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Exploring the use, behaviour and role of urbanites towards management and sustainability of Kumasi Rattray Park, Ghana

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ABSTRACT

The paper examines the attitudes and roles of urbanites towards the sustainability of urban parks; using Kumasi's Rattray Park as a case. Using semi-structured interviews and observations, data was obtained from 217 users of the Park as well as relevant institutions mandated to manage urban parks in the Metropolis - Town and Country Planning Department, management staff of the Park, Department of Parks and Gardens and Environmental Protection Agency. Findings indicate that an entry fee was charged as a self-financing mechanisms for running the facility; and was thus deemed inappropriate by city authorities to further directly involve urbanites in management efforts. The Park was frequently patronised by the youth for outdoor activities. Contrary to other studies, participants did not prefer to regularly recreate at Parks within their immediate vicinities. The youth largely exhibited positive attitudes towards the sustainability of the Park. Whiles some participants expressed commitment to pay additional charges and make other efforts (voluntarism on safe use of facilities and sensitisation), others deemed the fees charged as enough to 'pay' for their contribution towards the Park's sustainability. Factors such as poor condition of facilities, *undesirable behaviour* of other users, environmental quality and safety concerns limited widespread patronage of the Park which confirmed assumptions of the theory of planned behaviour. The study concludes that management approaches should incorporate roles and concerns of users and should reflect on delivering and creating stable urban landscape conditions that promote an inclusive and sustainable development.

1. Introduction

Urban systems have been changing, often reflected in the transition from lower to higher urban settlements. About two-thirds of all humanity is estimated to live in cities by 2050 (UN, 2016). The increasing trend in urbanisation indicates that more than half of this growth would occur in developing regions (Grayman, Loucks, & Saito, 2012; Herring, 2012), posing complex and systemic problems on the urban environment. This is critical for urban planning and sustainability, since urbanisation is a threat to natural habitats and species richness, evenness, and density of lawns or greeneries in urban areas (Bates et al., 2014; Wei & Ye, 2014).

Public health, environmental and aesthetic concerns have sparked interests towards the role that urban parks play in promoting environmental quality, particularly in the developed regions (Byrne et al., 2014). Parks are major contributors to the environmental

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quality of urban neighbourhoods and as such, immense commitment towards improving the distribution and access to parks in cities (Dajun, 2011; Guarnieri & Balmes, 2014). Park and recreation agencies who hold appropriate positions in these dialogues, have thus become key players in improving avenues to encourage physical activity, and improve environmental quality of urban neighbourhoods.

Interventions on urban policy, particularly in the developing regions, have however usually excluded issues on the environment, particularly that of parks. As a result, urban parks and greeneries in many countries have quickly degenerated (Singh, Pandey, & Chaudhry, 2010; Adjei-Mensah, 2014), despite the awakening sense of their need. A notable force is urbanisation (which has become rapid and unplanned) causing the increasing depletion of parks, as they are gussled by the built environment. Urbanisation should however, not be an excuse for the deteriorating state of parks in cities of developing countries, because cities in the developed countries, where there is a growing commitment towards the provision and management of such spaces, have experienced higher levels of urbanisation over the past 50 years (Fox, 2012).

As urban population increases, there is corresponding increase in the demand for land for physical developments. The resultant effect is reduced space for parks, which gradually affects environmental sustainability. Increasing urbanisation, particularly in Ghana, has exerted immense pressure on the urban landscape leading to the deterioration of most parks (Quagraine, 2011). For instance, parks in Kumasi (once referred to as the ‘Garden City’ of West Africa), have depleted over the years (Danquah, Abass, & Nikoi, 2011). Notable among them are the Manhyia Durbar Grounds, Ridge Park, and the Kumasi Children’s Park (Adjei-Mensah, 2014). To reverse the situation, city authorities in 2015, constructed a recreational and modern amusement park called the Rattray Park, for its residents and beyond.

Concerns about urban parks have largely targeted: (i) addressing pressing health issues, by shifting away from solely focusing on nutrition to understanding the built environment and its influence on promoting healthy lifestyles (Center for Disease Control and Prevention, 2011); (ii) meeting recreational needs (Kaczynski, Potwarka, & Saelens, 2008); (iii) improving access to parks (Kaczynski & Henderson, 2007); (iv) addressing disparities in park distribution (Dajun, 2011; Moore, Diez Roux, Evenson, McGinn, & Brines, 2008); and (v) use of urban parks by residents and keeping park facilities well-maintained and aesthetically appealing (Chona, Wolch, & Wilson, 2010). It is largely the sole responsibility of city authorities to ensure that parks are provided and maintained to meet the aforementioned provisions. However, considering the numerous challenges of city authorities and deteriorating nature of urban parks, particularly in developing regions, there is the need to have relook at current management models or practices.

Available literature on the state and causes of deteriorated urban parks in developing regions, particularly Ghana, reveals the roles and numerous challenges responsible city authorities encounter in managing them (Adjei-Mensah, 2014; Quagraine, 2011). Remarkably, little is known about the role and attitudes of urbanites in the management of urban parks. Although the use and management practices of urban parks are widely documented, it appears that identifying and incorporating the specific roles and attitudes of urbanites in management efforts of city authorities in sustaining urban parks, have received very little attention. Unlike other sectors (particularly, water and sanitation), where the involvement of beneficiaries has positively contributed towards sustenance (Braumah, Amponsah, & Asibey, 2016), the understanding of the behaviours of urbanites and potential roles in sustaining urban parks, remain largely unknown. This could however be significant in improving access to available parks, and in the long-run attain the urban green space-related target of the Sustainable Development Goal (SDG 11.7) - provide universal access to safe, inclusive and accessible, green and public spaces, in particular, for women and children, older persons and persons with disabilities (UN, 2016).

Chaudhry, Bagra, and Singh (2011) further maintain that developing and effectively managing parks in cities should rely on the involvement of residents and not only on investments. Premised on this, the sought to examine the roles and attitudes of urbanites towards the management and sustainability of urban parks in Ghana, using Kumasi Rattray Park as a case study. The study sought to achieve the following specific objectives:

- to explore the behavioural intention on the use of the park;
- to identify the factors which influence behaviour towards the access to and use of the park; and
- to examine the perceived roles of users towards management and sustainability of the urban parks.

