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An Introduction to the Role of Public Parks in Enhancing the Quality of Human Life in Egyptian Urban Environments

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ABSTRACT:

Public parks are placed high on the research agenda, with many studies addressing their social, economic, climatic, ecological, and transportation influences in different countries around the world. Public parks have been recognised as contributors to the physical quality of urban environments. More recently, a broader view of public parks has emerged. This view goes well beyond the traditional value of parks as places for mere recreation and visual delight, to depict them as valuable contributors to broader strategic objectives, such as property values, place attractiveness, job opportunities, social belonging, public health, tourist development, and improving the overall quality of life for individuals and societies.

In order to help policymakers, practitioners, researchers and the public make use of public parks, the present research aims to examine the role of public parks in enhancing the quality of human life in Egyptian urban environments. It measures 'quality of life' in terms of 'human needs' and 'subjective well-being'. Relevant literature is reviewed and a theoretical framework is set accordingly. Hence, the study explores the impact of public parks upon subsistence, reproduction, security, affection, understanding, participation, leisure, spirituality, creativity, identity and freedom; set by the adopted model for 'human needs'. A following section investigates the impact of public parks upon happiness, utility and welfare; identified by the undertaken framework of 'subjective well-being'.

Finally, the study concludes to a sound understanding of the impact of public parks upon improving the 'quality of life', as a synthesis of the findings from 'human needs' and 'subjective well-being'. This should open ways for policymakers, practitioners, researchers and the public to realise the potentials of public parks towards improving the quality of life and recognising the aspired-for individual and social development in Egypt.

KEYWORDS:

Public parks, Quality of life, Human needs, Subjective well-being.

INTRODUCTION:

The study of man-environment relationship has frequently proven to be quite complex and sophisticated. This is due to its deeply intertwined relationship with the human conscious and subconscious mind. Due to its significant importance, this relation has been the focal point for many specialised researchers such as Sherer (2003), Dyck (2003) and many others.

Researchers have found that people generally lack a clear awareness in relation to the significance of public parks. This is embodied in their elimination of and encroachments upon public parks, in favour of construction enterprises. This accordingly causes a serious microclimatic disruption and an environmental unbalance. It also increases pollution and promotes the spread of serious diseases and illnesses, hence creating an unhealthy environment (Akbari, 1992; Dyck, 2003).

The present study investigates the relationship between public parks and quality of life (QOL), concerning urban environments in Egypt. The theoretical framework is based on Costanza et al. (2007), which measures QOL in terms of human needs and subjective well-being. Therefore, this study first examines the relationship between the public parks and human need and then investigates their influences upon subjective well-being in order to understand the relationship between parks and quality of life.

1. QUALITY OF LIFE (QOL)

Costanza, et al. (2007) defined QOL as *'the extent to which objective human needs are fulfilled in relation to personal or group perceptions of subjective well-being'*. Quality of Life, therefore, utilizes quantifiable social indicators of human needs for subsistence, reproduction, security, affection etc., together with self reported levels of happiness, pleasure and fulfilment, termed "subjective well-being" (SWB). Figure 1 graphically represents the adopted model for studying Quality of Life in this research.

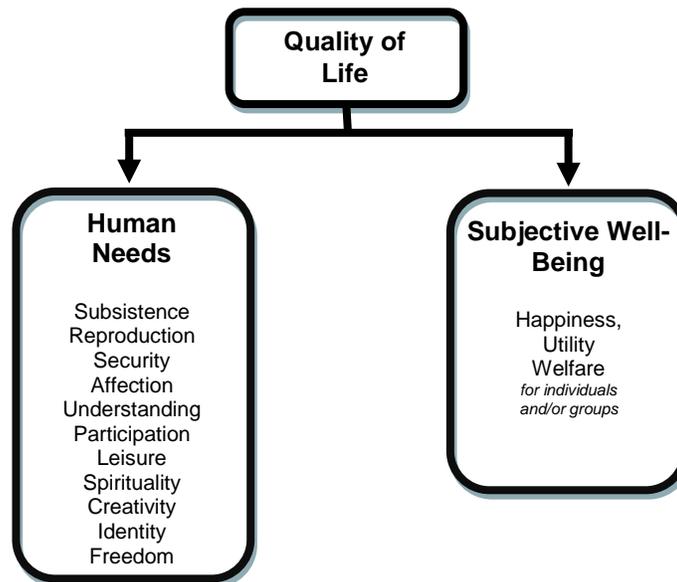


Fig [1] The Adopted model for studying Quality of Life (QOL)

Source: Costanza et al. (2007)

1.1 HUMAN NEEDS:

When discussing human needs, motivation and learning, it is common to refer to Abraham Maslow, being one of the most prominent theorists in the field. He was best known for the development of the 'hierarchy of needs' theory, as a classic example of the humanist philosophy (Pfeifer, 1998).

Maslow's hierarchy of human needs identified five levels of needs, which include the 'physiological', 'safety', 'belonging', 'esteem' and 'self-actualization' needs. These five levels must be satisfied in order to produce a healthy, fully-functioning human being. Lately, he added two new levels to this hierarchy, namely 'cognitive' and 'aesthetic' needs, which were placed before 'self-actualisation'. In this context, Elizabeth Puttick quotes *"if one or more of Maslow's needs is not satisfied the individual will tend to be arrested at*

that developmental stage, unable to progress to further stages until that need is met” (Pfeifer, 1998: pp. 268). Kök added “human needs are a powerful source of explanation of human behaviour and social interaction ... social systems must be responsive to individual needs, or be subject to instability and forced change” (Kök, 2007).

Maslow's model remains valid until our present time. Many researchers continued on his track introducing more categories to represent newly emerging needs. Examples of those include Burton, Rosenburg, Max-Neef and Costanza et al. They all agreed that an appropriate model must address basic needs, safety and security, love and belonging, self-esteem, self-actualization etc. They mainly differed in identifying the elements under every category. Table (1) below shows how the aspects addressed under every category varied per model. The table is based on (Kök, 2007) with minor amendments to serve the present research purposes. Maslow added the main categories of human needs while the other researchers and philosophers modified his model in order to fit the new human needs, as well as they divided some of these model aspects into several parts in order to make it more specific. For example, Max-Neef divided the Aesthetic needs of Maslow into Affection and Leisure and Costanza created a new category called reproduction from the subsistence category of Max-Neef's. Also Max-Neef changed the name of Cognitive needs of Maslow into Understanding, etc.

