Considering the Utilisation of Green Spaces in Potchefstroom, South Africa: A Tale of Three Parks

By Zaakirah Jeeva and Wian Oosthuizen

Abstract

Public green spaces, commonly known as parks, play an important socio-psychological, physical, and ecological role within cities. They are believed to support active lifestyles, promote citizenship, reduce air pollution, and offer recreational opportunities and psychological restoration. As a result, parks are designed to serve multiple functions. However, previous studies have found that the quality of parks fluctuates depending on the wealth of residents. This variation in quality (supply of park area or facilities) is expected to affect the utilisation (potential demand) of parks, which in turn reduces the benefits derived from these spaces. This paper sought to investigate if the quality of green spaces affects the utilisation of parks in Potchefstroom, South Africa. It observed three parks in three suburbs in the city to compare the quality provided. Furthermore, qualitative data was collected at each park through 30 semi-structured interviews to determine if the utilisation of the parks was affected by their quality. The analysis indicated that there are marked discrepancies in the quality of parks based on the wealth of the residential areas. However, this did not affect the utilisation of the parks. On the contrary, the study found that poor quality parks in lower-income areas were used more frequently, although not in the traditional sense. The study's findings shed light on the green infrastructure inequality in South African cities and display the alternative usages of open spaces. The study calls for a review on how green spaces are planned in South Africa and how municipal finances could be used more efficiently and effectively to plan these spaces.

Introduction

Public green spaces, or parks, are defined as open areas within the city that are provided for public use at no cost and maintained by local authorities. These parks are designed to offer citizens with the opportunity to enjoy nature, relax, exercise, play, and engage in social interactions within a safe and communal environment (Rojas-Rueda et al., 2019). The development of such parks aligns with the 11th Sustainable Development Goal of the United Nations, which aims to promote sustainable urban development, active lifestyles, and emotional well-being for all citizens in an increasingly urbanised world (UN, 2023).

However, various reviews and empirical studies conducted in different regions of the world have revealed that the benefits and infrastructure provided in parks are not equally accessible to all (Wolch, Byrne and Newell, 2014). Research conducted in Australia, South Africa, Spain, and the United States has consistently shown that lower-income residential areas or neighbourhoods with minority racial groups have less access to green spaces, trees, and recreational facilities such as benches, playgrounds, and grassy areas compared to more affluent areas (Astell-Burt and Feng, 2019). Furthermore, these studies have also found that parks in high and middle-income neighbourhoods tend to be cleaner and better maintained than those in low-income areas (Zuniga-Teran et al., 2020). As a result, the benefits that public green spaces are intended to provide are not equally enjoyed by all citizens in urban areas.

In South Africa, the utilisation of public green spaces is complex due to the country's political history, as well as the unique ways in which parks were previously planned. Shackleton et al. (2018) found that although neighbourhood parks in South Africa were planned to provide recreational services on paper, only the parks in the former white areas were developed, while many of the parks in the non-white areas were left vacant. Consequently, in democratic South Africa, many parks in former non-white areas are underutilised because they are underdeveloped (Cilliers, Diemont, Stobbelaar and Timmermans, 2011). This creates a vicious cycle between underdevelopment and the underutilisation of green spaces, with government hesitating to invest municipal funds to develop green spaces that are not being utilised.

However, from a planning perspective, the tendency to design public spaces based on returns of investment, rather than on the social-psychological benefits of such spaces, brings into question who these spaces are being planned for? Who is benefitting, and who is being disadvantaged as a result of these shortcomings? (Rice et al., 2020). This also brings forth questions regarding the level of public participation conducted during the planning of these public spaces and what is deemed as an acceptable utilisation of public spaces.

The aim of this paper is to explore the current quality of parks located in different suburbs of Potchefstroom and to determine how the different parks are utilised. The objective of the study is to determine if residents enjoy equal benefits from these green spaces. Resultantly, the paper will also engage the first dimension of environmental justice—that of distributive justice, which addresses fairness in provision of public spaces and related resources within the South African context (Low, 2013).

The paper is structured as follows. It starts by providing a brief backdrop on the development of South African cities and the relationship with public green space planning. It then describes the methodology, discusses findings, draws conclusions, and provides recommendations. The next section provides a background to the study.

Background

The South African apartheid city stands out as an extreme example of urban social engineering (Venter et al., 2020). Its spatial morphology was based on racial segregation and a hierarchy that systematically disadvantaged those who were classified as 'Non-white' ('Coloured', 'Indian/Asian', or 'Black'). One of apartheid's aims was to limit the extent to which affluent white municipalities bore the financial burden of servicing the more disadvantaged non-white areas (Kuruneri-Chitepo and Shackleton, 2011). To support this objective, the racial suburbs were treated as separate administrations and regulations were put in place to control social interaction between racial groups in public spaces (Seekings, 2011). As a result, within these settlements, white people lived

in well-planned urban neighbourhoods with good quality infrastructure and urban amenities, whilst non-whites lived in rural neighbourhoods with poor services and minimal infrastructure (Seekings, 2011).

Additionally, apartheid regulations restricted any development in non-white areas without prior approval and did not allow most retail or industries to develop in non-white areas. As a result, residents of these non-white administrations were forced to shop and work in white areas. Resultantly, the rates and tax revenues for non-white administrations were limited and communities lacked both power and resources to tackle community problems and provide facilities (McConnachie and Shackleton, 2010). This spatial-administrative system created a sense of exclusion, spatial fragmentation, and high levels of inequality within settlements. Image 1, below, illustrates the stark inequality in the provision of green spaces within South African cities during apartheid (Gwedla and Shackleton, 2017).

Image 1: *The contrast and inequality of green spaces during apartheid (Sources: Louise, 1988; Horree, 2023)*

As a consequence of these financial inequalities and rigid laws, many parks or open spaces in non-white areas remained as open spaces of land, with no facilities, while parks in the former white areas had green infrastructure and vegetation (Das and Honiball, 2021). In 1982, the Black Local Authorities attempted to raise additional revenue for white administration by charging Black people extra rent and service charges. This frustrated residents and they counter-implemented consumer and rent boycotts, which resulted in financial stress on the white administrations. As a first step, to stop civil disobedience, the apartheid government compromised by lifting influx control measures, which introduced rapid migration of non-whites into urban areas and sprawling informal settlements on the periphery (Lehohla and Shabalala, 2014).