2. Behavioural intention on use of parks: Theoretical Overview

Behavioural intention is recognised as an important predictor of human behaviour. Bamberg, Hunecke, and Baum (2007) state that it provides the immediate determinant of how an individual will perform specific social behaviours in the future. Behavioural theories have been widely used to inquire and predict behaviour among socio-psychological researchers. Two theories have thus been predominantly employed to understand and predict human social behaviours. These are: (i) theory of reasoned action (TRA); and (ii) theory of planned behaviour (TPB) (Rossi & Armstrong, 1999). The theories have been widely used to study several behaviour patterns, including: travel behaviour (Bamberg et al., 2007); leisure activities (Ajzen et al., 2005); behaviour of tourists (Hsu & Lam, 2004); water conservation, littering at public parks, hunting and fishing (Scherer, Welcomer, Parada, Cordan, & Pradenas, 2011) and blood donation attitudes (Giles, Mcclenahan, Cairns, & Mallet, 2004), among others. Irrespective of their significance, there are however very few studies in literature on behavioural theories which discusses use of parks. Relevant to this study is the theory of planned behaviour (TPB) to achieve the objectives of the study.

Prior to the emergence of TPB, TRA was widely used to provide a theoretical basis for investigating human decision-making processes as well as describing social actions of individuals (Scherer et al., 2011). The central theme of the TRA was argued to be the concept of *behavioural intention*, conceptualised as the motivation, which leads to engagement in a specific behaviour. It assumes that

the stronger an individual's intention is, the more likely he or she is to perform certain behaviour (Ajzen, 1991; Bamberg et al., 2007). Behavioural intention is hence a function of *attitude towards behaviour* and *subjective norm*. With this, Fishbein & Ajzen (1975) cited in Wang (2015, 24) state that “*information on an individual's attitude towards a specific behaviour is obtained from combining the measurement of the individual's beliefs with the salient attributes of certain behaviour and his/her subjective evaluation of these attributes as consequences resulting from the performance of the behaviour*”.

On the above, Hsu and Lam (2004) argue that the strength of an individual's attitude towards a specific behaviour will subsequently affect his/her intentions to perform that behaviour or not. Individuals are thus more likely to undertake a behaviour if they have stronger positive attitudes toward it. The *subjective norm*, explained to mean individual's perception of how appropriate it is to perform a behaviour based on general social pressures from salient referents (Rossi & Armstrong, 1999); is argued to add a social component to the theory, which contributes to behaviour intention. On this Scherer et al. (2011) identifies two key variables of the *subjective norm*: (i) an individual's perceived social pressure to perform or not to perform a particular behaviour from people who are important to the individual; and (ii) the degree to which the individual is influenced to behave by these salient referents. Hsu and Lam (2004) on this assert that people are hence, more likely to perform a particular behaviour if *subjective norms* toward it become more favourable.

Although TRA has been successful in understanding a variety of behaviours across several disciplines, Rossi and Armstrong (1999) deem it inadequate in predicting individual behaviour, which is not under volitional (with deliberate intention) control. TPB thus emerged as an expansion of the TRA, to address this weakness and include additional part of perceived behavioural control to address behaviours which are not entirely under individuals' volitional control. TPB thus shares similar assumptions about the relationship between intention to act and behaviour, as well as the constituents of the behavioural intention (attitude and subjective norm). TPB adds a third component; *perceived behavioural control (PBC)*, to improve sufficiency by addressing an individual's perception about the potential constraints on performing certain behaviour (Ajzen & Madden, 1986).

TPB's sufficiency was first validated by its application in understanding and predicting a variety of behaviours (Hartwick, Sheppard, & Warshaw, 1988; Hausenblas, Carron, & Mack, 1997). Although studies on the use of TPB in park studies are lacking, researchers in socio-psychological field adopted it to successfully predict human behaviours. For instance, it was used to examine the intention of people to participate in six leisure activities (Ajzen et al., 2005). Gretebeck et al. (2007) also employed it to understand the perceived behavioural control to determine intentions to participate in walking activities among people with intermittent claudication. Lastly, TPB was used to successfully predict human behavioural intention to take part in walking activities (Galea & Bray, 2006).

TPB from the above is user-friendly (Masser, White, Hyde, Terry, & Robinson, 2009) which can be expanded to cover other variables premised on specific circumstances of a research interest. It may further provide adequate description of different individual behaviours of different groups. As an open-ended model, it could change according to a change in target behaviour. Ajzen (1991) hence confirmed that the model should be tailored according to the needs of target behaviour to address a specific interest.

In the context of this study, park use behaviour and role in ensuring sustainability are not completely under people's volitional control, but subject to a range of factors such as available facilities, safety, distance, sociodemographic characteristics and condition of facilities. Underpinned by the TPB, the researchers argue that application of the theory would be useful in identifying patterns of participant behaviour on park use. It would further aid to improve the overall design of similar spaces in future or confirm that a newly designed or redesigned space supports the behaviours for which it was developed. However, due to challenges of tracking individual's (every participant) movement in space, direct observations, and interviews with participants were employed to achieve the objectives of the study. TPB was therefore deemed appropriate to provide a more appropriate framework to understand the behaviour, use and roles towards sustainability of the Kumasi Rattray Park in Ghana.

3. Materials and methods

3.1. Study setting

Kumasi, Ghana's second largest and fastest growing city, is urbanising at a rate of 5.4% per annum with a population of 2,035,064 which is about 8% of the national population (Ghana Statistical Service, 2014). The key drivers for attracting migrants are its strategic location, booming employment sector and resource endowment (Kumasi Metropolitan Assembly (KMA), 2014) (See Fig. 1). Kumasi was given the name ‘Garden City’ due to the application of the garden city model by the colonial British government. The development plan for Kumasi in 1945 allocated a large part of the land area to green space, which included urban gardens, parks, trees, forest, wetlands and green belt (Adjei-Mensah, 2014). With a land area of 214.3 km², approximately 8.7% are green spaces. Kumasi has over the years, lost a substantial part of its lands for parks to the built environment, largely due to urban sprawl and attendant developments as well as poor urban planning (Adjei-Mensah, 2014). The urban fabric and natural environment have greatly been altered, where almost 34.6% of the parks have deteriorated over the years (Quagraine, 2011).

The Kumasi Rattray Park, built in 2015 and located on 6°40'50.51"N and 1°37'28.98"W, is multipurpose built for all age groups. It is about 3 km away from the center of the Metropolis, covering an area of 42,000 m² (see Fig. 2). It was christened ‘Rattray’ to honour the late Captain Robert Sutherland Rattray, a Scottish who was the Assistant Colonial Secretary in the Gold Coast and clerk to the Legislative Assembly of Accra in 1919. Notable features at the Park include an artificial lake, a golf cart, Wi-Fi connection, children's playground, a robust gym, restaurant and cafeteria and a 6 m² dancing fountain, which is the first of its kind in the country. An amount of GH¢10 (US\$2.26¹) and GH¢5 (US\$1.13) is charged for each adult and kid respectively, as an entry fee during weekends

¹ 1 US\$ to GH¢ 4.3860 as at 12th July 2017.

