AN ANALYSIS OF URBAN OPEN SPACES ON SOCIAL WELFARE AND TAX REVENUES IN RWANDA: EVIDENCE FROM RWANDAN CITIES

A Thesis submitted in partial fulfilment of the Requirements for the Degree of Master of Business Administration (Project Management Option)

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APPROVAL SHEET

This thesis entitled **An Analysis of Urban open Spaces on Social Welfare and Tax Revenues In Rwanda: Evidence From Rwandan Cities** written and submitted by **GATANA Asaph** in partial fulfillment of the requirements for the degree of **Master of Business Administration, Project Management** is hereby accepted and approved.

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The thesis is accepted in partial fulfillment of the requirements for the degree of Master of Business Administration.

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Member of the Jury   Member of the Jury

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DECLARATION

I, GATANA Asaph, a student of university of Rwanda, college of business and economics, hereby, declare that the work presented in this thesis entitled 'AN ANALYSIS OF URBAN OPEN SPACES ON SOCIAL WELFARE AND TAX REVENUES IN RWANDA: EVIDENCE FROM RWANADAN CITIES' is original, and to the best of my knowledge it has never been submitted for the award of a degree in any university.

Signed ………………………………

Date ……………./…../……………….

GATANA Asaph

CERTIFICATION

This is to certify that the thesis entitled "AN ANALYSIS OF URBAN OPEN SPACES ON SOCIAL WELFARE AND TAX REVENUES IN RWANDA: EVIDENCE FROM RWANADAN CITIES" as a result of research carried out by Mr. GATANA Asaph, under my supervisor.

Signed ………………………………

Date ……………/…../……………….

Supervisor: Dr. Clement Bula Basuayi, PhD

DEDICATION

I dedicate this study to:

My beloved late parents; MUGARURA Patrick and MUKAMUNANA Beatrice.

My lovely fiancée; KANYANA Jane.

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Throughout the writing of this thesis I have received a massive support and assistance. Without the help of God, several persons and institutions this work would not have been possible.

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LIST OF ACRONYMS, SIGNS, SYMBOLS AND ABBREVIATIONS

ANOVA	Analysis of Variation
CBO	Congressional Budget Office
D	Margin error,
DEFF	Design Effect
DW	Durbin-Watson
GDP	Gross Domestic product
MVRPC	Miami Valley Regional Planning Commission
NGO	Non-government Organizations
n	Sample size
N	Total population
PS	Public Spaces
1-p	Probability of non-success,
P	Probability of success
QoL	Quality of Life
SD	Standard Deviation
SDG	Sustainable Development Goals
SPSS	Statistical Package for the Social Science
UGS	Urban Green Spaces
UK	United Kingdom
UN	United Nations
UOS	Urban open spaces
VIF	Variance Inflation Factor
Z	Z-score
μ	Mean
σ	Stand deviation

=	Equals
*	Multiplication
-	Minus
/	Division
+	Addition
$\leq$	Less than or equal to
>	Greater than
<	Less than
$\geq$	Greater than or Equal to

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ABSTRACT

The debate on urban open spaces is likely to reach it's culminate point in the high incomes countries, moreover in the middle and low income countries like Rwanda, the debate is still on going. In view of this study had objective to assess, examine and explore the effect of Urban Open Spaces on Social Welfare and Tax Revenues in Rwanda. To overcome, the study used a mixed methods research design. A random sample of 257 of Rwandan inhabitants was used but one was dropped out because his interview was incomplete and the analysis indicated that 139 (54.3 %) were the male and 117 (45.7 %) were the female.

Findings on variations of citizen perceptions on urban open spaces could be explained by two variables such as tax revenues and Social welfare; however, the contribution of tax revenue was estimated to 16.4% while both tax revenues and social welfare contribute to the variations of the perceptions at 18.8%.

This study suggests that a policy should be enforced for the development of master plan and better planning of urban open spaces of Rwandan cities with regard to the development of urban open spaces in the capital and other cities of Rwanda.

