. Both the three case studies have better and well-developed contemporary design as well as the design strategy. Hence, in terms of contributing towards improving the sustainability of the parks, Gönyeli urban parks can be said to be lacking quite a number of sustainability features. Furthermore, the distance from the parks is more that the stipulated 300 meters' guideline established by the European Union standards. All these aspects tend to contribute towards improving the accessibility and utilization of the parks and yet they are lacking. Hence, it is important to ensure that urban planners and authority consider these aspects when designing and developing urban parks.

CHAPTER 6
CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE STUDIES

6.1 Conclusions and Recommendations

Referring to previous chapter of this study, it can be seen that many of important factors of park usage and accessibility, which were described in Chapter 2 of this research, were not profoundly implemented in this region. This is while safety and visibility of parks are relatively high and parks in this are provide a family-friendly atmosphere, which attracts more people and locals. Due to the fact that most visitors of these parks are young, it can be seen that parks lack sufficient or adequate facilities for recreational means. This in turn decreases the visit rate as well as overall satisfaction level of visitors to these parks.

In addition, other factors such as, availability of sidewalks can clearly contribute to usage of parks in this area. Moreover, lack of adequate facilities for children can force people to move to other parks that are farther from reach but do possess facilities, from which children can enjoy and spend some hour's outdoors in a safe environment, where they can be encouraged to have physical activities and social interactions. This lack in this area is vivid as parks in Gönyeli do not possess sufficient facilities for children. However, safety and openness of these parks in this area has led to a routine visit rate by the locals and residents of this area. Greenery and tress are clearly to be developed and improved in park areas in the region as it was also shown in the result of this study, people tend to visit parks when trees and other vegetation area apparent and vivid. Additionally, existence of sidewalks is very important for families. This is due to the fact that it increases perceived safety, especially if children are to go to parks and outdoor by themselves. Despite the aforementioned factors, having designated parking areas can lead to higher visit rates by people due to comfort.

Also, implementation of open spaces, and playgrounds for children as well as other recreational facilities can lead to higher satisfaction level of visitors. It is highly important

for authorities to know and understand strengths and weaknesses of parks and their usage and accessibility in this area. This will lead to a proper decision making and development planning (in urban design and urban planning) that can lead to a higher level of quality of life for residents of this area. As majority of people who visit these parks are young or new families, it is extremely crucial to improve these aspects of parks for long-term planning of improving quality of life of locals, their health, and their satisfaction of the area they live in. Urban planners and park authorities are strongly encouraged to come up with better design strategies to improve the contemporary design of the parks so as to enhance both the accessibility and utilization of parks. Such improvements must be done in line with the hierarchical features of urban parks.

Recommendations can also be made that it is not sufficient to address park accessibility and utilization issues, but also sustainability issues surrounding the development and usage of parks. This will extend to benefit both urban planners and residents and they will increasingly continue to benefit from using the parks.

With reference to the available and unused land in Gönyeli, efforts can be made that better and well developed contemporary urban parks be designed using some of the idle land. This will contribute towards improving the natural look of the area as well as the social lifestyles of community members.

Therefore, this research implies that parks in Gönyeli area located in Nicosia (Lefkosa) require and call for improvement and advancements. This is in regard to park usage and accessibility and subsequently urban design and development and its planning. Several areas in this region are considered as parks, although, they do not possess elements that are defined for parks (See Chapter 2). Such surveys and researches can create a better understanding on these phenomena and can be beneficial for authorities and decision makers. Investment in people and their lives to increase the quality of life they live and their health is a priority for authorities. Therefore, it is necessary to understand how parks can benefit locals and increase their quality of life on a short-term basis as well as long-term basis. Hence, results of this study suggest that parks in Gönyeli region need to be improved from various aspects that was mentioned previously.

6.2. Suggestions for Future Studies

Other studies can expand the territory and investigate this subject on a larger scale. Similarly, parks in area of Gönyeli do not possess all aspects of park accessibility and usage that is previously defined and described in this research. This yielded in the fact that the questionnaire survey was limited in aspect of items for all aspect of park usage, accessibility and also scales of quality of life. A cross sectional survey containing various aspects of quality of life and other variables, which can be contribute to park accessibility and usage can be administered and conducted for better understanding how people see parks and how they relate this to their quality of life. Other types of research and methodology can be implied in this topic that can be namely, interviews, focus groups, and other surveys, which can include various behavioral aspects and perception, which are determinants of using a park or being a regular visitor of a specific park. Such aspects as, decision-making-process, perception, obesity, culture, background, language, ethnicity, society and the like can greatly develop our understanding on this matter, which in turn will lead to a better decision making and urban development for parks, particularly for North Cyprus, Lefkosa, Gönyeli region.