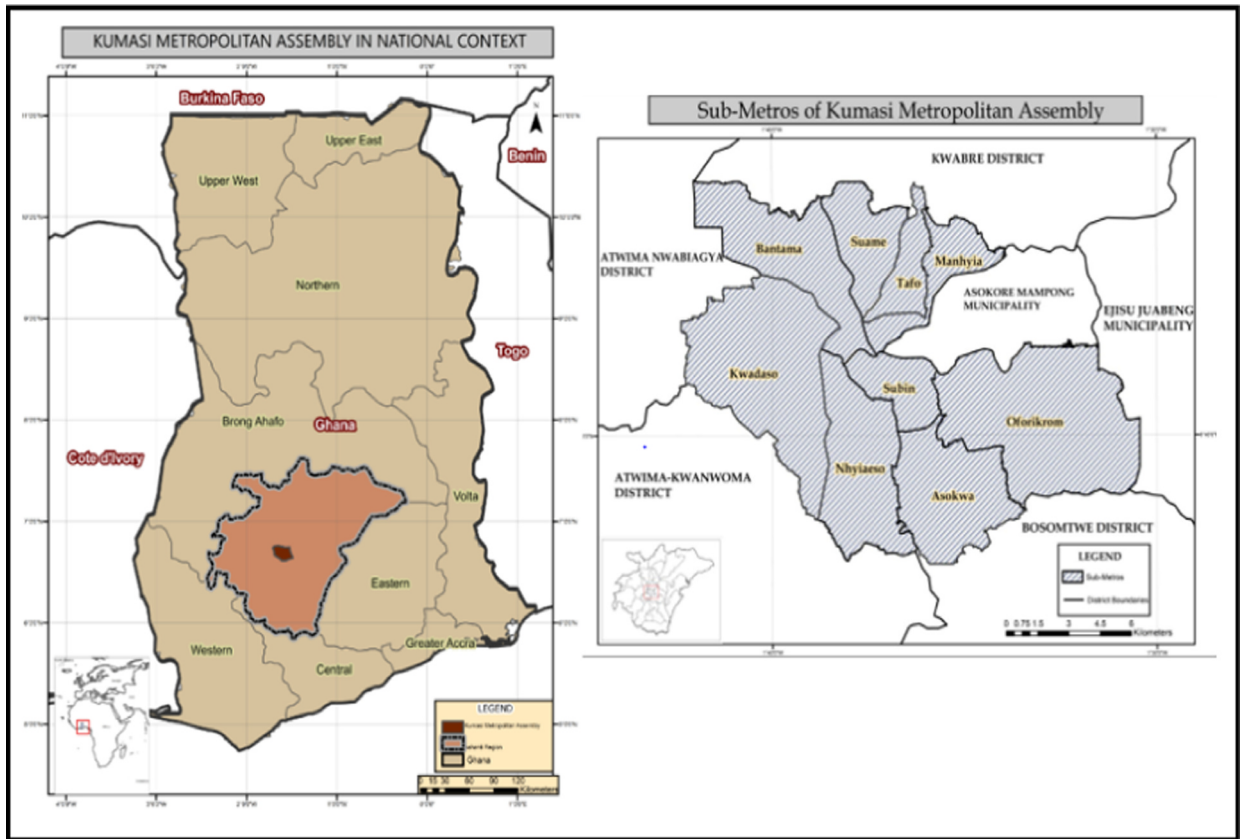


Fig. 1. Kumasi in national and regional context. Source: Kumasi Metropolitan Assembly, (KMA) 2014.

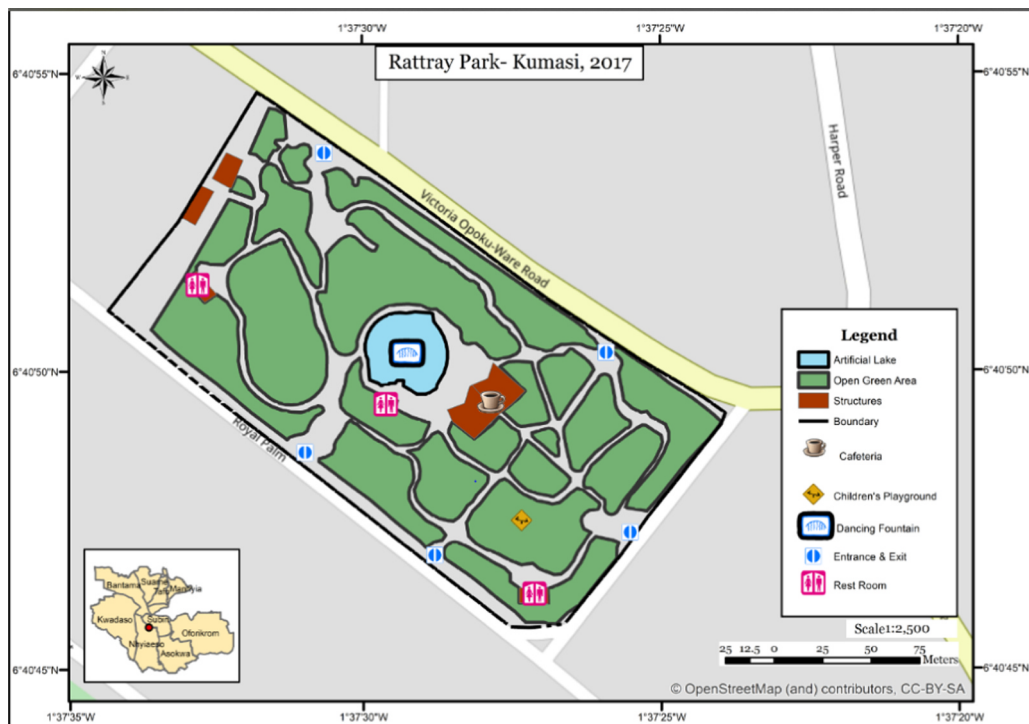


Fig. 2. Physical map of the Kumasi Rattray Park. Source: Author's Construct, December 2017.