Table (1): Human Needs, as presented by various theorists
Based on (Kök, 2007)

Maslow	Burton	Rosenberg	Max Neef	Costanza et al.
Food, water, shelter	Distributive justice	Physical Nurturance	Subsistence	Subsistence
Safety and security	Safety, Security	Interdependence	Protection	Reproduction
Belonging or love	Belongingness	Love Integrity	Affection	Security
Self-esteem	Self-esteem	Autonomy	Understanding	Affection
Cognitive needs	Personal fulfilment	Play	Creation	Understanding
Aesthetic needs	Identity	Celebration and mourning	Identity	Participation
Self-actualization	Cultural security	Spiritual Communion	Leisure, Idleness	Leisure
	Freedom		Freedom	Spirituality
	Participation		Participation	Creativity/emotional expression
				Identity
				Freedom

Based on the above table, we find that these researchers or philosophers modified Maslow's model of human needs in order to accommodate their time period. This was the main reason for choosing Costanza's model, which is the most recent.

The framework of human needs of Costanza, et al. (2007) was based on Max-Neef's (1992) Matrix of Human Needs, which was based on Abraham Maslow's hierarchy of

human needs. Costanza et al. (2007) framework of human needs was divided into eleven aspects as shown and described in table (2).

Table (2): Costanza et al., (2007) list of human needs and their description

Source: Costanza. et al. (2007)

Human needs	Description (direct satisfiers)
Subsistence	Food, shelter, vital ecological services (clean air and water, etc.) healthcare, rest
Reproduction	<ul style="list-style-type: none"> ▪ Nurturing of children, pregnant women ▪ Transmission of the culture ▪ Homemaking
Security	<ul style="list-style-type: none"> ▪ Enforced predictable rules of conduct ▪ Safety from violence at home and in public ▪ Security of subsistence into the future ▪ Maintain safe distance from crossing critical ecological thresholds ▪ Stewardship of nature to ensure subsistence into the future ▪ Care for the sick and elderly
Affection	<ul style="list-style-type: none"> ▪ “Being able to have attachments to things and persons outside ourselves; to love those who love and care for us, to grieve at their absence.” (Nussbaum as referenced in Costanza) ▪ Solidarity, respect, tolerance, generosity, passion, receptiveness
Understanding	<ul style="list-style-type: none"> ▪ Access to information ▪ Intuition and rationality
Participation	<ul style="list-style-type: none"> ▪ To act meaningfully in the world ▪ Contribute to and have some control over political, community, and social life ▪ Being heard ▪ Meaningful employment ▪ Citizenship
Leisure	Recreation, relaxation, tranquillity, access to nature, travel
Spirituality	<ul style="list-style-type: none"> ▪ Engaging in transcendent experiences ▪ Access to nature ▪ Participation in a community of faith
Creativity/emotional expression	Play, imagination, inventiveness, artistic expression
Identity	Status, recognition, sense of belonging, differentiation, sense of place
Freedom	<ul style="list-style-type: none"> ▪ “Being able to live one's own life and nobody else's. This means having certain guarantees of non-interference with certain choices that are especially personal and definitive of selfhood, such as choices regarding marriage, childbearing, sexual expression, speech and employment” ((Nussbaum as referenced in Costanza) ▪ Mobility

1.2 SUBJECTIVE WELL-BEING (SWB)

In the 1960's and 1970's, it became obvious that the measures of social and economic well-being indicators were not sufficient to capture the real well-being of individuals, that's why researchers and scientist spend a lot of time trying to investigate the differences in meanings and measurements of subjective well-being (Vemuri & Costanza 2006).

Lucas et al. (2003) made the dominant theory of human well-being in psychology and it has been the set point theory of human well-being that has been developed through time and researchers. The theory of Lucas et al. (2003) discussed that each person has a

“*happiness set point*”, this happiness set point is different from one person to another depending on the person’s genes, personality and experiences of deviations caused by living events, situation or circumstances. Lucas et al. (2003) indicate that the SWB should be a function of the genetic form of the population, and not be affected by different factors such as environmental amenities, education, income, health, etc.

Vemuri & Costanza (2006); Costanza et al. (2007) and many other researchers agreed that subjective well-being (SWB) analyses and evaluates studies on the lives of individuals using both cognitive judgments of life satisfaction and evaluations of their moods and emotions. SWB can be measured by interviewing individuals or groups and asking them to evaluate their general well-being, happiness, utility, welfare and life satisfaction.

In this study, we based our explanation of human well-being on the above scientists and researchers. We investigate the effect of parks on human happiness, utility and welfare as a way of measuring human well-being.

2. ELEMENTS OF PARKS

The significance of parks has been placed high on the research agenda, with many existing studies focusing on the analysis of the social, transportation, climatic, ecological, and economic benefits of parks. Parks have been known as main contributors to the physical and environmental qualities of urban districts and neighborhoods. A new view of public and urban parks has lately been developed. This new view doesn’t focus on parks as places of visual assets and recreation to the communities. It focuses on parks as valuable contributors to the urban policy objectives, such as property value, social life, job opportunities, public health, microclimatic control, visitors and tourist attraction, protection and increase of biological diversity, economic benefits of trees, etc.

In this research, we are not only considering parks as enhancers of environmental quality of urban neighborhoods and districts, but also as an important resource in satisfying the human needs and well-being of the urban neighborhoods.

The framework of the elements of parks used in this study was adapted from Saelens et al. (2006) framework which has divided the elements of parks into five as follows:

1. Trail/path:

Trails, Path, pavements or footpath networks are important elements in landscape, and they allow people to enjoy the landscape, whether it was a natural landscape such as mountains, forests, coastal or inland waterways or artificial landscape such as parks and farms. Landscapes can be destroyed by poorly constructed paths, while well designed pathways and trails can add a great value to the landscape and allow people to experience it (Ferris, 2009; Johnson, 2010).

2. Designated and specific use areas:

These areas include: Open space, Meadow, Wooded area, Picnic area, Camping site, Shelter/pavilion/gazebo, Entertainment venue/stage, Area surrounding park, Wildlife or pet area, Parking lot. The Greeks were the first who made public spaces or specific use areas such as the temenos, the agora, etc. Moreover, in the last decades of the eighteenth century the parks were public lands, and it mixed between private and public realms, working and playing, producer and consumer, etc. Public parks and open spaces helped people to transform from passive spectators to active participants. Specific use areas such as parks have a major role in accomplishing three main objectives: provide health and

pleasure, it is a work of art, and a powerful influence to the city. Urban green spaces and specific use areas, especially the parks increase the quality of life by presenting several recreational experiences. Benefits and performances of green spaces are measured by the user's level of satisfaction (Muderrisoglu, et al. 2010; Sirneoforidis, 1993).