In 1994, as the African National Congress (ANC) came into power, it pledged that environmental inequalities and injustices would be addressed as an integral part of the party's post-apartheid reconstruction and development mandate (ANC, 1994). Accordingly, a discursive and institutional space was created for the rethinking of environmental and administrative issues. The fundamental outcome of these developments was the broadening of the definition 'environment' in legislation to include the working and living space of non-white South Africans with the hope of bringing in environmental equality and distributional justice (Radebe and Irurah, 2016). It also introduced a 'one-city, one-tax base' principle which integrated the various racial administrations under one municipality and pledged that revenue collected was to be used to uplift all the areas. Subsequently, the apartheid Group Areas Act was abolished and individuals of different racial profiles were allowed to occupy homes in former white areas and utilise public spaces that were previously restricted (Das and Honiball, 2021).

Accordingly, in 1996, the South African Constitution granted all South Africans the right to human dignity, equality, and freedom. In terms of these rights, the law stated that everyone is equal before the law and everyone has the right to equal protection and benefit of the law. Section 24 of the Constitution further

added that all citizens have a right to an 'environment that is not harmful to their health and well-being' and that development should be 'ecologically sustainable.' When these rights are read together, it becomes clear that environmental justice is part of a larger social justice paradigm, which sought to transform the lives of all people for the better (RSA, 1996; Chishaleshale, 2015).

On the national sphere, numerous policies and legislation were also passed in post-apartheid South Africa, including the Reconstruction and Development Program (RDP), the Development Facilitation Act (Act 76 of 1995), Habitat and Local Agenda 21 initiatives, the Green Paper on Development Planning (1999), the National Environmental Management Act (Act 107 of 1998), the Municipal Systems Act (2000), and the National Spatial Planning and Land Use Management Act (SPLUMA, Act 16 of 2013). All of these emphasise the provision of equitable and integrated planning in consultation with the public. However, according to all of these legislations, before any decisions can be implemented on the local level, a broad framework of stakeholders including the public and council need to be engaged and consensus has to be reached. This often results in the approval taking a long time and green spaces having to be balanced against other urban land-uses such as housing, infrastructure, economic and business development (Cilliers, Diemont, Stobbelaar and Timmermans, 2011).

Subsequently, studies have found that apartheid spatial geography has remained largely unchanged and green infrastructure inequality has actually worsened (Harrison, 2008). A study conducted by Venter et al. (2020) found that 49 out of the 52 district municipalities displayed environmental inequality, with households living in former white areas still being located within 700 m of a public park, and households in former non-white areas having to walk, on average, 2.7 km to access a park or open space (Venter et al., 2020). Furthermore, the quality of the parks in these suburbs differed vastly and many still displayed the characteristics depicted in Image 1 of this study.

The design, location, and amenities (quality) in the parks play an essential role in attracting urban park users. Landman and Makakavhule (2021) found that parks that are vibrant, well maintained, appropriately located, easily accessible, attractive and perceived to be safe are utilised more frequently. However, additional studies have found that parks that offered facilities which were multi-functional and were able to respond to the social, cultural, and physical needs of people from different cultures, ages, and genders were used more frequently as well (Ríos-Rodríguez et al., 2021), while the opposite was true for those that did not offer the same (Ruiz et al., 2019). This would have meant that many of the former white parks attracted higher utilisation, as opposed to the former non-white parks. However, although planners and urban designers of urban parks are knowledgeable about design and the importance of such spaces, they are not always certain of people's needs, especially where such needs keep shifting. The repercussion is that if parks are not dynamic, vibrant, and well-planned to fulfil a current need, they are underutilised. Consequently, policies encourage public participation to ensure that parks are planned for the needs of the community (Das and Honiball, 2021).

Then again, even though planning is conducted with utmost care, the facilities within parks need to be utilised with care to avoid conflict and vandalism. In order to ensure the adequate utilisation of facilities, many public parks are governed by rules that determine the utilisation. For instance, Park By-Laws of 2010 state that the park can be used recreationally but only with written permission from the municipality for: a) public entertainment; (b) distribution of advertisement; (c) public gathering; (d) trade; and (g) store material. Additionally, the municipalities have the right to withhold permission, if it is believed that the activity will give rise to (a) public rioting; (b) the disturbance of public peace; (c) the committing of an offence; (d) the committing of an indecent act; (e) risks that compromise safety and security to the public or visitors to the public park; or (f) the likelihood of damage or destruction to amenities, wildlife, or plant material in the park (RSA, 2010).

Furthermore, to ensure safe utilisation, the city has enforced safety and order regulations to ensure that all citizens enjoy equal benefit of facilities; as a result, regulations are in place to ensure that no person will damage or destroy any equipment, amenity, structure, or animal. Furthermore, the regulation clearly states that public parks should not be used for any other purpose and that individuals using the park should not behave in an improper way or cause a

disturbance to others (RSA, 2010). The By-Law goes on to state that if anyone is found opposing these laws, they could be fined.

However, even though parks are designed to improve the quality of green spaces, and even though regulations are in place to govern utilisation, Hayward and Weitzer (1984) found that over the past 20 years, open space utilisation has declined. This decrease is associated with the negative perceptions of such spaces and fear of the other, which has led to emotional disconnect and detachment. As a result, people have changed their recreational needs and habits, with those who can afford memberships utilising indoor sports centres and gyms rather than open public parks. Furthermore, individuals who can afford to have also opted to visit malls and coffee shops for safer social interactions. The concern is what do those who cannot afford private memberships do?