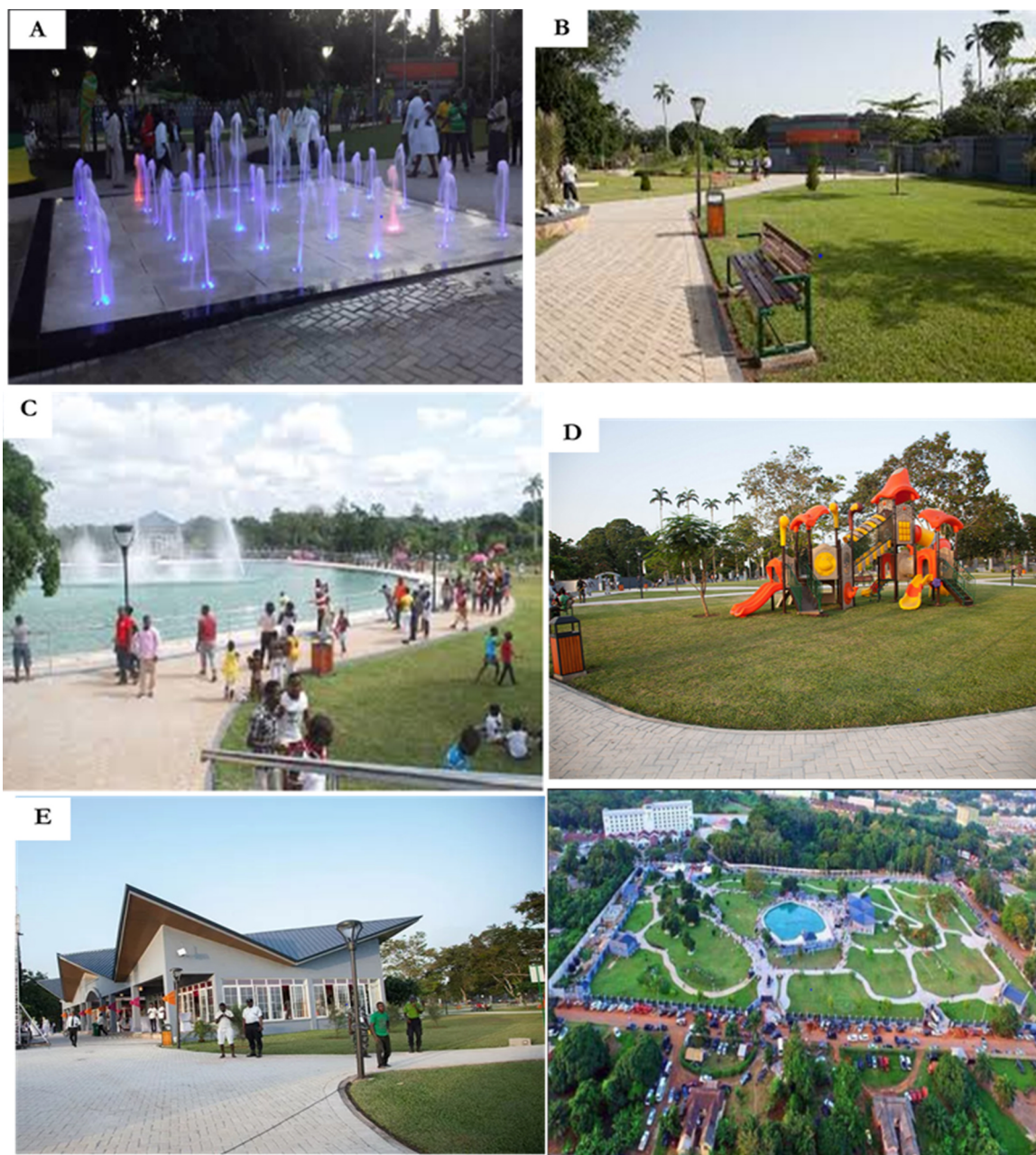


Fig. 3. Major features at the Rattray Park. Key: A - Dancing fountain; B - Open Green Areas; C - Artificial Lake; D - Children playground; E - Cafeteria and Restaurant).

and special occasions. Fees of GH¢5 (US\$1.13 and GH¢2 (US\$0.46) are however charged for each adult and kid, respectively, on normal weekdays, aside public holidays. This fee provides visitors access to all open facilities of the Park and serves as a ‘self-financing mechanism’ to regularly undertake operation and maintenance activities (Fig. 3).

3.2. Study design

The cross-sectional design was employed to discuss and explain responses on the behaviour and roles of users towards the use, management and sustainability of the Kumasi Rattray Park. The design adopted both qualitative and quantitative techniques to gather and analyse relevant data. The underlying principles of “how” and “why” type of questions (Yin, 2014) were taken into account and were oriented toward having an empirical enquiry that investigates a contemporary phenomenon within its real-life context (Babbie, 2010). The design enabled the researchers to examine the use of the Park in its natural setting and the meanings

people attach to the phenomenon and how it is being managed within their social worlds. The techniques adopted were inductive, subjective and process-oriented method, which were adopted to understand, interpret, and describe the use and management of the Park.

Due to the absence of a sampling frame from which an appropriate sample size could be determined, a multi-stage sampling technique was used to select a minimum of 217 participants across the Park, when it was realised that saturation had been achieved. The five major features at the park (artificial lake, a golf cart, children's playground, restaurant and cafeteria and a 6 m² dancing fountain) were selected based on which respondents were interviewed to ensure representativeness. At each site, the respondents were purposively (based on age group; children, youth and adult) and conveniently (based on availability and willingness to participate in the survey) sampled and interviewed.

3.3. Data collection

Relevant data was obtained through direct observations and interviews. Due to the challenge of tracking each user's movement and behaviour at the park, the park was rapidly surveyed and all behaviours noted. Observational checklists were used to understand the behaviour of individuals across the Park. The checklists were further employed to guide observations and to triangulate responses from the interviews. The data collection - interviews and observations - were undertaken over an eight-hour period (10 a.m. to 6 p.m.) daily for seven days (Sunday 11th to Saturday 17th June, 2017). The researchers observed behavioural patterns under the following themes: the category of users (children, youth and adults) using specific facilities at the Park, the most utilised facility and purpose of use; and the nature of engagement with other people at the time of the survey. Subsequent snapshots were taken to help identify consistent patterns.

Using semi-structured interviews, four relevant institutions in the Kumasi Metropolis were purposively selected and their officials engaged in discussions on the management of urban parks. The purposive sampling method was useful in gaining a greater depth of data from a small sample size, and allowed for the selection of institutions with satisfactory knowledge, experience and interest in the research topic. These institutions included the Town and Country Planning Department (TCP&D) of the Kumasi Metropolitan Assembly (KMA), the management staff of the Rattray Park, the Department of Parks and Gardens, and Environmental Protection Agency (EPA). The interviews gathered data on the causes of deterioration of urban parks in the Metropolis over the years, and the roles urbanites could play in ensuring sustainability of urban parks. Data was also gathered on management challenges of urban parks, roles of urbanites in management and sustainability of Parks and appropriate management models or practices to sustain urban parks.

The survey approach was further employed to gather primary data from participants/users of the park. A semi-structured interviewer-administered questionnaire was used to obtain information from participants through face-to-face interviews. It covered issues on socio-demographic characteristics of users, the frequency of visits and reasons for accessing the Park, as well as the roles of respondents in managing and sustaining the park.