3. Water areas:

Water plays an important role in landscape. Water features include lakes, ponds, fountains, fishing area, stream/creek, wetland, reflective pools and waterfall. The landscape is the city or district image, and this image is affected by natural land formation and its covering. The Buildings and vegetation can be considered as two main materials of covering. Moreover, Water is equal importance, and it can be considered as the third material and it provide visual enjoyment, improve the micro-climate, can be considered as focal points, create recreational opportunities, irrigation reservoirs and native habitat (Sienkowska, 1990; Hong, et al. 2008).

4. Other amenities and facilities:

Site amenities and facilities have a positive effect on the performance of the site, and it include benches, trash receptacles, tables, vending machines, flag poles, telephone booths, bus shelters, kiosks, mail boxes, sculptures, walls, fences, monuments, memorials, gazebos, drinking fountains, bike racks, and picnic shelters. Arts and sculptures play a prominent role in landscape and architecture public spaces and its usual job is the representation of different expressions of a cultural relationship between man and site as well as man nature.

5. Playground equipment and fields and courts:

Playgrounds, fields and courts includes playset, imaginary play structure, ground surface, things to swing/hang from, things to climb on/up/through, things to stand or walk on, swings, things to slide down, etc. They are intended to get people out from behind glass and walls brick. They provide a place where children's are able to play in shaded, bigger and safe places. Playgrounds, fields and courts help neighbours in knowing each other and coming together and creating relationships and building a sense of community (Prow, 1999).

In this study, the park's design is not the primary scope, we are using the elements of parks to measure the relations between parks and QOL. However, for more information about the elements of parks you research in Ferris, (2009); Hong, et al. (2008); Johnson, (2010); Muderrisoglu, et al. (2010); Portman, (2007); Prow, (1999); Saelens, et al. (2006); Sienkowska, (1990); Sirneoforidis, (1993) and others.

3. EFFECT OF PARKS ON QUALITY OF LIFE (QOL)

Many studies argued that urban parks have strategic importance for the quality of life of any increasingly urbanized society. Increasing empirical evidence indicates that the presence of natural assets (i.e., urban parks, forests and green belts) and components (i.e., vegetation, topography, water) in urban contexts contributes to the quality of life in many ways. In addition to important environmental services such as air and water purification, wind and noise filtering, or microclimate stabilization, natural areas provide social and psychological services, which are of vital significance for the liveability of cities and the well-being of urban inhabitants. A park experience may reduce stress (Ulrich, 1981),

enhance contemplativeness, revitalize the city dweller, and provide a sense of nonviolence and tranquillity (Kaplan, 1983).

3.1 EFFECT OF PARKS ON HUMAN NEEDS

Since we are studying the effect of parks on quality of life, subsequently its effect on human needs, using Costanza et al. (2007) framework, we find that the theory proposed by Costanza et al. (2007) makes an extremely important contribution by distinguishing needs and satisfiers. Moreover, we find that parks have been direct and/or indirect relation with some of these aspects. We also find a repetition and overlapping of information. This study uses Costanza et al. (2007) framework of human needs but with minor changes in order to serve our topic. Since we are using Costanza's model we start by identifying aspects of all human needs.

Aspects of needs:

Adapted from the Costanza's (2007) framework which has divided the needs into eleven aspects as follows:

Subsistence: Food, Shelter, air, water and healthcare. **Reproduction:** pregnant women. **Security:** Safety and Security. **Affection:** pleasure, beauty. **Understanding:** Access to information. **Participation:** Participate in the community. **Leisure:** Recreation, relaxation, **Spirituality:** Access to nature. **Creativity/emotional expression:** Play, artistic expression. **Identity:** sense of belonging and sense of place. **Freedom:** choice, value.

3.1.1 Parks and Subsistence:

Subsistence is the primary or basic needs for any human being to survive, which consist of food, water, shelter, access to clean air, access to clean water and Healthcare.

Trees and plants planted in parks provide people with food, fodder, fuel, wood for shelters, timber for construction, clean air, improve public health, and they help in improving the water quality (Bisgrove & Hadley 2002; Kaplan & Kaplan 1989; Priego & Canales 2008; Sherer 2003; Sorte 1995; Tyrväinen et al. 2005).

- **Food**

Until today trees are used as a food supply and a lot of parks are planting trees not only for aesthetic views, to decrease air and water pollutants and providing shaded areas in the parks, but also in order to provide a stable income by selling their fruits (Tyrväinen et al. 2005).

- **Shelter**

Park trees may be used to provide people with shelter from strong winds in the cold climate regions, and they are used to provide shading in hot climate regions such as Mediterranean (Bisgrove & Hadley 2002; Givoni, 1991; Givoni, et al. 2003; Georgi 2006; Sherer 2003). Green areas and trees could improve air conditions locally and provide human shelter from ultraviolet radiation, which may cause a lot of infections (Tyrväinen et al. 2005; Priego & Canales 2008; Bisgrove & Hadley 2002). Moreover, the parks' trees provide wood, and it could be considered as a wood supplier for constructing houses and building, which are considered human shelters (Tyrväinen et al. 2005).

- **Air**

Air pollutants are often diffuse and one of the main roles of urban parks and urban forest is to remove the air pollutants from urban areas (Tyrväinen et al. 2005). Improving air quality using plants as filtering devices has been a major goal for

environmental policies since the 20th century. Therefore, parks and green areas have been placed high on the research agenda while air quality remains a major concern.

Priego & Canales (2008) said that Smith, 1978; 1990 states that the stomas of the leaves of the trees reduce the gaseous agents by attracting them. After that they react with the internal structures. Plants reduce the small particles that are hovering in the atmosphere. These particles can be absorbed by plants and trees (Givoni, 1991; Priego & Canales 2008) although most of these particles retained to the surface of the plant and then to the system through the leaves falling off or when they are washed by rain. In this way, parks trees and plants proved that it is a temporarily effective way for removing many atmospheric particles (Priego & Canales 2008).

- **Water**

Water plays an important role in human settlements, and it is one of the basics human needs for survival. Streams, rivers, ponds and lakes are primary sources for drinking to the population. Parks plants and trees have indirect relation with water. They enhance water quality through water filtration. In parks, forest lands and green areas, an average of 50% of the water is filtrated, although in residential lands the water filtration average is only 35%. In residential lands water filtration rates drop to 15%.