Manstead (2018) found that the lack of access to quality, vibrant open spaces deprives individuals of the socio-psychological, physical, and ecological benefits that parks can provide. Additionally, the lack of facilities in poorer areas in comparison to their wealthier counterparts psychologically affects low-income individuals' identities, which influences the way they think and feel, in turn affecting their behaviour. The consequence is lower utilisation, which generates a vicious cycle, with local government motivating the lack of investment due to the under-utilisation of services in these suburbs.

The next section explains the methodology used in this study to investigate the quality of three parks in three suburbs and their associated utilisation in Potchefstroom. It will provide insight into the distributional justice in Potchefstroom.

Methodology

Over the past decade, there have been several urban ecological studies in Potchefstroom which have focused on urban biodiversity, ecosystem services, green spaces, and green economy (Cilliers et al., 2011). However, these projects focused on parks within high- and middle-income areas, and they did not provide insight into the quality distribution of parks within the city, nor their utilisation. Consequently, this research sought to address the shortcoming by investigating the correlation between the quality of neighbourhood parks and their utilisation in Potchefstroom, South Africa. The finding informs the aspect of distributional justice in secondary cities and provides insights into the needs of the local community.

Research method

The design of this study is predictive and observational, as its purpose is to analyse and explain behaviour and utilisation in relation to the quality of parks (Ato, Juan and Benavente, 2013). The study identified three parks: one in a high-income area, one in a middle-income area, and one in a low-income area. The parks were chosen randomly, by driving through the city and identifying the busiest park that was freely accessible in a suburb. The park was then analysed by the researcher in terms of quality, and photographs were taken to document the observations. (See Figure 1 below).

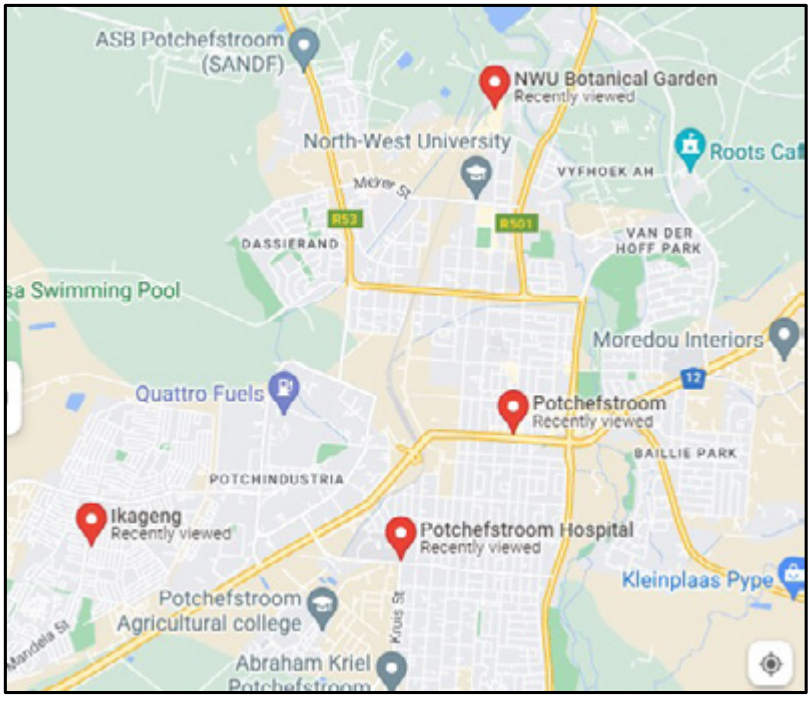

Figure 1: *Location of the three case studies in Tlokwe Local Municipality (Source: Own composition)*

The study areas comprised of: Area A—Botanical Garden in the built area (high-income); Area B—Hospital Park in Baillie Park (middle-income); and Area C—Ikageng Park in Ikageng (low-income).

Collection of qualitative data

The study interviewed 30 randomly selected and willing participants, all of whom were residents of Potchefstroom. There were 10 participants per park. Of these participants, 21 were male and 9 were female. This sample had an age range from 18 to 87 years old, with an average age of 22.6 years old. This age range was chosen since it did not require parental consent for participation. Before the interview took place, participants were introduced to the study. It was further explained that should they wish to participate, consent needed to be provided before their answers would be recorded anonymously.

Interviews were conducted between the 17th to 23rd of July 2021. Data was collected at the park during different times of the week (weekday vs. weekend) and at different time slots (morning/evening). The parks were not very busy and therefore the sample size is small. Upon completion, participants were thanked for their collaboration. Using Google Forms, the data was analysed to provide insight into how the quality of public spaces affects their utilisation.

Limitations

This study is not without its limitations. First, it should be noted that data collection was carried out at different times of the day. In order to get a holistic view, collecting data during the same time slot would have offered a different range of responses. Secondly, this study is transversal and provides descriptive knowledge of the relationship between utilisation and quality. A longitudinal analysis would complement the results, allowing for a better assessment on frequency utilisation and possible insight into its decline (Ríos-Rodríguez et al., 2021). The next section discusses key findings.

Findings

According to the Integrated Development Plan (IDP), there are 79 Parks in the Tlokwe Local Municipality (Potchefstroom). Of these, 44 are considered developed, 6 semi-developed, and 27 underdeveloped (JB Marks Local Municipality, 2018). The local municipality classifies developed parks as having green infrastructures which are regularly maintained, whilst underdeveloped parks are seen as not having adequate green infrastructure. The map below illustrates the distribution of green open areas around Potchefstroom.