Prior to the interviews, informed consent was first sought from participants. Participants were then asked if they had already taken part in the survey within the period. Participants who responded 'yes' were excluded from the survey to avoid duplication in responses and results. The rationale and need for the study, procedures involved, rights of respondents, confidentiality, voluntary participation and the right to dissociate at any time of the study without prejudice; were further explained to participants. The interviews were conducted in either Twi or English, since all respondents were fluent in one of the languages.

3.4. Data analysis

All survey instruments were reviewed for completion and accuracy and compiled in a database, prior to data analysis. Users' roles towards management and sustainability of the Park was first assessed using a dichotomous scale (Yes or No); where participants were asked if they perceived any role they could play in complementing efforts of city authorities in managing the Park. Given a 'Yes' response, participants were to indicate the specific roles they would or could play in sustaining the facility. Based on response(s) given, relevant relationships between socio-economic variables of participants and indicated roles were further assessed using a series of linear regression (for continuous variables) and chi-square (for categorical variables) tests, where relevant. Further, a two-point likert scale was used to assess the state of the Park (1-good, 0-bad). Participants indicated their level of satisfaction and gave explanations for an assigned scale. Consequently, users' perceived attitudes or roles in sustaining the Park were measured. The relationships between the state of the Park and users' perceived attitudes/roles in ensuring sustainability of the Park, were then assessed using the chi-square (χ^2) test statistics.

To assess the differences in the mean socio-economic characteristics of users' and attitudes/roles of participants in managing Parks, a series of chi-square tests and linear regressions were run after investigating that skewness and kurtosis satisfied the assumption of normality with values less than 12.01 and 19.01, respectively (Schmider, Ziegler, Danay, Beyer, & Bühner, 2010). The explanatory variables tested were age, gender/sex, employment status, and frequency of visits to the Park. Factors that were significant and not strongly collinear to other explanatory variable were selected for further analysis. To have a better understanding of the extent of the significant differences, series of linear regressions were always undertaken with response of participants on roles towards sustaining the Park (given the prime interest in sustaining the facility). The stepwise multiple regression was finally used to assess the contribution of other socio-demographic factors influencing the overall roles towards the effective and sustainable management and utilisation of the facility. All analyses were performed using SPSS version 23.0. In all cases, a p-value < 0.05 was considered to be statistically significant.

The content analysis, basically analysing the responses for key themes, was employed to analyse the qualitative data. This method of analysis aided in categorizing the data to make valid inferences. In achieving that, the qualitative data obtained were first transformed into Excel-based qualitative datasets and cleaned, where redundant datasets were removed. The researchers afterwards transformed the qualitative datasets into Excel-based spreadsheet of a matrix of quantitative variables for possible quantitative analysis and presentation. The authors then examined and selected the basic aggregation and cross tabulation technique to analyse and present the collated data. The findings were organized in charts and tables for better appreciation, which formed the basis of the study's conclusions and recommendations.

4. Results

4.1. Background characteristics of respondents

The study revealed that approximately 63% of the participants were males. Hence, females did not frequently visit the park. This was due to their sociocultural setting where they are mostly noted for domestic activities in most neighbourhoods across the country (Amu, 2008) and in most areas in developing countries. Khairrussalleh and Hussain (2017) similarly reported that previous studies in Malaysia showed that women less frequently visited parks, and were less engaged in leisure and recreational activities than men due to their family commitments and other constraints. Veal (2006) in Sydney also reported that women's park visit rate was 6% lower than men using a one-week measure. Similarly, Burrows, O'Mahony, and Geraghty (2018) with their study in Dublin, Ireland reported that females were 43% less likely than males to visit a park on a weekly basis. This shows a substantial difference between males and females on the visit to and use of urban parks.

The park was largely patronised by the youth (73%) within the ages 15 and 35 years, for their outdoor activities (See Table 1). Within the youthful age group, most participants were between the ages 15 and 25 years (69%). This finding confirms similar findings in the US, Europe and Asia where parks were mostly accessed by the youth for outdoor, physical and social interaction activities in several residential neighbourhoods (Roberts & Rao, 2014a, 2014b; Stacey, 2009 in the US; Byrne & Wolch, 2009; Wolch, Byrne, & Newell, 2014 in Europe and Boya, 2012; Sreetheran, 2017; Alfonzo, Guo, Lin, & Day, 2014 in Asia). Approximately 19% and 8% were adults (above 40 years) and children (below 14 years), respectively. Children who accessed the Park did so with their guardians. Discussions with some guardians revealed that the park provided their wards an avenue to explore and play. These

Table 1
Basic characteristics of respondents. Source: Field Survey, June 2017.

Variable	Frequency	Percentage
Sex		
Male	137	63
Female	80	37
Total	217	100
Age		
Below 14	17	8
15–25	150	69
26–35	7	3
36–40	2	1
Above 40	41	19
Total	217	100
Employment Status		
Employed (Service)	161	26
Unemployed	56	74
Total	217	100
Frequency of Visit		
Weekly	13	6
Monthly	124	57
Quarterly	80	37
Total	217	100
Education Level		
JHS	35	16
SHS	132	61
Tertiary	50	23
Total	217	100
Barriers to visiting the Park		
Extra charges	50	23
Safety Concerns	165	76
Poor condition of facilities	200	92
Undesirable behaviour of other users	87	40
Environmental Quality	189	87

findings show that certain populations are less likely to visit parks, which varies by demographic (e.g. age and gender) as well as socioeconomic and geographical considerations; which confirms and are further explained in other similar studies (Bedimo-Rung, Mowen, & Cohen, 2005; Roberts & Rao, 2014a, 2014b).

Furthermore, all participants had formal education, where approximately, 23%, 61% and 16% had tertiary, secondary and basic education (Junior High School), respectively. The results also showed that all adults were employed mainly by the service and commerce sector; which is noted to be a major feature of cities in Ghana and across the globe. The study also showed that entry fees (for the youth and children) were mostly paid by guardians; and most participants (57%) accessed the Park monthly. Respondents within the ages 15 and 30 years were found to averagely access the Park weekly, whilst those below 15 years (children) and above 40 years accessed the Park monthly and quarterly, respectively.