Protection of green areas, parks and forests is important for water quality. The hydrological function of urban green areas, parks, forests, woodland and trees is increasingly stressed as protection of water drinking resources. Open spaces covered by trees perform infiltration of rainwater and recharge the groundwater in an otherwise sealed urban area (Tyrväinen et al. 2005).

- **Healthcare**

Direct contact with natural views such as urban parks, forests and open green spaces have strong effect on individual health and on societies. It helps people to relax and decrease the work stress and give them peace. Moreover, they allow people to rest physically and mentally (Chapman, 2002; Kaplan & Kaplan, 1989; Price, 2003; Priego & Canales, 2008; Sorte, 1995). Landscape elements in hospitals contribute to faster patient recovery. Many doctors recommend that patients should go more often to parks, forests or green areas because they have a positive effect on human health, and they motivate people to participate in activities such as walking and cycling. This participation increases physical exercise, which decrease the rate of middle-aged and elderly heart disease. Moreover, tree shades prevent the exposure to sun rays, which affect the human health and cause a serious problems associated with ultraviolet radiation (Priego & Canales, 2008; Tyrväinen et al. 2005; Ulrich 1981). Human health is affected by air quality. As mentioned before, parks improve the quality of living environment by improving its air quality. Air quality is improved because of the leaves of trees, which take up many pollutants such as ozone, ammonia, nitric acid vapour, nitrogen dioxide, ammonia, particles (aerosols and dust) and sulphur dioxide these pollutants increase the community disease and some of this disease can cause serious health problems (Givoni, 1991; Priego & Canales, 2008; Tyrväinen et al. 2005).

Research proved that natural views affect work efficiency, satisfaction and well-being and make workers more productive with fewer illnesses reports, and higher job satisfaction (Muderrisoglu, et al. 2010; Kaplan & Kaplan, 1989; Sorte, 1995; Wolf, 2004).

3.1.2 Parks and Reproduction

Parks do not have direct effect on reproduction but it provides a pregnant woman with a place to walk and undertake physical exercise, which is needed in the pregnancy period. Parks also provide them a clean environment, less pollutant air and aesthetics views, which helps them to relax and walk much longer.

3.1.3 Parks and Security

Each person needs to feel safe and secure in order to act freely without being scared and terrified from the unknown mysteries and in order to continue living normally. As we are going to see parks assist in reducing crimes and violence.

- **Safety and security**

To feel safe and secure is one of the most important human needs. In the last few years the level of crime and violence has increased. As migratory flows from rural area to urban areas, the residents of the rural came to big cities seeking for work, new job opportunities, better income and improving life standards. This has twisted districts and cities into breeding grounds for struggle and poverty pursuant to crimes and violence (Priego & Canales 2008).

Many researchers proved that trees and shrubs provide people with a sense of enclosure and safety. Moreover, parks and open spaces have a great effect on reducing crimes and violence by providing the youth a safe place to fill up their time and to interact with each other in a healthy way instead of being involved in criminal activities. Florida's police department documented 28% drop in youth arrest of juvenile after the recreation of parks and beginning the program of STARS in 1990. In Kansas City the arrest for juvenile has been decreased 25% in one mile radius where night parks and basketball playgrounds are offered (Priego & Canales 2008; Sherer, 2003).

3.1.4 Parks and Affection

Research shows strong emotional ties between people and natural elements settings such as plants, trees, shrubs, flowers, which are planted in parks and forests. Those studies show that residents living in neighborhoods with parks and green spaces are enjoying strong social ties, aesthetic views, having more pleasure and more attachment to their neighborhood than those who live in closed areas with no green spaces. Research also proved that the levels of vegetation help in predict the form of neighbour's healthcare and social ties (Chapman. 2002; Dwyer, et al. 1991; Dyck, 2003; Kaplan and Kaplan 1989; Kruger 2008 and Sherer, 2003). This part will be covered more in the part of sense of belonging under the topic of parks and identity.

3.1.5 Parks and Understanding

In order for people to live efficiently, they need to learn and understand their needs and the surrounding environment. They need to learn and act in order to improve their living standards. Parks help in improving the human learning skills.

- **Access to information**

Parks can be considered as a process of informal learning. The characteristics of this informal learning can be described as enjoyable, motivational, experiential, engaging, and personal. Informal learning in parks occurs through interpretive activities such as talking, playing, brochures, self-guided trails, etc. Informal learning in parks is considered as any learning experience that takes place outside the school environments. Parks help in creating social interaction between visitors.

When social interaction occurs in groups it helps in deeply developing understanding, values and beliefs (Rademaker, 2008).

3.1.6 Parks and Participation

People need to communicate and share their thoughts and beliefs with others and that's why they lived in groups and after while it turns to communities and then to countries and so on, they need to give and receive love, information, habits, cultures, even beliefs.

- **Participate in the community**

There are many ways in which parks, forests and green spaces help in community participation. They offer activities, such as places where people can walk, talk, meet friends, or engage in team sports. These activities help in creating social relations between neighbours. They also help the residents to spend more time in their neighborhood and create a sense of belonging and make them more attached to their neighbourhoods. Parks and gardens increase resident's sense of community ownership and stewardship and help the residents to focus on neighborhood activities (Sherer 2003; Tyrväinen et al. 2005; Kruger, 2008; Chapman, 2002; Priego & Canales 2008).

3.1.7 Parks and Leisure

Parks help people to rest, relax, enjoy the beauty satisfy the human need to nature by creating an artificial view for paradise, and it gives them an accessibility to nature.

- **Recreation**

Public parks create a viewpoint for the surrounding area and give a space for desirable recreational activities such as a safe place where people can walk, meet friends, engage in team sports, horse riding and fishing, biking, skateboarding, hiking, survival games and paintball. (Dyck, 2003; Kruger, 2008; Sherer, 2003; Chapman, 2002; Priego & Canales 2008; Tyrväinen et al. 2005).

Physical activities of people are obtained in parks for health, social, economic benefits. Surveying of parks' physical activity is a recommended strategy in research in order to study the potential impacts of the outdoor recreational environment on physical activity levels (Kruger, 2008).

- **Relaxation**

Humans are programmed to imagine and recognize natural environments, which provide relaxation and restoration to realize nature benefits. Many researchers were concerned whether natural sound, which occurs in parks or human-made sounds are giving more relaxation for humans. For example, the sound of a rose-breasted singing in forests or wildlife provides people with greater satisfaction than sighting a bison through a window (Chapman, 2002).