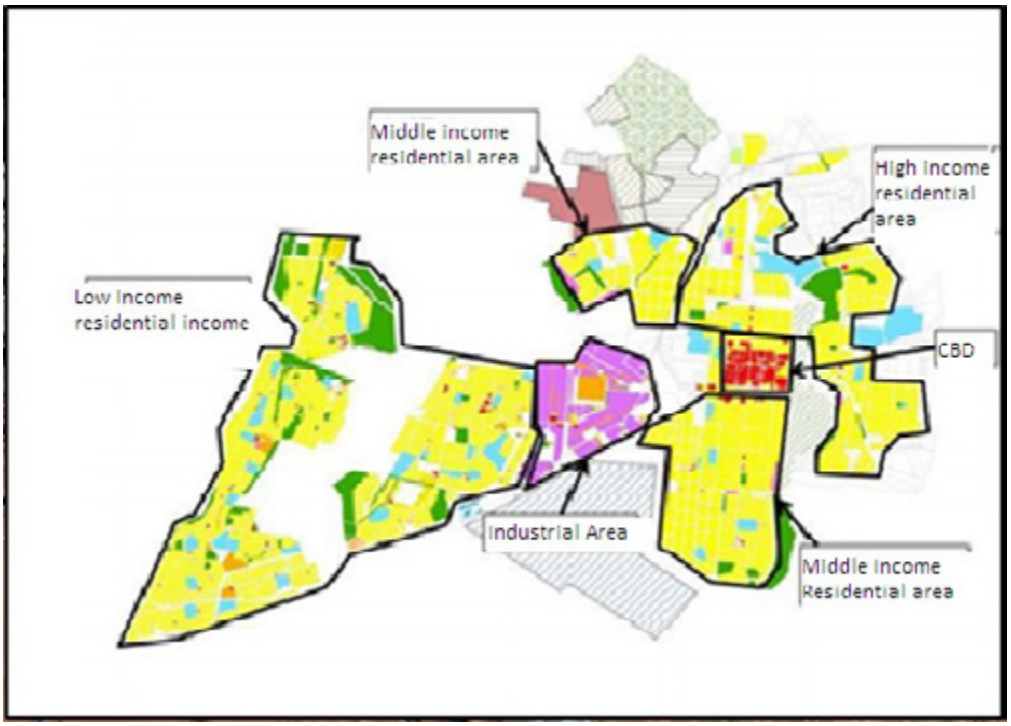

Figure 2: *Green spaces in Potchefstroom (Source: Author's Own)*

The green markings on the map illustrate the green spaces or parks. Analysis of the map reveals that green spaces across Potchefstroom are unequally distributed, with more yet smaller green spaces available in low-income residential areas and less but larger green spaces found in high-income residential areas. Additionally, the local IDP confirmed that most of the 'underdeveloped parks' are predominately located in low- and middle-income residential areas, while well-developed parks are located in high-income areas (JB Marks Local Municipality, 2018). Additionally, the IDP (2018) identifies two of the three randomly chosen parks of this study as 'developed parks' (i.e. Botanical Garden and Hospital Park) and one of the parks as an 'underdeveloped park' (i.e. Ikageng Park). The next section captures the key findings on the quality of these parks.

The quality of the parks

Not all impacts or benefits can be measured in monetary terms. Neither can all types of neglect and inequality be expressed in words. As a result, the researcher attempted to capture images of the three parks to provide insight into the quality of these parks.

According to Urban Land Institute (2021), high-quality parks have the following five key characteristics: 1. They are in excellent condition and are well-maintained; 2. They are accessible to all potential users; 3. They provide positive experiences for park users; 4. They are relevant to the communities they serve; and 5. They are flexible and adaptable to changing circumstances. In order to capture and evaluate the quality of parks in Potchefstroom, each park will be discussed under separate headings according to the above criteria, with findings supported by images.

The Botanical Garden

The Botanical Garden is located in the high-income area of Potchefstroom and covers an area of 3ha, with more than 1,500 plant species and a variety of animals and insects. The park is located across from the university and is frequented by students who live in the nearby residences. In terms of Urban Land Institute (2021) standards, the park is in excellent condition and is well-maintained (with lights, dustbins, restrooms, benches, and paved footpaths). It is easily accessible to all potential users and entrance is free. The variety of spaces in the park provides a positive experience for park users and the landscape design allows for interaction and privacy. The park is relevant to the local communities since it allows students to study the plants and insects that they learn about at the university (see images below).

Figure 3: *Pictures of the Potchefstroom Botanical Garden (Source: Own Compositions)*

However, participants revealed that they did not like the park, because the maintenance was not as good as it was in the past, and because of difficulties in gaining entry due to Covid-19 regulations. Nonetheless, they enjoyed coming to the park since it was easily accessible and free.

Hospital Park

According to the Potchefstroom IDP (2018), this park is considered to be developed and is located opposite the public hospital. Based on the Urban Land Institute (2021) criteria and the observations of the researcher, the park appears to be in fair condition. However,

many facilities and amenities appear in dilapidated condition, and the park lacks general maintenance (long grass, broken fence, broken toilets, uneven paving, and litter). Although the park is accessible and is situated in the CBD, the overall sense is that it is not vibrant, not safe, and is lacking in hygiene. This provides a negative perception and deters users. Furthermore, even though the park was initially built and planned as a multiple recreational area (playground, tennis court, and grass patches) there is no parking available, no benches, no street lights, and no dustbins on the property (see images below). This displays poor design.

Figure 4: *Pictures of Hospital Park (Author's Own)*

Participants who were interviewed stated that they enjoyed the park, because it offers a quiet, spacious area near their homes. However, residents in the area also reported that homeless people live in the parks' bathrooms and that crime is high during the day. The study also found that local recyclers use the parking lot to collect and sort recyclables outside the park, which makes the entrance dirty and deters utilisation. As a result, local residents claim that the park is more of a stress to the local community than a recreational area.

Ikageng Park

This park is considered to be an under-developed park by the IDP and is located in Ikageng, which is a former African township. The park is literally an open space, with no grass, trees, or infrastructure (i.e.

no restrooms, parking, fences, playground facilities, lights, dustbins, benches, or footpaths). As a result, there is no maintenance in the park and the people of the neighbourhood use the open land to dump their garbage and graze their animals (goats) (see figures below). At this park, the researcher found that there are no parking facilities and it could only be accessed by foot. Whilst the researcher was at the park there was not a lot of activity going on and it appears as if the park does not offer safety or any recreational benefits.