Because urban parks are spatially separated from their users and are typically in fixed locations, accessibility becomes an important and critical indicator in addressing distributional equity amongst groups (Bisht, Mishra, & Fuloria, 2010). Defined as “the ease with which people can reach desired services and facilities” (Gregory, Johnston, Pratt, Watts, & Whatmore, 2009), accessibility provided important information on whether population segments were being advantaged or disadvantaged, and which groups enjoyed public park benefits and why. The study showed that respondents beyond a threshold of 2.2 km were more likely to visit the facility regularly; specifically, on weekly and monthly basis. Participants within or below the 2.2 km distance however accessed the park irregularly for reasons other than distance (fees charged, organised/scheduled entertainment programmes and festive seasons). A participant on this finding indicated that: “... When the park was first opened, I made efforts to be here almost every week because I am very close to the Park (just 300 m away), and could easily walk here. Although I can still easily come here, I think I have gotten used to the place as there are no new things here if not, some special events...” This finding is however at variance with other studies where urbanites (mostly youth and adults) in developed countries prefer to recreate in parks close to homes and in social groups (Grow et al., 2008; Mowen, Orsega-Smith, Payne, Ainsworth, & Godbey, 2007). Similarly, Jasper et al. (2017) in a study across eight countries in Europe and US reported that more parks within 1 km from participants’ homes were associated with greater leisure-time physical activity. They thus concluded that perceived proximity to a park was positively associated with multiple leisure-time physical activity outcomes.

4.2. Use of park among respondents

The park is a recreational and amusement park to promote healthy lifestyle, leisure, and entertainment activities. As such, several facilities have been provided to meet the needs of park users. The most accessed facilities were the open green spaces (indicated by all participants), artificial lake (confirmed by 96% of participants) and the dancing fountain (93%) (see Table 2), mostly by individuals within the ages 11 and 34 years. Whereas the open green spaces were mainly used for outdoor games, ‘health exercises’ and outdoor parties, the dancing fountain was purposely for ‘sightseeing’ on the flow of the water, and venue for social interactions. Studies show that parks (and recreational facilities) are associated with increased physical and recreational activity levels, particularly among the youth populations (Center for Disease Control and Prevention, 2011; Kaczynski & Henderson, 2007). Studies in the US (Stacey, 2009; Kaczynski et al., 2008; Roberts, Chavez, Lara, & Sheffield, 2009), Europe (Byrne & Sipe, 2010; Byrne & Wolch, 2009; Wolch et al., 2014) and Asia (Boya, 2012; Alfonso et al., 2014) for instance similarly showed that parks (which had playgrounds, green areas/open spaces, sports facilities and trails) were major sources of recreation and improvement of physical activity, social inclusion, leisure and entertainment, particularly among the youth.

As posited by the TPB, the reason behind an individual’s behaviour is key to understanding present as well as predict future attitudes on accessibility to and use of parks. In line with this, the study examined the reasons that had either a positive influence or otherwise, on a respondent’s visit and use of specific facilities at the Park. The major reasons for accessing the features were that they were free to access and were major sources of excitement and socialising with other users. The least patronised feature was the restaurant/cafeteria, largely because of ‘exorbitant prices’ of items sold (about 20% higher than items on the normal market). With respect to questions to ascertain the reason for accessing the facility despite complaints about the fees charged, respondents argued that the park had ‘state-of-the-art’ facilities, which were fully functional, compared to other deplorable parks in the Metropolis. Interview with a respondent revealed that users would access such parks so long as they had the necessary facilities and were in ‘good shape’.

..... “We are fortunate to have this facility. I am one person who always wants to make good use of my weekend by visiting public recreational places. I used to go the Kumasi Children’s Park some years back. The place has now been turned into a religious ground, refuse dump and place of convenience (toilet facility) for others” Respondent No. 2

Table 2
Use of facilities. Source: Field Survey, June 2017.

Features	Proportion of User (%)	Reason and Nature of Engagement with other users
Restaurants and cafeteria	41	Sale of foods and drinks
Dancing Fountain	93	Taking of photographs and observing the fountain
Children’s playground	38	Use of the bouncy castle and bus ride
Open Green Areas	100	Discussions, organising public events
Artificial Lake	96	Taking of photographs

Unlike a study in Malaysia where urbanites accessed parks to “get fresh air” and “reduce stress and relax” (Maruthaveeran, 2017; Sadasivam, Zainul Mukrim, Alpana, & Chris, 2014), respondents expressing concerns about the entry fees charged stated that they could “obtain fresh air and relax anywhere, even at their various homes”, and thus no need to pay such amounts to visit the park just to relax. Furthermore, although the entry fees charged were less during weekdays, respondents argued that they had other important things to do on these days and so could only access the Park during the weekends and public holidays.

... “I had to pay GH¢10 just to enter and then buy my own drink and every other thing I want to take. This is not fair ... Why would you charge GH¢5 during weekdays when you know we have our jobs to attend to. I only make time to take my children out mostly during weekends and holidays” Respondent No. 3.

In addition to the above, other factors found to deter users from visiting the park were: poor condition of facilities (specifically, broken-down and non-functional facilities) and; *undesirable behaviour* of other users (specifically, improper dressing behaviours, unsafe smoking and alcohol drinking attitudes, as well as intimidation and vandalism; environmental quality issues (littering) and concerns about general safety in the use of facilities. Studies in other jurisdictions suggest that people’s decision to use parks are not only tied to the types of facilities available but the condition of the park and its facilities. Bedimo et al. (2005) and Cohen et al. (2006) for instance observed in their studies that park users were more likely to visit a consistently well-maintained park in which the facilities are safe to use and provide better aesthetics. Other studies show that inadequate playground equipment led to serious injuries and death (Weintraub & Cassady, 2002). Unsafe play equipment and undesirable behaviour of other users are hence likely to influence decisions on accessing parks (Stacey, 2009).

Most respondents (84%) revealed to visit the park in a group of family or friends rather than alone. This reinforces Walker’s (2004) recommendation on the significance of obtaining relevant and reliable information to help make informed resource choices based on what users mostly want from parks and decide how best to deliver on those needs. It was found that respondents within ages 15 and 35 years were more likely to be deterred from accessing the Park than adults (above 40 years), when the facilities are in poor condition and there are environmental issues. On the other hand, adults (above 40 years) are more like to avoid using the facility when charges are increased and other users exhibit undesirable behaviours. This generally support the TPB’s assumption that individuals are more likely to undertake a behaviour if they have stronger positive attitudes toward it (Hsu & Lam, 2004).

Two main features within the Park were revealed to foster exploratory play among users: the children’s playground and dancing fountain area. The children’s playground mainly had facilities such as bouncy castle, seesaw or teeterboard, slide, swingset and a playhouse; designed to foster outdoor play among children of all ages. Children expressed excitement in using these facilities since they had the opportunity to play with other children around the facilities. The facilities at the playground were however observed to be inadequate as a minimum of seven children were observed to wait in turns to make use of the respective facilities. The dancing fountain and artificial lake were observed to foster play among the youth. The implication of this finding is that whereas children were more likely to utilise the children playground, the youth (between 15 and 35 years) were more likely to access the artificial lake. These findings give some level of understanding of the category and number of users of specific features at the Park. Authorities would therefore have to ensure that these facilities are always in good shape to attract ‘customers’.