Keywords: Urban open spaces; Green spaces; Social welfare; Tax revenues; Kigali city; Rwanda

CHAPTER ONE: INTRODUCTION

1.1. Introduction

The debate on urban open spaces is likely to reach it's culminate point in the high incomes countries, moreover in the middle and low incomes countries like Rwanda, the debate is still on going. However, the literature concerned with the actual expansion of urban open spaces in the high incomes countries indicates that, the open spaces were subject of revision several times and this was consequence of the new policy that considered the political, social and physical health contribution of the open spaces on the urban residents towards political, social and physical health environment (Stanley et al., 2012); However, the literature review is scarce on the contribution of open spaces on economic growth such as gross domestic product (GDP), job creation, tax revenues and investments among others. The study intends to fill the gap by exploring and examining the contribution of open spaces on the economic growth.

Definitions: Francis (2012) says that "public space in general is defined as the meeting or gathering places that exist outside the home and workplace that are generally accessible by members of the public, and which foster resident interaction and opportunities for contact and proximity" (Francis et al., 2012). Furthermore, he added that "This definition implies a higher level of community interaction and places a focus on public participation rather than public proprietorship or stewardship".

1.2. Background and importance of the study

Chang and Li (2014) shows that "Urban Open spaces are valued by scholars as engines of political, social, and physical health of urban inhabitants and communities"(Chang and Li, 2014). However, Javad (2015) says "the literature remains scarce on the role of Public open spaces on investments, jobs creation, and tax revenues. There have been scholars who also said that physical Activities such as recreation walking and playing sports are among the importance of open spaces"(Javad *et al.*, 2015). Brown (2015) shows that "The public open spaces can bring people of different groups; sex and age together for the purpose of generating the healthy Psychological, social and political development of urbanities and the ease of access of urban open spaces have had positive human health outcomes. Urban green spaces have the probable to deliver thermally comfortable environments and help to reduce exposure to heat stress" (Brown *et al.*, 2015).

Jaffe (2013) says that "UN-Habitat (2012/2013) reported that since 1978, it has been specifically setting emphasis on urban spaces, with aim to promote the growth of socially and ecological sustainable settlements" (Jaffe *et al.*, 2013).

Sisley (1978) shows that "In October 2016, Habitat conference, proposed the new urban agenda that consisted of to work for a political guideline for urban growth over two decades and this agenda included: ecological sustainability that should be made sure inter alia by protecting, conserving, reestablishing and encouraging ecosystems and biodiversity, safe, inclusive accessible and green public spaces in the form of multifunctional areas"(Sisley, 1978)

Daniel (2016) shows that "UN-Habitat cogitate Open spaces as an important element of prosperous cities and the places that create a sense of Community, Culture, Social capital, and community revitalization. Opens Spaces are livable communities and ease the enjoyment of the high-density neighborhoods typically found in cities. Public spaces performance a key role in achieving safe, inclusive, resilient, and sustainable cities and have been recognized as a specific objective under SDG 11"(Daniel, 2016).

Stanley (2012) says that "The origin of Public open spaces does not leave behind the names of the most well-known cities in the world such as Cairo's Bayn al-Qasrayn, for instance, initiated as a notable plaza in the 11th century but shrank to street width due to political manipulation and the reliable encroachment of domestic buildings and shops, Greek in 15th Century, and other of European cities including London in 16th and 17th Century"(Stanley *et al.*, 2012).

Wood (2003) shows that "The people of Rome were the leading civilization to classify the profits of rural features inside a city; from the Campus Martius that was converted into plush parkland by Augustusn, connection lakes and space for recreation & leisure; to the urban villas within a park made by wealthy Romans; getting its zenith in Nero's 'Domus Aurea', which comprised nature on an altogether grander scale and exactly got the countryside to Rome. Nero's splendid grounds combined the refined location and wild simultaneously, covering a multitude of wild and home animals, vineyards and tilled lands, offset by the rural seclusion of woods and open ground"(Wood, 2003),.

Furthermore he says that "The attractiveness of environment in the Roman Empire was seen as twofold as a mark of development and as an agent of health & well-being. They invented the expression 'rus in urbe' to describe it." 'Rus in Urbe' states that the country in the city has been used in Britain ever since to mention to country topographies shaped in towns or cities. A thousand newspaper articles today practice it as shorthand to label a wanted fresh green feature that is projected or that needs safeguard in a city. It has converted the 'go to' expression of the green space cognoscenti.