Figure 5: *Pictures of Ikageng Park (Source: Own Compositions)*

Participants from this park reported that they do not like that there is no grass, the litter smells, and there is a lack of facilities that they can use. They further added that the park has no lights and they cannot use it at night. On the other hand, participants claimed that they liked the open areas because these offer a common meeting place to play and watch local soccer.

In light of the above findings, one could conclude that the Botanical Garden, situated in the high-income area of Potchefstroom, offers the best quality green spaces, since it adheres to all five of the quality criteria (see table below). On the other hand, both Hospital Park and Ikageng Park are not considered to be high-quality parks since they adhere to zero of the five quality criteria (see table below).

Quality Criteria	Ikageng Park	Hospital Park	Botanical Garden
Residential area	Low-income	Middle-income	High-income
Well-Maintained	No	No	Yes
Accessible	No	No	Yes
Positive experience	No	No	Yes
Relevant to local community	No	No	Yes
Flexible and adaptable	No	No	No

Table 1: *The quality of parks in Potchefstroom (Author's own)*

Furthermore, the study found that the quality of parks fluctuates with the wealth of residents. Hospital Park, which is in the middle-income area, is of a poorer quality than the Botanical Garden, which is situated in a high-income area. However, parks located in the former Black townships or low-income areas are still found to be the least developed. The next section unpacks the findings from the semi-structured interviews to provide insight on how each of these parks are used.

Utilisation of the parks

Utilisation is defined as the manner in which the public use a particular space. The study found that the Botanical Garden, which is located adjacent to the university, had a lower utilisation rate than the Hospital Park, which is located opposite the hospital, and the Ikageng Park in the low-income area. The respondents from the Botanical Garden (10) claim that they visit the park once a month, while those interviewed at the Hospital Park (10) and Ikageng Park (10) claim to visit the parks daily.

The respondents from these parks also displayed a different profile. Respondents from the Botanical Garden comprised of 6 females and 4 males between the ages of 19 and 29 years. Upon observation, it appeared that females visit the park in groups or as couples. The park is used since it is closest to their residence and offers recreation. On the other hand, respondents from the Hospital Park have a different profile, with more males (7) than females (3), between the ages of 20 and 60 years. The younger male adults (5) claimed that they visit the park every day to 'meet-up' and were there with their group of friends playing and skating at the park, while the older males (3) were sorting out recycling material, and the older females (2) were walking in the park and relaxing in the sun. They both stated that they utilise the park 'whenever they want'. Participants from the Ikageng Park were all males and their ages ranged between 18 to 25 years of age. Participants said that they use the park between three and seven times a week to meet their friends and play soccer. The motivation for the frequent visits to the Parks (Hospital and Ikageng) was that they were easily accessible and that they offered space for recreation and exercise.

However, none of the parks were utilised at night, since the Botanical Garden had time restraints (8am to 4pm) and the remaining two parks did not have lights and were 'dangerous' at night. Respondents from Ikageng (7) and Hospital Park (6) state that they have small gardens or no gardens and were dependent on parks for recreational space, even though the parks they frequented did not have many facilities. The table below captures the main findings.

One of the main findings from the semi-structured interviews was the manner in which recreation was defined. Respondents who were white and young (18–29 years) from the Botanical Garden stated that they used the park to walk, run, and picnic. However, respondents who were mostly Black and middle-aged (20–60 years) from the Hospital Park used the park for recreation, but defined recreation as 'sitting in the sun', 'watching children skating', and 'socialising'. Some (3) stated that they use the park to sort out recycling material, since they have nowhere else to sort it. On a Sunday, if one was to drive past, one could also notice a group of people in white clothes who use part of the park for 'worshipping' purposes. On the other hand, the Park in Ikageng was used to play soccer, and the community uses it to socialise during these matches. The main finding for the researcher was that parks offer a 'sense of place', and the likes and dislikes are subjective.

The researcher further asked each of the respondents if they visited any of the alternate parks in Potchefstroom, to which they all stated that they don't ever use other parks since they are not as accessible, and some just simply never thought of visiting parks in other suburbs. The next section discusses the key findings to determine if there is equality of green spaces and if quality effects utilisation.

Discussion

In 1994, a 'one-city, one-tax base' principle was implemented, which meant that all citizens in the city should be treated equally. This also meant that

Criteria	**Botanical Garden**	**Hospital Park**	**Ikageng Park**
Income Group	High-income	CBD/Middle-income	Low-income
Frequency of usage	Once a month	Every day	Every day
Purpose of usage	Recreation	Recreation	Recreation
Like about park	Accessible and clean	Quiet, spacious and near home	Meeting place and soccer field
Dislike about Park	Lack of maintenance	No maintenance and insufficient infrastructure	No grass, litter everywhere, no facilities and no lights

Table 2: *Findings on the utilisation of parks in Potchefstroom (Author's own)*

all suburbs within the city should have equal access to amenities, services, and facilities—green spaces included. However, access in this case was not just about facilities being open for everyone to use, but it also meant that the quality of facilities within the city should also be the same throughout the settlement. Unfairness of distribution fosters conflict and undermines cooperation. Furthermore, the inequality of services would mean that some citizens have greater benefits and a better quality of life in comparison to the rest.

recreational facilities within the city, despite these facilities being free. High-income residents, meanwhile, have access to well-developed parks, but may not fully utilise them due to factors such as fear, lack of interest, or safety concerns. Residents from high-income suburbs also showed little interest in visiting alternative parks in the city. These disparities highlight issues of environmental inequality and distributional justice, which are still prevalent 25 years into democracy.