4.3. Institutional perspective on factors causing depletion of the urban recreational areas

Results from the institutional survey revealed that the major factors resulting in the depletion of urban parks were weak development control mechanisms, inadequate resources and inappropriate institutional arrangements which confirms findings of previous studies (Adjei-Mensah, 2014; Quagraine, 2011). However, the most critical factors were the non-adherence and enforcement of plans due to logistic challenges and pressure from prospective developers, the late preparation of management plans by city authorities and apathy and inadequate knowledge on the part of users towards public spaces.

Dealing with intense demand for space by urbanites has become a major challenge for city authorities in ensuring effective land use planning and management. This is further explained by earlier studies (Owusu-Ansah & Braimah, 2013; Siebie & Feng, 2013) that it appears city authorities have no control over developments in certain areas of the city, particularly urban parks. Consequently, the challenge of poor management and depletion of urban parks in developing countries can be strongly linked to the behavioural patterns of urbanites. This was espoused by a respondent:

..... “It is at times interesting to find that the rate of deterioration of some facilities at parks is faster than others. For all you know, users might have specific facilities of interest they utilise” City Official No. 1

The above response suggests that individuals who visit parks have specific interests in accessing them and these interests must be met to guarantee continuous utilisation. Failure to do this is likely to result in users not placing premium on parks in the city. Discussions with city officials further revealed that apathy on the part users – where they manhandled or showed no concern about reporting broken-down facilities – could have also contributed to the deterioration of recreational facilities in the city. The development and effective management of urban parks, therefore, relies largely on the attitude of institutions and involvement of city residents. Going forward, city officials argue that although they had the sole responsibility of managing such areas, urbanites also have significant roles they could play.

Management plans are relevant to ensuring the sustainability of urban parks. Effective preparation and implementation of plans can maximise investments and benefits of individuals and community groups. As such, Kacyira (2012) suggests that city authorities and facility managers should be proactive to pursue opportunities that are immediate, concrete, achievable and sustainable. An assessment of the management situation revealed that parks had deteriorated primarily because of the non-adherence to management

plans and the reluctance of authorities to enforce schemes. The reasons given by respondents for the non-adherence and enforcement of schemes included logistical and financial constraints. Similar reasons were given for the inability of city authorities to prepare management plans. The absence of management plans was a common feature in the Metropolis as most of the prominent recreational areas in the city did not have any.

Another observation from the field discussions was that in the few instances where management plans had been prepared, they were developed some years after the creation of the parks. The reason given was primarily because “*the facilities were new, with low anticipation of deterioration in the near future*”. Although this has adverse ramifications on urban parks and urbanites in the Metropolis, authorities appear to look unconcerned as there are no attempts to develop a comprehensive management plan for parks and public spaces in the Metropolis.

4.4. Perceived roles of users towards management and sustainability of the Park

Management and sustenance of urban parks have been very problematic in most developing regions over the years; and specifically to this study, the Kumasi Metropolis. Unlike the water and sanitation sector, where direct community or user involvement has been very key in managing and sustaining such facilities (Braimah et al., 2016), the situation differs in cities regarding urban parks. Cities that are privileged to have access to these cannot always boast of a thorough knowledge about events preceding the provision of facilities as well as ensuring their sustainability. The implication is that the process of creating parks requires the active involvement of the users to ensure sustainability.

Several factors are noted to have resulted in the deplorable state of parks in Kumasi. Notable among them is the attitude of users to ensuring their sustainability. The development and effective management of parks in cities should therefore largely rely on the attitude of and involvement of city residents (Chaudhry et al., 2011; Lamichhane & Thapa, 2012). Respondents were hence asked to indicate the roles they perceive could play in sustaining the facility.

Interviews with relevant institutions and participants (64%) revealed that city authorities had failed to engage users in the direct management of urban parks. The major cause of this was revealed to be the *heterogeneity of cities*, where “*individuals are most interested in attending to their personal issues*”. City authorities, therefore, deemed it inappropriate to directly involve urbanites in managing parks, although admitted urbanites could play significant roles in ensuring the sustenance of parks. To city authorities, the payment of entry fees was a way of involving users in the sustenance of the Park. This is captured by a respondent as follows:

..... “*There are various forms of participation. We cannot hire residents to undertake clean-up exercises or other activities at the Park as happens in other sectors. We have to respect their privacy and not bother them. That is why we are mandated to manage the Park. The best we could do was to charge entry fees and possibly other charges for using some specific facilities at the Park...*” City Official No. 2

Some respondents raised concerns about playing their respective roles in sustaining the facility. Approximately 66% of the respondents expressed willingness to pay an additional fee to help maintain the facility. Even though they would want to pay more, they expect managers of the Park to ensure that other users handle facilities with care and caution. Below is how one of such users put it:

.... “*Most of us (users) think that once we have paid for the facility, we should not handle it well. This has been the attitude of most users, which has resulted in the deplorable state of most urban facilities in the Metropolis. The maintenance of the facility should be the sole responsibility of city authorities. We should play our respective roles...*” Respondent No. 4

Users regarded the park as the ‘pride’ of the Metropolis and so the need to do everything possible to sustain it. The study further revealed that the respondents (34%) who were unwilling to make additional payment expressed dissatisfaction with the ‘high’ entry fee charged for accessing the Park. To them, the payments made are the only contribution they could make as they regard the amount charged as *enough* to operate and maintain the Park.

Officials of the key institutions partially blamed the breakdown/non-functioning of most urban parks on weak commitment, apathy, and improper handling or user practices of users. However, results of the user survey revealed otherwise as users indicated the inability of authorities to involve them in management practices as a key reason for the breakdown of most urban parks. This finding implies an over-concentration of responsibility on city authorities with limited or non-involvement of users in the management processes of urban parks. It is therefore unsurprising to note that respondents regard the maintenance of the Park as not the sole responsibility of city authorities since their attitudes are also key towards sustaining the facility.

Further analysis revealed that respondents, in addition to showing commitment towards paying additional charges, identified public education (awareness creation and using the facilities with care and caution) and reporting broken-down facilities, as other important roles they could also play. Among the various age groups, employment status of respondents, and frequency of visit to the Park, there were significant differences in terms of the responses to questions on users’ perceived roles and attitudes towards ensuring the sustenance of the facility. The results showed that younger respondents (below 35 years) were more likely to have a positive attitude towards supporting sustainable use and management of the facility since they would have need of it in the long-run ($\chi^2 = 26.7, p < 0.000, R = 0.81$) (See Table 3). This was further confirmed by the results of the multiple regression analysis which showed that users’ attitude to ensuring sustenance of the Park was largely influenced by age (see Table 3).