3.1.8 Parks and Spirituality

Humans are deeply rooted toward the nature and physical environment as well as preferences and behaviours, which affect their spirits. Moreover, the deepest and strongest attachments and sense of belonging between people and natural environments, such as parks, gives birth to spiritual experiences in which people feel a sense of connection and belonging to a larger reality that gives meaning to their lives (Chapman, 2002).

- **Access to nature**

Research proved that people preferred natural environments than the highly urbanized or indoor settings because built environments had been constraining and considered

harmful environments (Chapman, 2002; Kaplan and Kaplan 1989; Sherer, 2003; Dyck, 2003; Kruger 2008).

Kaplan & Kaplan (1989) state that “*Nature is a valued and appreciated part of life.... Nature seems ... important to people.... Human functioning is impacted by its evolutionary origins, which speak loudly for our strong connection to nature in our primitive role before technological advances*”.

Research proved that access to nature affect positively the person’s mood, life and work satisfaction, while people with few access to nature show a poor awareness or cognitive function, poor impulse control and poor managing life issues (Kruger 2008; Chapman, 2002).

3.1.9 Parks and Creativity/ Emotional Expression

People need a place to express their energy and emotions, they need to play and enjoy their time. Parks provide them a safe place to express their energy and emotions, and it creates a sense of creativity in them.

- **Play**

For kids, playing helps them to learn and to develop the coordination languages between each other, as it helps them to have a cognitive thinking, muscle strength and reasoning abilities.

Research proved that playing teaches children how to cooperate and interact with each other, and it helps them in creating the foundation layer for school and working success. Moreover, it proved that children learn more while playing than sitting in class and learn from their teachers (Prow, 1999; Tyrväinen et al. 2005).

- **Artistic expression**

Trees give an aesthetic quality to urban streets. Parks and plantation provide spiritual and emotional experiences for the population and strengthening the resident’s roots to particular places (Priego & Canales 2008).

The aesthetic issue is one of the most important issues that any owner would search for in their property, the aesthetic value control the selling market, parks and landscape create an aesthetic view which makes people aim to live beside it and enjoy the view, it also helps in relaxation and effects the psychological state of humans.

3.1.10 Parks and Identity

The human personal identity depends on his relationship with nature. Human relation with nature depends on the influence of the natural world on human spiritual development, emotional, cognitive, and aesthetic balance (Chapman, 2002; Sherer, 2003; Dyck, 2003; Kruger 2008).

- **Sense of belonging and sense of place**

Parks and open spaces take credit for bringing the neighborhood together. Residents living in neighbourhoods with parks, and green spaces are enjoying strong social ties and more attached to their neighborhood than those who live in closed areas with no parks and green spaces. Social ties are considered to be strongly affected by population density. Lack of resident activities and lack of privacy, which is provided by parks conclude poor social relations between neighbors and a poor sense of place in the community. Districts and neighborhood with parks and green spaces helps the residents to come to know each other and work together in developing their neighborhoods and give it an identity as it develops the sense of belonging between

the residents and creates a sense of unity between the people and make them share a common belief (Sherer 2003; Priego & Canales 2008).

3.1.11 Parks and Freedom

Marriam-webster defines ‘freedom’ as “*the quality or state of being free, the absence of necessity, coercion, or constraint in choice or action*”. Freedom is also defined as feeling free (liberation) from the power of another or from restraint or slavery. Moreover, Verme, (2009) defined freedom as “*a choice as the size of an opportunity set with mutually exclusive alternatives. The larger is the set of alternatives (choices) the more is a freedom of choice*”. From that perception, the freedom parks have been made. In America the Freedom Park is considerable as home to significant American history. It is recognized nationally as the site of the earliest free black settlement dating 1803-1860 in America. Many researchers defined the Freedom Park differently. Some of them said that Freedom Park is “*an enormously complex project when one naturally proceeds as per the tenets of the Ranganathan Manifesto,*” while others said that it means “*freedom from the idiosyncrasies of the designer*”. Whatever its definition was, all what we need to know that these types of parks made people happier and made them start to spend more time in parks. In Parks people love the feeling of freedom that close contact with the natural elements gives to them in addition to the excitement and natural views.

3.2 EFFECT OF PARKS ON SUBJECTIVE WELL-BEING (SWB)

Costanza, et al. (2007) described SWB as “*assessed by individuals' or groups' responses to questions about happiness, life satisfaction, utility, or welfare. And the relation between the fulfilled of human needs and overall subjective well-being is affected by the (time-varying) weights individuals, groups, and cultures give to fulfil each of the human needs relative to the others*”.

Many studies in this area proved that people in wealthy and rich countries report higher levels of subjective well-being than those in poor countries like Egypt--our study area. However, wealthy countries are strongly linked with human rights, fulfilment of basic needs, equality, and individualism (Vemuri & Costanza 2006).

The most important benefits of parks that it makes people happy and helps them to enjoy their time and that are the sign of its successful as well as its service to welfare and utility.

3.2.1 Effect of Parks on Happiness

Most people spend their lives working in order to gain money, but they do not recognize that they are scarifying their health as well as their family life. Although spending more time in family life and good health would increase individual happiness.

Chapman (2002) stated that “*moments of the highest happiness and fulfilment that are often achieved by a nature experience and other experiences such as creative movement and intellectual insight.*”

Parks, sports and leisure have been one of the successful methods in increasing the individual’s level of happiness. Parks provide a significant opportunity for people to interact with each other in a healthy way. They also give them a chance to get to know different people from different districts with different habits and cultures. Parks create a viewpoint for the surrounding area and give a space for desirable recreational activities. In many countries, parks are expected to provide activities such as running and walking

tracks, hiking, biking, horse riding and fishing. These activities increase the human level of happiness and encourage them to spend more time in parks (Dyck .B, 2003).

Amusement parks are huge business project that provides a large amount of happiness for individuals (Tibben-Lembke, 2007). According to the International Association of Amusement Parks & Attractions (IAAPA), Walt Disney theme parks attract more than 335 million visitors to U.S. in 2006, in which 1.5 billion rides were taken. Twenty-eight percent of the U.S. population visited this amusement park in 2006, and 50% of U.S population planned to visit the park in the next year (Tibben-Lembke, 2007).

3.2.2 Parks Utility

The relationship between humans and natural world is deeply integrated with the human conscious and subconscious mind and that makes it not easy to analyze. Nonetheless, this relation has been the concern of many researchers in the last few years due to its importance and many researches expressed their ideas in this field by different ways (Sherer, 2003; Dyck, 2003).