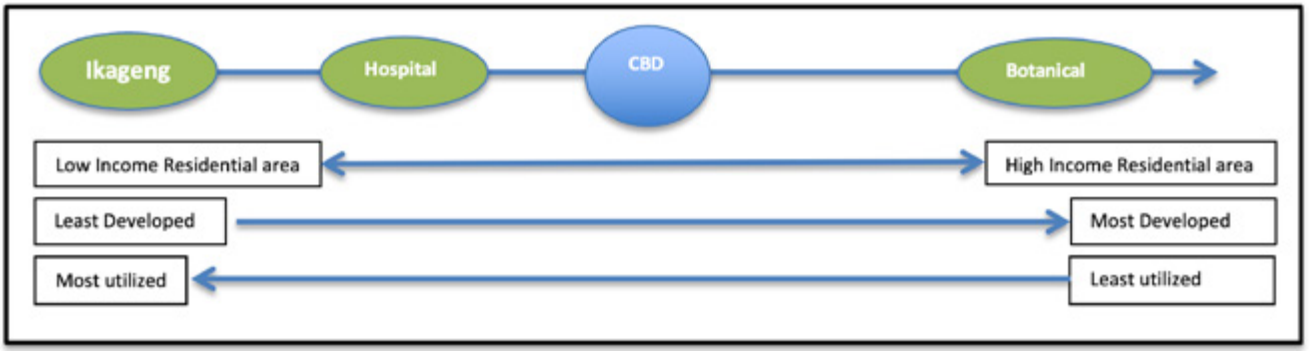

Figure 6: *The quality vs. utilisation of parks in Potchefstroom (Author's own)*

The study found that the patterns of green space provision from apartheid are still persistent and prevalent in Potchefstroom, with low-income areas such as Ikageng having the smallest and least developed parks, even though the utilisation of such parks is high. High-income areas, meanwhile, have the largest and best developed parks but are utilised the least (See Figure 6).

The research findings also indicate that there are still significant disparities in access to recreational facilities based on socio-economic factors, rather than political control. This creates two distinct realities for people living within a 10 km radius in the same city. Children in high-income areas have access to high-quality parks with diverse plant species, such as the Botanical Garden, while children in low-income areas have limited access to poorly maintained parks, dirt patches, and inadequate sports facilities. Additionally, many low-income residents face barriers such as transportation costs and self-imposed restrictions, which prevent them from accessing alternative

According to the study, it was further found that females utilised parks less frequently than males due to feeling less safe in those areas. They cited reasons such as lack of monitoring, low presence of people, illegal dumping, vandalism, uncleanliness, outdatedness, and criminal activities—all of which did not make the parks inviting. Consequently, females were hesitant to use the parks and bring their children to play there. On the other hand, despite the low and middle-income parks lacking facilities, services, and safety measures, males still utilised them for team sports. Therefore, the study suggests that park quality holds greater importance for females compared to males.

The lack of park quality is indeed a concern, as parks are meant to play a significant role in the social fabric, by promoting mental health and physical activity for all individuals (Sturm and Cohen, 2014). The negative perceptions and declining utilisation of these parks contribute to their deterioration and raise concerns within the larger community (Khumalo and Sibanda, 2019). This has led to frustration among community members who feel that the municipality is not adequately maintaining these spaces (Dai, 2011).

However, the municipality may be hesitant to invest in the parks due to their under-utilisation. As a result, the limited development and care of these green spaces has led to wasted potential and is depriving many individuals of the socio-psychological, physical, and ecological benefits that these areas could provide.

Manstead's (2018) theory, the 'logic of control', helps explain the thought process of participants in this case. Participants from higher to middle income households, who have more resources and a stronger belief in their ability to shape their own social outcomes, tend to express their dissatisfaction and seek alternatives such as gyms and indoor centres. On the other hand, individuals with lower incomes, who have fewer resources and perceive limited control over their circumstances, are more accepting. The system justification hypothesis further suggests that those at the bottom of the social system are less likely to question, challenge, or reject a provided service, opting instead to find alternative ways to utilise the resource to their advantage (Manstead, 2018). In light of this, the study also revealed that parks in low-income areas are used for socialising, playing soccer, grazing animals and, unfortunately, dumping rubbish.

The municipality is aware of this inequality and, in 2013, the Ikageng Park was supposed to be developed to provide local low-income residents with much-needed recreation facilities. The development plan included multi-functional courts, a children's play area, picnic and braai facilities, a large outdoor amphitheatre, and essential infrastructure such as lights, dustbins, grass patches, and paving (See Figure 7 below).

Figure 7: *Ikageng Community Park Concept Plan (Outlining Landscape Architecture, 2013)*

However, nine years later in 2021, the field observations illustrated the disparities between what was sold to the public and what was actually provided. The park design also shows a lack of public participation. This study found that the Ikageng community uses the open space to play soccer, but the design did not include a soccer field. Upon interviewing people within the municipality, no one could explain why the project was not seen through and what happened to the money. This also brings into question the level of corruption in the local municipality.

Physical activity is crucial for both children's development and adults' overall health (Du Toit et al., 2018). As physical activity often takes place outdoors, access to high-quality facilities becomes particularly important. To address the cycle of under-utilisation and under-development, it is essential to focus on creating vibrant and modern spaces that attract utilisation. Conducting further research to understand the community's preferred activities can help inform the provision of appropriate facilities.

One potential solution is to organise various activities such as exercise programs, paddle tennis, trading fairs, competitions, and concerts in parks. These events can help attract more people to utilise the parks and require minimal financial input. Additionally, ensuring that

parks are monitored by security personnel can create a sense of safety, especially for women and children, thereby encouraging their use of these spaces.

It is important to note that neglecting or allowing facilities to decay due to poor utilisation is not the solution. Instead, exploring alternative solutions that are relevant to the current needs and interests of the community should be considered. By implementing these measures, the city can experience benefits such as reduced obesity and stress levels, as well as enhanced social cohesion amongst its residents.

Conclusion

The study findings indicate that the apartheid city model continues to impact the appearance and functionality of cities in South Africa, including Potchefstroom. The paper highlights the unequal distribution of quality green spaces and green infrastructure, with higher-income areas having better facilities compared to poorer areas. Interestingly, even the developed parks in former white areas were not fully utilised due to concerns about maintenance, crime, vandalism, and illegal dumping. Conversely, the undeveloped parks were being used in unconventional ways such as for dumping, soccer, socialising, animal grazing, sorting recycling, housing the homeless, and worshiping—while notably lacking adequate facilities for relaxation. In summary, the study found that none of the green spaces in Potchefstroom are being fully utilised or providing the potential benefits they could offer.