Smith (1999) shows that "In Britain, the advantage of countryside space in towns was recognized as early as the 17th century. In 1618, Command on Constructions was recognized to supervise the growth of

Lincoln's Inn Fields, one of the leading planned green spaces in the country. Beforehand that the only green spaces had been royal hunting parks, such as Hyde Park and Richmond Park"(Smith, 1999).

In America, It has been reported that urban open spaces had started in 1850s (Skundrick, Smith and Rachor, 2013). This was mainly influenced by the concern for the quality of public environment of cities, different sectors both Public and governments have devoted their resources to improving urban open spaces. However, ever since different researchers had increasingly tried to provide information that is useful to creating successful urban open spaces. Public spaces researchers have tried to provide information on environmental improvement by providing conceptual, theory and practical information on the use and meaning of urban open spaces as Parks, Playgrounds, Streets and plaza and other open spaces.

Clark (2003) shows that "In Africa, the major challenge that was found behind the worsening of urban green spaces in Africa was rapid urbanization. Cairo (Egypt) and Lagos (Nigeria) which is among the most crowded cities in the world can be found in this region. The 2010 State of African Cities Report by UN Habitat specified that over one billion people are living in Africa and out of this figure, near to 50 per cent are living in urban areas". Furthermore he says that "The statistics indicated by the report on the intensity of urbanization and its adverse effects in Africa was frightening. For instance, in West Africa where nations such as Nigeria, Ghana, Togo, Cote D'lvoire and Liberia are located, the total urban inhabitants in 2010 was 137.2 million compared to a mere 6.6 million in 1950. It is predictable that by 2050 the total urban inhabitants in West Africa would reach 427.7 million.

The urban inhabitants in East Africa (Kenya, Ethiopia, Tanzania etc.) enlarged from 6 million in 1960 to about 77 million in 2010. The condition in northern Africa and southern Africa was not different. Southern Africa (Republic of South Africa, Zimbabwe, Zambia etc.) remains the greatest urbanized area in Africa with near to 60 per cent of the inhabitants living in urban areas. Similarly, more than half of the whole population in northern Africa (Egypt, Tunisia, Libya, Morocco etc.) also lives in urban areas". The fast urbanization in Africa was found to have brought about by excessive demolition of urban natural environment such as green spaces. This was manifested in the sprung up of many informal settlements (slums) and urban sprawl taking place on lands reserved for green spaces such as urban forest, parks, gardens and outdoor sport areas to engross the high city population. Sub-Saharan Africa has the highest slum population in the world with about 200 million slum dwellers. The high rate of urbanization in Kenya with its corresponding increase in urban sprawl and slums on the destruction of urban green spaces cannot be over emphasized. Kenya is noted for good wildlife and natural vegetation in Africa. The people of Nairobi which is the capital of Kenya has increased tremendously to the tune of over 3 million people as against 343,500 in 1962. This soaring population has resulted in high rate of informal settlements and urban

sprawl causing intense destruction to many urban green spaces in Nairobi. It has been observed that slums or informal settlements in Nairobi cover nine (9) administrative divisions or areas and in each of these nine administrative divisions the amount of green vegetation lost is immense (Clark, 2003).

Lands (2003) shows that "In Rwanda, national environmental policy was established in 2003 listing measures such as the necessity for eco-friendly impact analyses for development projects, as well as the preservation and management of ecosystems. In 2004, the Rwanda Environment Management Authority was established to supervise the incorporation of environmental goals with national development. Retreating deforestation is also an essential factor in decreasing poverty. The 2004 National Forest Policy announced procedures such as sustainable management of forest resources, and national reforestation and tree planting. Every year, in Kigali and other districts countrywide, Rwandese plant millions of trees for the period of the National Forest Planting Day and Season. Since 2004 to 2010, the resources for reforestation and afforestation projects enlarged by almost US$1 million (S$1.33 million). A number of forests were also reestablished and well-looked-after as national parks"(Lands, 2003).