In recent years, there have been attempts to examine the human relationship with the natural world. Humans depend on nature for basic material needs such as food, water, shelter, etc. Moreover, they depend on nature for emotional, psychological and spiritual needs.

- **Economic**

Parks and urban trees provide an economic stability to the district or neighborhood by increasing property values. People think that neighborhoods with parks and trees are the most attractive places to live in and that increases the value of homes in the planted area (Anderson & Cordell, 1988; Dwyer et al. 1992; Priego & Canales 2008).

Public parks have a great influence on the real estate value since the real estate market demonstrates that most people are ready to pay a large amount of money on a property located close to a public park or open space than for a property that doesn't have a view of vegetation. Increases in real estate values due to plantation have a direct effect on the community economy (Priego & Canales 2008; Sherer 2003).

Moreover, trees have a great influence on woods, fuel wood and fiber production, which is produced from plantation and boost the community economy (Dyck 2003).

- **Social**

Parks have been one of the successful methods in creating a social life between the residents of the surrounding areas as well as providing a significant opportunity for them to interact with each other in a healthy way. It also gives the residents a chance to know different people from different districts with different habits and cultures. Moreover, parks create an aesthetic view for the surrounding area and give a space for desirable recreational activities. Parks and open spaces are expected to provide recreational opportunities such as horse riding and fishing, hiking and biking (Anderson & Cordell, 1988; Dyck, 2003; Priego & Canales 2008; Sherer 2003).

- **Environmental**

Environmental variables such as solar radiation, air temperature, wind speed and humidity are important for human thermal comfort (Akbari et al. 1992). Landscape and plantation can reduce these environmental variables by reducing wind speed, cooling the air by evaporation, and preventing solar radiation from heating the surfaces and surrounding buildings. Therefore, trees function as natural air conditioners, at least with regards to the microclimate of the surrounded area (Akbari et al. 1992).

In a hot region, especially on a hot summer day, a person may be discouraged to stay outdoors and be exposed to the sun. This is depending on the air temperature, the surface temperature of the surrounding areas, the humidity level and the wind speed. The availability of shaded outdoor areas may result in greater utilization of the public parks by the public. While in a cold region, people are discouraged to stay outdoors and become exposed to low air temperature, high wind speed and the obstruction of the sun in shaded areas, while the occurrence of sunny areas protected from the winds may encourage people to interact in public activities in outdoor spaces. This concludes that architects and landscape architects should understand the microclimate in order to design appropriate landscape environments (Dyck 2003; Givoni, et al. 2003).

3.2.3 Parks and Welfare

Researchers argued about whether parks have a positive or negative effect on welfare. Some researchers state that public parks, open spaces and forests have a social, economic and climatic effect on welfare. However, they argue whether environmental regulations are essential to ensure public health and welfare of people.

Protected areas, public parks and forests take away the local people rights and private property and can be an unfair drag on their present and future welfare. Although urban parks produced economic values for districts and individuals, but these benefits distributions is so skewed against poor people, the role of parks in low urban areas developments are very minor. The government either repay affected residents with a low amount of money for the lost property and rights or decrease their poverty size (Wilkie, et al. 2006). One of the welfare problems is to establish parks without attention to the economic, educational, social, cultural, and spiritual welfare of people who live near the parks districts.

Empirical evidence exists in scientific research found that the demonstrations of parks and protected areas are a drag on the welfare of local people for several reasons. It decreases the income of poor annual household since that the income resources of household from the forests ranged from \$0 to \$3458. It decreases the social impacts or retroactive measuring welfare on local households (Wilkie, et al. 2006).

Finally, the welfare of households that usually have claims on park, forests and protected areas resources have never been compared alongside with the welfare of “control” households. As a result one cannot assess whether changes in the welfare of park households at the end of the day result from the establishment of the protected areas or from other exogenous factors such as a change in currency or commodity values that are likely to affect the welfare of all households within a nation (Wilkie, et al. 2006).

4. PRACTICAL APPLICATION

The aim of this paper is to examine the role of public parks in enhancing the quality of human life in Egyptian urban environments. It measures 'quality of life' using AHP method (Analytical Hierarchy Process) in terms of 'human needs' and 'subjective well-being'. This process was used in order to measures the rate of effectiveness of parks on human needs and SWB.

4.1 METHOD:

AHP method (Analytical Hierarchy Process), one of the most popular decision methods, is a powerful Multi-criteria Decision Making method. AHP makes rational decisions and helps in building criteria lists and organizing its structure. In this research, we use the MAKE IT RATIONAL software (<http://makeitrational.com>), which applies AHP methodology and pair-wise comparison using input data of relative weights of different criteria. It analyzes and displays the results in a graphical form as shown in figures (2), (3) and (4).

The criteria that we used in this program were the five elements of parks as described in Section 2. These criteria were used in order to measure the strongest and weakest indicators of human needs and SWB in relation with the elements of parks. It helped us to analyze stability of alternatives ranking for human needs and SWB indicators (sensitivity analysis). Opinions of landscape architects and architects were taken in order to reach a decision in the pair-wise comparisons.

AHP analyses based on pair-wise comparisons have been conducted by 13 professional architects and landscape architects. They were asked to give weights to each of human needs and subjective well-being criteria. The results of AHP and pair-wise comparisons are illustrated in Fig. 3 and Fig. 4.