To address this issue, it is recommended that the municipality invest in cleaning and monitoring parks while implementing contemporary measures to attract utilisation. Closing parks and deflecting investment from green spaces would deprive many individuals of the socio-psychological, ecological, and physical benefits that parks can provide. Instead of giving up on these valuable spaces, the concept of 'Kintsugi,' which means fixing with gold, is suggested. This entails adding more value to these spaces and witnessing their flourishing. Additionally, the paper suggests further research be conducted on the socio-psychological inequalities resulting from the lack of adequate facilities in poorer neighbourhoods. By addressing these issues, the municipality can work towards creating more equitable and beneficial green spaces for all residents.

Recommendations

Public awareness

There are various policies in place to support environmental equity; however, the local municipality hesitates to allocate funds to develop the under-developed and semi-developed parks. The argument here is that these areas are under-utilised and therefore funds can be used more efficiently elsewhere. However, if the benefits of green spaces are to be realised and the importance of quality spaces inculcated, then the significance of these spaces might be realised. In light of this, more public awareness and environmental knowledge is required to really bring in change in the development and utilisation of public green spaces.

Avoid blueprints

Parks throughout the world have similar plans, structures, and infrastructure. However, these are not always suited to the needs of local communities. As a result, it is important to conduct public participation meetings in order to understand the needs of a specific community. For instance, this study revealed that local communities in Potchefstroom need space to 'worship' on a Sunday and 'socialise in the sun.' Other needs identified were for people to have space to organise their recycling material and to skate. All these needs might not be accommodated within a traditional green open space, but they nonetheless are the needs of the local communities consulted. Therefore, planners should be innovative and willing to break from conventional blueprint development and instead create parks that are unique and suited to the needs of a particular community.

Access to justice

On paper at least, South Africa's constitutional provisions of equality, justice, and freedom rank among the most progressive in the world. However, at a more practical level, many people in South Africa do not have the financial means to actively pursue costly court proceedings to ensure that their rights are not

“As a consequence, public interest law firms and civil societies are required to look at cases such as Ikageng, and seek justice and equality for those who cannot achieve it themselves. If local government is not held accountable for empty promises, the vicious cycle of inequality will continue.”

infringed upon. The study has revealed the initial plan and the reality of Ikageng Park. However, the citizens of the community do not have the financial muscle or the funds to open a court case against the municipality to ensure justice and service provision. As a consequence, public interest law firms and civil societies are required to look at cases such as Ikageng, and seek justice and equality for those who cannot achieve it themselves. If local government is not held accountable for empty promises, the vicious cycle of inequality will continue.

Funding

This work is based on research supported by the National Institute for The Humanities and Social Sciences.

References

Astell-Burt, T. and Feng, X. (2019). ‘Does Sleep Grow on Trees? A Longitudinal Study to Investigate Potential Prevention of Insufficient Sleep with Different Types of Urban Green Space.’ *SSM—Population Health*. doi.org/10.1016/j.ssmph.2019.100497

Ato, M., Juan, J. and Benavente, A. (2013). ‘A Classification System for Research Designs in Psychology.’ *Anales de Psicología*, 29(3): 1038–1059. dx.doi.org/10.6018/analesps.29.3.178511

Cilliers, E.J., Diemont, E., Stobbelaar, D.J. and Timmermans. W. (2011). ‘Sustainable Green Urban Planning: The Workbench Spatial Quality Method.’ *Environment and Planning B: Planning and Design*, 38(4): 579–584. doi: 10.1108/17538331111153197

Chishaleshale, M., Shackleton, C. M., Gambiza, J. and Gumbo, D. (2015). ‘The Prevalence of Planning and Management Frameworks for Trees and Green Spaces in Urban Areas of South Africa.’ *Urban Forestry & Urban Greening*, 14(4): 817–825. doi.org/10. 1016/j.ufug.2015.09.012

Dai, D. (2011). ‘Racial/Ethnic and Socio-Economic Disparities in Urban Green Space Accessibility: Where to Intervene?’ *Landscape and Urban Planning*, 102(4): 234–244. doi.org/10.1016/j.landurbplan.2011.05.002

Das, D. and Honiball, J. (2021). ‘Evaluation of Accessibility Challenges of Public Parks in Residential Areas of South African Cities—A Case Study of Bloemfontein City.’ *Proceedings of the 35th Southern African Transport Conference* (SATC 2016). *ResearchGate* [online] Available at: www.researchgate.net/publication/336604374_EVALUATION_OF_ACCESSIBILITY_CHALLENGES_OF_PUBLIC_PARKS_IN_RESIDENTIAL_AREAS_OF_SOUTH_AFRICAN_CITIES_-A_CASE_STUDY_OF_BLOEMFONTEIN_CITY/

Du Toit, M.J., Cilliers, S.S., Dallimer, M., Goddard, M., Guenat, S. and Cornelius, S.F. (2018). ‘Urban Green Infrastructure and Ecosystem Services in Sub-Saharan Africa.’ *Landscape and Urban Planning*. Vol. 180: 249–261. doi.org/10.1016/j.landurbplan.2018.06.001

Gwedla, N. and Shackleton, C. M. (2017). ‘Population Size and Development History Determine Street Tree Distribution and Composition Within and Between Eastern Cape Towns, South Africa.’ *Urban Forestry & Urban Greening*, 25: 11–18. doi.org/10. 1016/j.ufug.2017.04.014

Horree, P. (2023). ‘Alexandra Township Johannesburg Plays Football Soccer.’ *Alamy* [online] Available at: www.alamy.com/alexandra-township-johannesburg-south-africa-play-football-soccer-image5808008.html

JB Marks Local Municipality. (2018). Final Integrated Development Plan. *JB Marks* [online] Available at: www.jbmarks.co.za/sites/default/files/2019 06%20documents/Finale%20%20IDP%20Doc.%202018-19%20FINAL.pdf

Kuruneri-Chitepo, C. and Shackleton, C.M. (2011). ‘The Distribution, Abundance and Composition of Street Trees in Selected Towns of the Eastern Cape, South Africa.’ *Urban Forestry & Urban Greening*, 10(3): 247–257. doi.org/10.1016/j.ufug.2011.06.001

Landman, K. and Makakavhule, K. (2021). ‘Decolonizing Public Space in South Africa: From Conceptualization to Actualization.’ *Journal of Urban Design*, 26(1):1–15. doi: 10.1080/13574809.2021.1880885

Lehohla, P. and Shabalala, N. (2014). ‘Inequality in South Africa.’ *Development*, 57(3): 497–511.