Centre and Urban (2014) shows that "Rwanda has step up a policy on green environment and master's plans few studies have conducted that assessing the contribution of open spaces on political, social welfare and physical health of residents and communities and open spaces contribution on the economic growth such as jobs creation, GDP, tax revenues and investments. This study aim is to fill the gap"(Centre and Urban, 2014).

However, none of these researchers have specified the benefits of urban open spaces on Social welfare and tax revenues which this study has explored and investigated.

1.3. Statement of Problem

Synergy (2015) shows that "the 17 Sustainable Development Goals (SDGs) approved in UN 2015 are set to put into consideration all aspects of sustainable development the ecological, economic, and social dimension more than has before been the case. For instance, one of the fundamental features of Goal 11 talks about universal access to safe, inclusive and accessible, green and open spaces in particular for females and children, grown-up persons, and persons with ill health"(Synergy *et al.*, 2015). However, UN-Habitat (2015) conference, did not link the urban open spaces to economic growth and social welfare.

Stanley (2012) opined that "the open spaces contribute to the political, social welfare and physical health of residents and communities, but, no studies have been able to link Public open spaces to economic growth such as jobs creation, GDP and investments and Social welfare which this study has explored and examined"(Stanley *et al.*, 2012).

Chang and Li (201) indicate that "The role that is played by urban open spaces could have a direct influence on the quality of life among the people living in the urban areas. They also provide spaces for socializing, political discourse and cultural expression. The existence of tress and their shades and as well grass in open areas can be an attraction for people to spend more time outdoors , which improves social interacting among the members of the community"(Chang and Li, 2014).

Rwanda has grown from genocide to become one of the fastest-growing and cleanest Africa nations. In its Aim of urban development looks at how they put the environment at heart of inclusive and sustainable regeneration (Centre and Urban, 2014) However, none of these researchers have specified the contributions of urban open spaces on Social welfare and tax revenues which this study has assessed, explored and examined.

1.4. Research Objectives
1.4.1. Main objective

The general objective of this study is to asses, explore and examine the benefits of Urban open spaces on Social welfare and Tax revenues in Rwanda: evidence from Rwandan cities.

1.4.2. Special objectives

1. To determine the contribution of the urban spaces to social welfare.
2. To determine the contribution of the urban spaces to jobs creation and people's perceptions on tax revenues.
3. To identify the challenges that are facing the City of Kigali to build the urban spaces to satisfy the social welfare, jobs creation and people's perceptions on tax revenues.
4. To suggest to the stakeholders an urban open spaces policy to overcome the challenges.

1.5. Research questions/ Hypothesis
1.5.1. Main question:

What is the contribution of the urban open space to social welfare and tax revenues?

1.5.2. Sub-questions

1. What is the contribution of the urban spaces to social welfare?
2. What is the contribution of the urban open space to jobs creation and people's perceptions on tax revenues?

3. What are the challenges that face the City of Kigali to build the urban spaces to satisfy the social welfare, jobs creation and tax revenues?
4. What should be the policy to overcome the challenges?

1.6. Scope of the study

The purpose of this study was only focused on assessing, exploring and examining the benefits of urban open spaces on Social welfare and Tax revenues in Rwanda. Study coverage was concerned by all Rwandan cities. Hence, only 7 districts have fulfilled the criteria of having acceptable cities plus the Kigali city. Given that the population of this study was constituted of all open spaces cities and open spaces could not respond to my questionnaire, the representatives of the cities were random selected. In this line, a sample size of 257 inhabitants from 7 districts which contain second cities and the city of Kigali was computed from OpenEpi. This study takes a period of 5 years that means 2013 to 2018.

1.7. Justification of the study

In many countries that are developed, various studies on public open spaces have been conducted in different times about the importance of public spaces in the community, the impact of public spaces, and how they can go about these public spaces (Balogh and Takács, 2011). Unfortunately, none of these studies that have been conducted over the decades have assessed, examined and explored the contributions of urban open spaces on social welfare and tax revenues which I am sure by the end of this study the gap will be fulfilled in the sense that it will address the issues of the approaches and policy to enhance the development, usage and the contribution of urban open spaces in Rwanda. The approaches and policy to enhance and enforce the use of urban open spaces have been only discussed in the last 10 years looking on how to address the issue of urban use of land with the engagement of different stakeholders' mainly public and private community.