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APPENDICES

APPENDIX 1

Research Questionnaire

Dear Participant

This research tends to measure and analyse the accessibility of parks as well as their usage in the area of Gönyeli, located in North West of Nicosia, the capital of Cyprus. The main objective of this research is to assess the accessibility of parks in this area and urban design of parks, which are in this region and their usage/utilization. Measuring the accessibility of parks can lead to a better understanding on how to develop the urban spaces in order to achieve a higher level of quality of life for the local residents. Urban design elements of designated parks in the Gönyeli area are being tested through a questionnaire by filling in the following questions.

That your participation in the study is voluntary and your identity will not be revealed in any case to third parties. The data collected during the course of this study will be used for academic research purposes only and may be presented at national/international academic meetings and/or publications.

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We appreciate your time and participation in our study.

Please select your answers with a tick:

How long have you been here? **Less than 3 years** ☐ **4-6 years** ☐ **More than 7 years** ☐	
How old are you? **Below 18** ☐ **19- 25** ☐ **26-30** ☐ **31 and above** ☐	
What is your education level? **High School** ☐ **Undergraduate** ☐ **Postgraduate** ☐	
Can you tell us about your marital status? **Single** ☐ **Married** ☐ **Widowed/Divorced** ☐	

Please rate your answers as indicated and circle your desired answer:

1 Strongly Agree 2 Agree 3 Neutral 4 Disagree 5 Strongly Disagree

Is there any park close to your home	1	2	3	4	5
Is there any park close to your work	1	2	3	4	5
Parks are located in a suitable area	1	2	3	4	5
Parks are convenient and has stores around	1	2	3	4	5
Has recreational facilities	1	2	3	4	5
It is attractive in its appearance	1	2	3	4	5
There are indoor facilities	1	2	3	4	5
Parks can be reached by public transport	Yes			No	
Parks are not surrounded with traffic	1	2	3	4	5
There are bus stops around parks	1	2	3	4	5
I go to parks by walk or bicycle	1	2	3	4	5
Parks are family-friendly	1	2	3	4	5
Parks are suitable for kids and children	1	2	3	4	5
Parks have playground for children	1	2	3	4	5
Parks are clean and well maintained	1	2	3	4	5

Please also answer the following questions in regard to your opinion based on the scale:

1 Strongly Agree 2 Agree 3 Neutral 4 Disagree 5 Strongly Disagree

Generally, I am satisfied with facilities of the park	1	2	3	4	5
I use this park regularly	1	2	3	4	5
There is parking area designated for the park	1	2	3	4	5
There are some areas that can be modified for better	1	2	3	4	5
I feel safe in this park and area	1	2	3	4	5
There are many trees and/or green areas around	1	2	3	4	5
There are sidewalks available around the park area	1	2	3	4	5
The park can be seen from the street	1	2	3	4	5
I meet people who are familiar or similar to me here	1	2	3	4	5

Thank you very much for your time

APPENDIX 2

Parcel Numbers of the Area (Passive and Active)

Parcel NO-active parks Gönyeli	**Classification of parks**	**Building amount in 300 m territory**
62	Neighborhood park	68
65&66	Neighborhood park	72
73	Neighborhood park	60
74	Neighborhood park	48
71	Neighborhood park	100
80	Neighborhood park	70
82	Neighborhood park	35
79	Neighborhood park	55
100	Neighborhood park	61
106	Neighborhood park	59
105	Community park	21
52	Neighborhood park	55
91&92	Neighborhood park	52
42	Neighborhood park	39
26	Neighborhood park	20
30	Neighborhood park	45
35	Neighborhood park	61
33	Neighborhood park	41

APPENDIX 3

Parcel No-Passive Parks Gönyeli

Parcel NO-passive parks Gönyeli	Hierarchical of parks	Building amount in 300 m territory
1	Neighborhood park	10
2	Neighborhood park	25
3	Neighborhood park	8
4	Neighborhood park	40
5	Pocket park	13
6	Neighborhood park	25
7	Pocket park	13
8	Neighborhood park	16
9	Neighborhood park	22
10	Pocket park	36
11	Pocket park	39
12	Pocket park	26
13	Pocket park	42
14	Neighborhood park	64
15	Pocket park	63
16	Neighborhood park	60
17	Neighborhood park	60
18	Pocket park	58
19	Pocket park	45
20	Neighborhood park	51
21	Neighborhood park	52
22	Pocket park	52
23	Neighborhood park	64
24	Neighborhood park	17
25	Pocket park	21
27	Pocket park	31
28	Pocket park	53
29	Pocket park	58
31	Pocket park	53
32	Neighborhood park	57
34	Pocket park	47
36	Neighborhood park	47
37	Neighborhood park	37
38	Neighborhood park	53
39	Neighborhood park	53
40	Neighborhood park	41
41	Neighborhood park	48
43	Pocket park	38
44	Neighborhood park	61
45	Pocket park	64