Other variables such as gender, economic status, and frequency of visit were considered in the model to ascertain users’ ability to contribute to the utilisation and sustaining the facility in the Metropolis (see Table 3). The multi-collinearity analysis generally revealed a strong correlation between all explanatory variables and the perceived role of users in sustaining the Park. Findings of the survey revealed that participants who accessed the facility monthly, were more likely to act positively towards ensuring the effective

Table 3

Linear regression analysis of the relationship between explanatory factors and users' attitudes towards sustaining the facility (n = 217). Source: Field Survey, June 2017.

Variables	B	SE	p	R
Age				
Youth (below 35 years)	1.310	0.112	0.000	0.81
Adult (above 35 years)	1.040	0.135	0.010	0.38
Employment Status				
Employed (Service)	0.017	0.144	0.010	0.29
Unemployed	0.039	0.002	.0001	0.41
Frequency of Visit				
Weekly	0.065	0.068	0.010	0.10
Monthly	1.396	0.539	0.001	0.52
Quarterly	0.184	0.150	0.010	0.17
Willingness to pay extra				
Willing	1.047	0.869	0.000	0.491
Not willing	0.061	0.632	0.010	0.244

B = unstandardized coefficient, R = regression coefficient, SE = standard error, p = significance

use and sustainability of the park. However, those who visited weekly were less likely to have positive attitude towards sustaining the facility. Further probing showed that users who accessed the park weekly complained of paying higher amounts and so should be enough to maintain the facility. Aside making such payments, they would not be part of any other efforts (awareness creation, acting as volunteers, and safe handling of the facilities) to maintain the facility as they deemed this the sole responsibility of authorities (see Table 3). Lastly, the study revealed that users who were currently unemployed (mostly youth; 15 and 25 years) were more likely to have positive attitudes (mainly voluntarism) towards ensuring the effective management (utilisation) and sustainability of the Park, including paying more for accessing the facility.

On the above findings, Roberts et al. (2017) argue that although state and city governments and park agencies play a major vital role in leveraging resources and building support for urban parks, Walker (2004) and Takyi and Seidel (2017) point out that the role of residents should not be overlooked. Takyi & Seidel (2017) reported that residents participated particularly in the development of parks by contributing financially, donating land for park development and offering relief labour. Community associations also made use of undeveloped parklands for urban gardens, which reduced the level of safety issues posed by these undeveloped lands. The findings again support Hsu and Lam's (2004) assertion on TPB that people are more likely to perform a particular behaviour if subjective norms toward it become more favourable.

Although users were more likely to have positive attitudes towards ensuring the management and sustainability of the Park, the most common practice of city authorities of solely managing urban parks in the Metropolis, amidst resource constraints and other challenges, has adversely affected efforts in most cities across the country. The foregoing therefore suggests a change in approach by authorities towards maintaining urban parks by focusing on: (1) the behavioural pattern of users in urban parks; (2) the roles/attitudes of users in promoting the sustainability of urban open recreational facilities; and (3) ultimately exploring options to involve them in the process. These would go a long way to contribute towards addressing the challenges effectively managing urban parks in the Metropolis.

5. Recommendations and conclusion

The effective management and sustainability of urban parks are significant towards improving access to open spaces and contributing to the achievement of the SDG 11.7. The once 'Garden City' has had most of its parks deteriorated, largely due to the over-reliance on government officials to maintain facilities. Recognising the complex nature and the call for an all-inclusive approach towards the attainment of the SDGs, as well as the important roles of individuals towards the management and sustainability of public facilities, this study, underpinned by the theory of planned behaviour, examined the behavioural pattern on the use, roles and attitudes of urbanites towards the management and sustainability of urban parks in Ghana, using Kumasi Rattray Park as a case study. The study has revealed that factors such as retroactive action towards developing plans in managing parks and apathy on the part of users are major causes of the deterioration of parks in the Metropolis.

Similar to other studies across the globe, this study showed that the most accessed facilities were the open green spaces, an artificial lake and the dancing fountain mainly because they fostered exploratory play and socialising. The study also showed higher patronage of the park by the youth, similar to findings in other areas (Wolch et al., 2014; Stacey, 2009). Children were the least to access the Park and did so with their guardians. A greater proportion of respondents accessed the facility monthly. The study showed significant differences in the age categories and frequency of visit to the Park, where respondents within the youthful ages were more likely to access the facility weekly, whilst those below 15 years (children) and above 40 years were more likely to access the facility monthly and quarterly. The study further showed that the frequency of visit to the Park was influenced by distance where urbanites were likely to access the facility within a 2.2 km threshold distance, contrary to other studies where urbanites in developed countries prefer to recreate in parks close to home and in social groups.

This study has further showed the perceived difference between urbanites' attitudes towards the sustainability of the Park and limited commitment of city authorities to support and involve them in the process. Respondents (66%) were willing to pay additional charges as contributions towards the maintenance of the facility and help sensitise other users on the handling of facilities at the Park. There appears to be positive attitudes on the part of the youth to ensuring the maintenance and sustainability of the Park than adults. Despite low commitment of adults to support maintenance practices, respondents expressed opinions that city authorities could consider their involvement relevant to maintaining the facility, since there have been no attempts to consider them in the entire process. Opportunities such as the creation of a volunteer group to educate and create awareness on the safe handling of facilities at the park were showed to be key in ensuring the sustainability of the facilities. Respondents, however, indicated that factors such as poor condition of facilities, the undesirable behaviour of other users, environmental quality issues and concerns about safety; would deter them from utilising the Park.

Premised on the above findings, city authorities need reliable information about community needs and the effects of actions intended to meet those needs, to sustain neighbourhood parks (Walker, 2004). Efforts by city authorities to examine the behavioural patterns and attitudes of users, engaging and supporting interested urbanites in the management of urban parks could go a long way to create renewed and maximise benefits of the investments made. The absence of such conscious efforts and commitments could result in the deterioration of the park as has been the situation with other similar parks. The study concludes that efficient management and sustainability of urban parks will occur when conscious attempts are made to understand and appreciate the socio-cultural and economic conditions of beneficiaries (urbanites); thus, the call for all-inclusive efforts towards attaining the SDGs. In addition to the above, the study calls for taking proactive measures towards developing and adhering to management plans. Lastly, any sustainable urban planning and development cannot be achieved without coordination among the various institutions and stakeholders. The study concludes that examining the behaviour, needs and integrating the roles of urbanites in the planning and management of urban parks will help meet the park needs of city residents whilst at the same time ensuring cost effectiveness.

Conflict of interest

None.

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