Therefore, the study is important in the sense that by the end of the study the contribution of urban spaces will be highlighted and approaches and policy will be suggested which will bring more focus and involvement of both public and private communities in Rwanda.

It is very much important for the authorities, urbanities and the general public to be aware of the contributions of urban spaces. The goal is to raise the awareness so that the policy on urban open spaces should be put in the place in order to facilitate the development of public spaces and the benefits it has on Social welfare and economic growth of the country. Like I said earlier, there is no study that has brought about the contributions of open spaces on social welfare and tax revenues.

1.8. Limitations of the Study

The major limitations of this study will be:

The research adapts two approaches such as quantitative and qualitative because of the limited time to use each approach as they are intended. The purpose is eventually to use these approaches properly as expressed in their literature rather than briefly to cover as much space as possible.

A few of the local government officers could not respond to the questions in the questionnaires due to their busy schedules and the limited time this study had.

The city of Kigali and other second cities of Rwanda are still new in growing and to this term open spaces also, and therefore this had somehow limited a researcher from getting proper information from the respondents and hence this had in some ways affected the main focus of this study as to examine and explore the contributions of urban open spaces (UOS) on social welfare and tax revenues of the urbanities of Rwanda.

1.9. Delimitation of the Study

Since there were a number of limitations for this study, a researcher decided to draw a focus on assessing, exploring and examining the benefits of urban open spaces on Social welfare and Tax revenues in Rwanda and the study coverage was concerned by all Rwandan cities. But since there was limited time and scarcity of urban open spaces, only 7 districts which had fulfilled the criteria of having acceptable cities plus the Kigali city. Given that the population of this study was constituted of all open spaces cities and open spaces could not respond to my questionnaire, the representatives of the cities were random selected. In this line, a sample size of 257 inhabitants from 7 districts which contain second cities and the city of Kigali was computed from OpenEpi. This study took a period of 5 years that means 2013 to 2018.

1.10. Significance of the Study

It is hard to pinpoint the meaning of a word which is defined in its own way, however, the motive of the study is not to communicate the meanings of words but rather to examine, discover and explore the contributions of urban open spaces (UOS) on social welfare and tax revenues.

In the end i have hope that the study will examine and explore the contributions of urban open spaces (UOS) on social welfare and tax revenues and suggests the approaches and policy to enhance and enforce the use and development of public spaces (PS) in Rwandan cities.

Finally, the study will contribute knowledge to the academic world, specifically to city planners, open spaces policy makers and/or city developers in the line of contributions of urban open spaces on Social welfare and Tax revenues.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This literature review is organized for the purpose of exploring urban open spaces (UOS), the initiative of the government and the contributions of UOS on social welfare and tax revenues. It focuses on literature written over the last years on the subject of open space, although some recent work is cited. The literature includes academic papers, theses, articles, local government and NGO reports and policy. In the Rwanda, like, elsewhere in the world, urban and massive rural development progress have significantly changed over the years. The country has gradually development, companies have become more large and complex and more stable financially. They have also adapted new technologies and investors are seen increasing every single time, however, there is no or less on the UOS and the contributions on social welfare and tax revenues(Williams *et al.*, 2001).

2.2. Theoretical review

The theory of place emerged from Barker's 1950's research on behavior settings in the field of ecological psychology. Behavior settings provided functional descriptions of everyday human activity based on observations of people in places. Recurrent behaviors of individuals or groups were described within physical milieu. By the 1970s, the description of behavior settings expanded to include personal experience in what Relph (1976) and Canter (1977) referred to as identity of place (Nasution and Zahrah, 2017). Although place meanings are entrenched in the bodily setting and its activities, they are not a property of them however a property of human contact and involvements of those places (Parsa and Torabi, 2016)