46	Pocket park	34
47	Pocket park	51
48	Pocket park	64
49	Neighborhood park	81
50	Pocket park	25
51	Neighborhood park	12
53	Pocket park	36
54	Neighborhood park	44
55	Neighborhood park	50
56	Neighborhood park	68
57	Neighborhood park	30
58	Pocket park	37
59	Neighborhood park	50
60	Pocket park	40
61	Neighborhood park	46
63	Neighborhood park	62
64	Pocket park	39
67	Pocket park	62
68	Neighborhood park	89
69	Pocket park	65
70	Neighborhood park	71
72	Neighborhood park	62
75	Pocket park	44
76	Pocket park	58
77	Neighborhood park	58
78	Neighborhood park	53
81	Neighborhood park	63
83	Pocket park	36
84	Neighborhood park	44
85	Pocket park	43
86	Pocket park	65
87	Neighborhood park	54
88	Pocket park	50
89	Neighborhood park	55
90	Neighborhood park	46
93	Pocket park	45
94	graveyard	24
95	Pocket park	42
96	Pocket park	49
97	Neighborhood park	70
98	Neighborhood park	22
99	Neighborhood park	19
101	Neighborhood park	68
102	Pocket park	66
103	Neighborhood park	58

104	Neighborhood park	31
107	Neighborhood park	36
108	Pocket park	31
109	Pocket park	34
110	Pocket park	40
111	Pocket park	50
112	Pocket park	53
113	Neighborhood park	36
114	Neighborhood park	26
115	Neighborhood park	67
116	Neighborhood park	27
117	Neighborhood park	31
118	Neighborhood park	54
119	Neighborhood park	29
120	Neighborhood park	108
121	Pocket park	107
122	Pocket park	85
123	Neighborhood park	65
124	Pocket park	39
125	Neighborhood park	37
126	Pocket park	51
127	Pocket park	48
128	Pocket park	43
129	Pocket park	57
130	Pocket park	53
131	Neighborhood park	62
132	Pocket park	68
133	Neighborhood park	35
134	Neighborhood park	31
135	Neighborhood park	45
136	Pocket park	44
137	Neighborhood park	56
138	Pocket park	54

APPENDIX 4

Arial Survey (Self-Administered)

			GÖNYELI PARK REGIONS	
Parcel No:	**Green Area**	**Used as Park**	**Empty Land**	**Properties**
1			x	
2			x	
3			x	
4	x			
5			x	
6			x	
7			x	
8			x	
9			x	
10			x	
11			x	
12			x	
13	x			
14			x	
15			x	
16			x	
17			x	
18			x	
19			x	
20			x	
21			x	
22			x	
23			x	
25			x	
26		x		
27	x			
28	x			
29			x	
30		x		
31	x			
32			x	
33		x		
34	x			
35		x		
36	x			
37	x			

38			x	
39	x			
40	x			
41	x			
42		x		
43			x	
44			x	
45			x	
46			x	
47	x			
48			x	
49	x			
50	x			
51	x			
52		x		
53	x			it is used as an army base
54	x			they used half of land
55			x	
56	x			
57	x			
58			x	
59			x	
60			x	
61	x			
62		x		
63	x			
64			x	
65		x		
66		x		
67	x			
68	x			
69	x			
70			x	
71		x		
72			x	
73		x		
74			x	
75			x	
76	x			
77			x	
78			x	

79		x		
80		x		
81			x	
82		x		
83	x			
84			x	
85			x	
87			x	
88			x	
89			x	
90	x			
91		x		
92		x		
93			x	
94				used as graveyard
95	x			
96	x			
97			x	
98			x	
99				Under construction
100		x		
101	x			
102	x			
103	x			
104	x			
105		x	x	
106		x		
107	x			
108	x			
109			x	
110			x	
111			x	
112			x	
113			x	
114			x	
115			x	
116			x	
117			x	
118			x	
119			x	
120			x	
121			x	

122	x		
123	x		
124	x		
125		x	
126		x	
127		x	
128	x		
129		x	
130	x		
131		x	
132	x		
133	x		
134		x	
135	x		
136	x		
137	x		
138	x		

APPENDIX 5

Field Picture of Gönyeli Parks

Parcel No:30

parcel No:35

Parcel NO:37

Parcel No:36

Parcel No: 38

Parcel No:42

APPENDIX 6

Ethical Approval Form

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

31.08.2018

Dear Ramyar Mohammed M. Amin

Your application titled **"Measuring Accessibility And Utilization Of Parks İn Gönyeli/ Cyprus"** with the application number YDÜ/FB/2018/37 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this documen

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