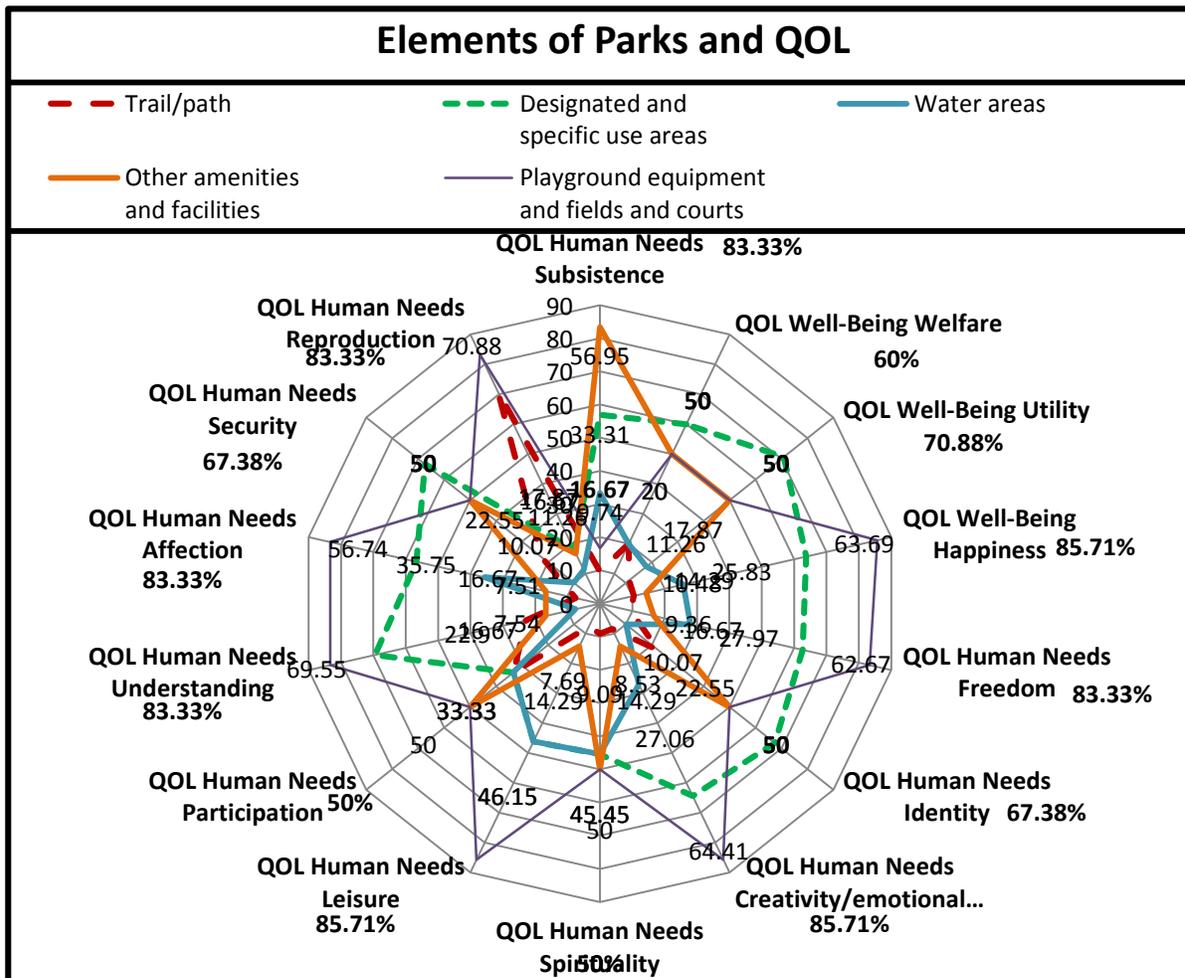


Fig [2] Relation between Elements of Parks and Quality of Life (QOL)