Louise, G. (1988). ‘Whites-Only Park, Stilfontein, South Africa.’ [online] Available at: digitalcollections.lib.uct.ac.za/islandora/object/islandora%3A5355

Low, S. (2013). ‘Public Space and Diversity: Distributive, Procedural and Interactional Justice for Parks.’ *Political Science*. doi: 10.4324/9781315613390.CH17

Manstead, R. (2018). ‘The Psychology of Social Class: How Socioeconomic Status Impacts Thought, Feelings, and Behaviour.’ *British Journal of Social Psychology*, 57(2): 267–291. doi.org/10.1111/bjso.12251

McConnachie, M and Shackleton, C. M. (2010). ‘Public Green Space Inequality in Small Towns in South Africa.’ *Habitat International*, 34(2): 244–248. doi.org/10.1016/j.habitatint.2009.09.009

Outline Landscape Architects. (2013). Ikageng Park. *Outline Landscape Architects* [online] Available at: outlinela.co.za/2013/01/28/ikageng-community-park/

Radebe. H. and Irurah, D. (2016). ‘The Use of Recreational Urban Parks in Johannesburg: A Phenomenological Study of Place Attachment in Thokoza Park in Moroka, Soweto.’ *WitPress* [online] Available at: www.witpress.com/Secure/elibrary/papers/SC16/SC16058FU1.pdf

Rice, J.L., Cohen, D.A., Long, J. and Jurjevich, J.R. (2020). ‘Contradictions of the Climate- Friendly City: New Perspectives on Eco- Gentrification and Housing Justice.’ *International Journal of Urban and Regional Research*, 44(1): 145–165.

Rojas-Rueda, D., Nieuwenhuijsen, M.J., Gascon, M., Perez-Leon, D. and Mudu, D. (2019). ‘Green Spaces and Mortality: A Systematic Review and Meta-Analysis of Cohort Studies.’ *The Lancet Planetary Health*, 3(11): 469–477. doi.org/10.1016/S2542-5196 (19)30215-3

Ríos-Rodríguez M.L, Rosales, C., Lorenzo, M., Muinos, G. and Hernández, B. (2021). ‘Influence of Perceived Environmental Quality on the Perceived Restorativeness of Public Spaces.’ *Front Psychol*. doi: 10.3389/fpsyg.2021.644763. PMID: 33935900; PMCID: PMC8085351.

Republic of South Africa. (2010). ‘Public Park By-Laws.’ *Open By-Laws* [online] Available at: openbylaws.org.za/akn/za-cpt/act/by-law/2010/public-parks/eng@2010-09-10

Ruiz, F., Suárez Falcón, J. C., Flórez, C. L., Odriozola-González, P., Tovar, D., López-González, S. and Baeza-Martín, R. (2019). 'Validity of the Satisfaction with Life Scale in Colombia and Factorial Equivalence with Spanish Data.' Revista Latino Americana de Psicología, 51(2). dx.doi.org/10.14349/rlp. 2019.v51. n2.1

Seekings, J. (2011). 'Race, Class and Inequality in the South African City.' *The New Blackwell Companion to the City*. 532–546.

Shackleton, C.M., Blair, A., De Lacy, P., Kaoma, H., Mugwagwa, N., Dalu, M.T. and Walton, W. (2018). 'How Important is Green Infrastructure in Small and Medium-Sized Towns? Lessons from South Africa.' *Landscape and Urban Planning*, 180: 273–281.

Hayward, D.G. and Weitzer, W.H. (1984). 'The Public's Image of Urban Parks: Past Amenity, Present Ambivalence, Uncertain Future.' *Urban Ecology*, 8: 243–268. doi.org/10.1007/978-1-4684-5601-1_9

The Herald. (2021). 'Die Hospitalpaark n' Seer Oog en Gevaar Vir publiek.' *Potchefstroom Herald* [online]. Available at: potchefstroomherald.co.za/75898/hospitaalpark-n-seer-oog-en-gevaar-vir-publiek/

Urban Land Institute. (2021). 'Five Characteristics of High-Quality Parks.' Washington, DC: *Urban Land Institute*. [online] Available at: knowledge.uli.org/-/media/files/research-reports/2021/uli-fivecharacteristics_highqualityparks_fin.pdf?rev=493c282bcf87438d8d31f62833961cb4&hash=FBB40CD4C9D98A798E-8041844C90E6E9

United Nations. (2023). 'The 17 Goals.' *United Nations* [online]. Available at: sdgs.un.org/goals

Venter, Z.S., Shackleton, C.M., Van Staden, F., Selomane, O. and Masterson, V.A. (2020). 'Green Apartheid: Urban Green Infrastructure Remains Unequally Distributed Across Income and Race Geographies in South Africa.' *Landscape and Urban Planning*, 203: 103–115.

Wolch, J.R., Byrne, J. and Newell, J.P. (2014). 'Urban Green Space, Public Health, and Environmental Justice: The Challenge of Making Cities "Just Green Enough".' *Landscape and Urban Planning*, 125: 234–244.

Zuniga-Teran, A.A., Staddon, C., de Vito, L., Gerlak, A.K., Ward, S., Schoeman, Y., Hart, A. and Booth, G. (2020). 'Challenges of Mainstreaming Green Infrastructure in Built Environment Professions.' *Journal of Environmental Planning and Management*, 63(4): 710–732.