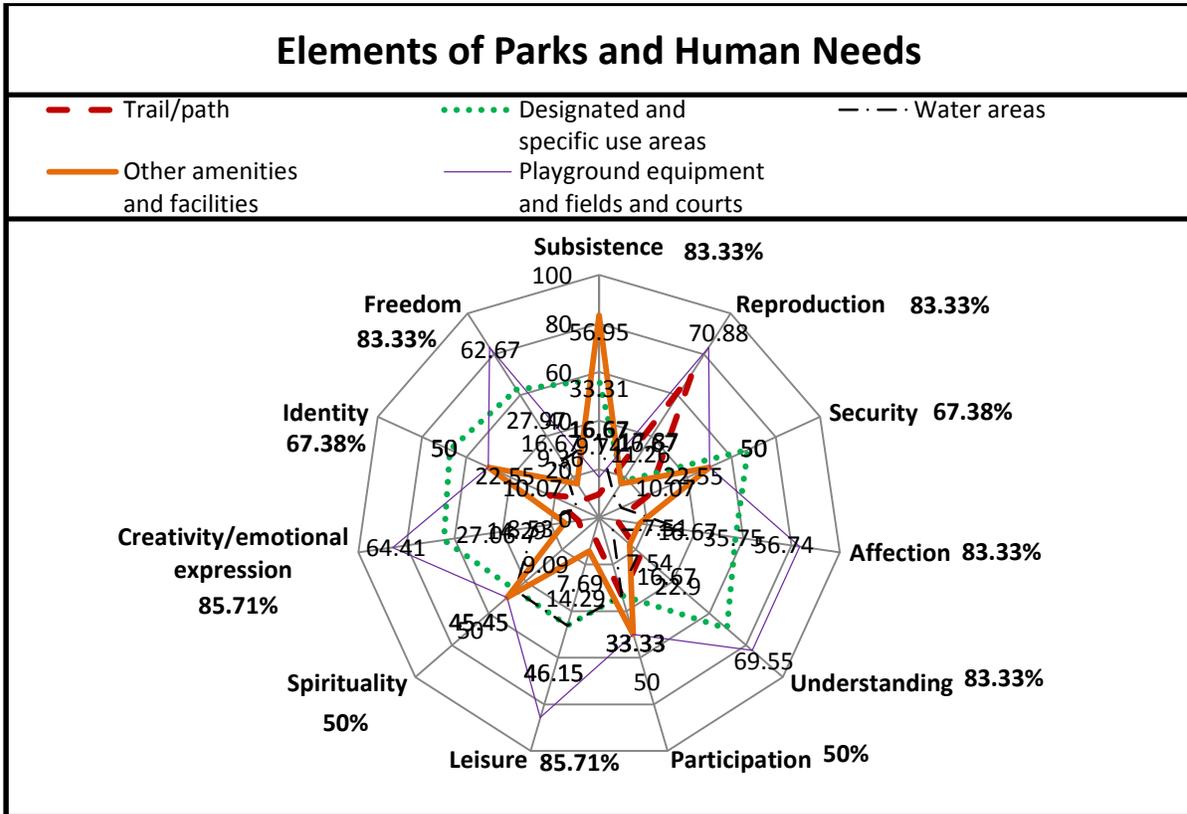


Fig [3] Relation between Elements of Parks and Human Needs

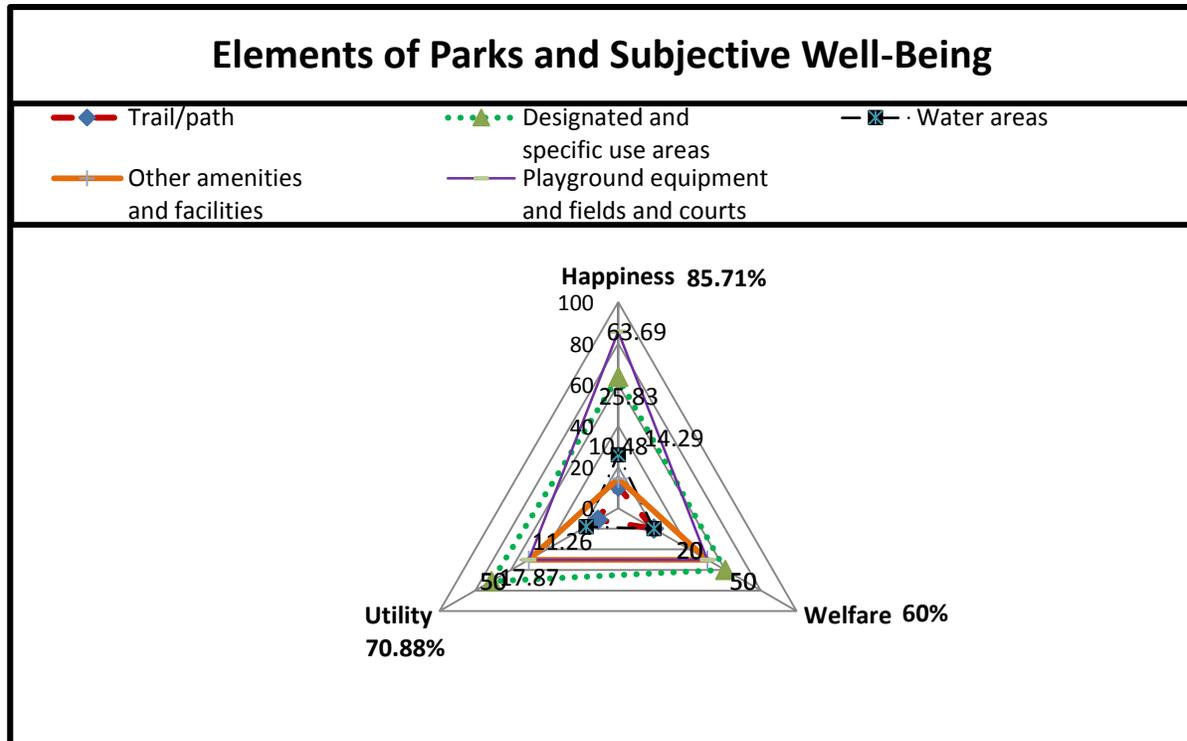


Fig [4] Relation between Elements of Parks and Subjective Well-Being (SWB)

4.2 RESULTS & DISCUSSION:

Analysis of results revealed that most landscape elements of the park contribute significantly to human needs (fig.3) and subjective well-being (SWB) (fig.4).

4.2.1 Relationship of Parks and Human Needs

From human needs point of view, we found the following:

- Trails and paths significantly affect reproduction as they provide an opportunity for a woman to walk in a peaceful environment. They also contribute to participation as these trails provide space that accommodates social activities include meeting other groups, communicating with neighbours and creating opportunities for social relations.
- Designated and specific use areas have a considerable impact on understanding, creativity, identity, and security. Specific use areas enhance understanding as they provide chances to access information and supports informal learning. These areas also contribute to creativity as they help people to meet, interact and cooperate. They reinforce the need for identity as they strengthen the relation between park visitors and nature. They help in bringing the neighborhood together. The impact on security is also considerable as they provide environments where people feel free and safe and act freely. Therefore, it reduces violence and crimes.
- Water areas are major elements of a park, especially in hot dry climate. They provide aesthetic qualities that enhance the needs of spirituality, participation, leisure and subsistence. Water is very well related to spirituality throughout history as it is a symbol for purity in most religions. Existence of water will support the spiritual need of visitors. Water is quite related to leisure as it provides a natural element for visitors to interact with it in various setups, including: fountains, cascades, waterfalls and lakes. Water also enhances participation because it provides context for groups to meet and communicate, therefore, creating social relations.
- Amenities and facilities contribute to subsistence, identity, participation and security. The need for subsistence is related to amenities as they provide shelter, air and water for visitors to maintain their activities in the park. Shelter and water are quite important in hot sunny days and months.
- Playgrounds are a significant component of a park. They contribute to freedom, creativity, leisure and understanding. Relation to freedom is interpreted in terms of contact with nature enhanced feeling of being free and provision of choices for visitors. Creativity is very well related to playgrounds as they allow visitors to play, learn, cooperate and help children to develop their artistic skills.

4.2.2 Relationship of Parks and SWB

Elements of parks were found related to SWB as shown in figure (4).

- Trails and paths were significantly related to welfare. These elements usually help users to have dynamic experience and expose them to nature and outdoor climate. Welfare was found depending on social and climatic factors. Social life between residents is increasingly enhanced by providing opportunities so that residents get to know different people from different districts. The aesthetic view of a park depends on the trails and paths from which people will have various view points and visual experience.

- Designated and specific use areas were found affecting all SWB parameters equally. They have direct relations with happiness, utility and welfare. These elements should be considered an important component in future parks.
- Water areas were related to happiness, since they help in increasing the level of human happiness by creating chances to relax, enjoy amenities and interact with water features.
- Other amenities and facilities are connected to welfare and utility. From the utility point of view, facilities help in increasing the property values by allowing people to create social life between residents.
- Playgrounds were found related to happiness. They increase the level of human pleasure using sport activities, especially with younger generations.

5. CONCLUSION AND FUTURE RESEARCH

The most important finding from this study is the significant impact of parks on quality of life and life satisfaction. In addition, this study explored the positive effects of parks and natural environment on meeting the human needs and well-being. The environmental, social and economic benefits of urban trees and parks for society have proved useful for architects, landscapers and urban planners. Urban parks are no longer considered a mere aesthetic component of the city, but have come to be a part of the urban ecosystem.

Analysis of results revealed that most park elements might contribute to human needs and SWB. Careful utilization of such elements with careful study of social, economic and environment context will help in establishing sustainable QOL in urban areas. Parks, recreation, and public health professionals need to improve their researches and to do more than just showing an increase in park visits over time, they need to prove that park visits have some measurable benefit to human health, social life and economic income. Parks need to have some measurable benefit for human quality of life.

In this paper, we used the AHP method in order to measure 'quality of life' in terms of 'human needs' and 'subjective well-being'. In future research, we plan to conduct a wider survey in order to study the impact of parks on QOL on a real population sample living nearby an urban park in Egypt.

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