In every model, place is a personal joining with activities and functions which are geographically located. It exists at the level of the individual and is at the same time shared to the extent that lived experiences relate. Collectively, a shared resemblance of social, economic, and cultural surroundings will ensuring consistency in how physical settings are used or left unused. Public spaces have been originated to be reliably well used when they are responsive to needs of users, democratic in their accessibility, and meaningful for the larger community and society. To achieve popularity with new designs, participatory place-making identifies elements of interest for the target user population and incorporates them into the design. User participation during the design process validates the design and ensures success of place-making in a competition to sell urban environments (Carmona, 2014) and (Strydom and Puren, 2011) However, the enduring success of place-making is constrained by the extent to which the snapshot used to define contexts of ongoing activity accommodates changing wants and needs of user populations and changing user populations (Ghavampour, Vale and Aguila, 2016)

Charles Curtin in the Science of Open Spaces challenges the traditional conservation paradigm and proposes a science and practice of open spaces which is flexible, locally connected, and interdisciplinary. In this critique, Curtin takes aim at reductionist science and top down control, which he identifies as fundamental aspects of traditional Western scholarship and conservation efforts. In their place, Curtin argues for a theory and practice of conservation based on complex, systems science and integrated, collaborative institutional design. This proposed science of open spaces relies on interdisciplinary, continually refined science and a respect towards the opinions and knowledge of local communities (Curtin, 2015).

Based on Target11.7: By 2030 of UN-Habitat (UNIDO, 2018), provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities has defined and conceptualize Public space as all places that are publicly owned or of public use, accessible and enjoyable by all, free and without a profit motive, considered into streets, open spaces and public amenities. For the drive of monitoring and reporting on indicator 11.7.1, public space is defined as all places of public use, reachable by all, and comprises open public space and streets. Public space in overall is well-defined as the meeting or gathering places that exist outside the home and workplace that are generally accessible by members of the public, and which stand-in resident interface and opportunities for contact and proximity.

This definition implies an advanced level of community communication and places a focus on public involvement rather than public ownership or stewardship. For measurement of indicator 11.7.1, the elements which can be careful as open public space include:

Recreational areas: public areas that contribute to environmental preservation. Their main functions can be both ornamental and passive recreation. These include areas such as playgrounds, riverfronts, waterfronts, public beaches, etc.

Civic parks: Open space shaped because of structure agglomeration around an open area, which was later distorted into a representative civic area. They are characterized by considerable nature, specifically gardens and a good place for cultural events and passive recreation.

Squares and Plazas: Open spaces shaped because of building agglomeration around an open area. Its main features are the important architectonic elements and interaction between buildings and the open area. Squares are usually public spaces relevant to the city due to their location, territorial development, or cultural importance (UNIDO, 2018).

2.3. Conceptual review

Public space is "the stage upon which the drama of communal life unfolds" (Mehta, 2007). Scholars argue that public space at neighborhood level plays a significant role in people's everyday life; it is an everyday space of community (Chitrakar, 2017). According to Madanipour, public space is intertwined with everyday life in neighborhoods in such a way that it is directly related to the quality of day-to-day social life. Public space anxieties not only the bodily but also the social and psychological sizes with an important overlap among them (Chitrakar, 2017).

The bodily measurement mentions to the physical environment or "provision" of public space which delivers a setting for social interface, while the social measurement refers to the "use" or activities occurring in the space (Ghavampour, Vale and Aguila, 2016). The psychological measurement narrates to the perception of public space, which may be articulated in terms of how people interpret the space and give "meaning" to it, and how such meaning helps develop a sense of community. The meaning of public space therefore has a robust association with its physical and social dimensions. Studies have shown that the physical setting of public space can influence its meaning for social interaction and fosters a sense of community(Chitrakar, 2017);(Dempsey *et al.*, 2011);(Peters, 2011)

In 2005, The Miami Valley Regional Planning Commission (MVRPC) conducted the Miami Valley Open Space Assessment study in order to develop a 2005 Open Space GIS database and examine the status of open space in the Region, and they defined open space in their adapted definition from the 1993 Open Space Inventory study as General Outdoor Recreation Area, Outstanding Regional Amenity, Natural Environment Protection Area, Utilities, Open Space Link, Natural Environment Recreation Area, School, Landfill/Mineral Extraction, Cemeteries, Historical Site/Museum, and Airfields (Лабода, 2005) and they moved on to demonstrate it in the table which I think is so important to use it here.

Table1: Definition of open spaces from The Miami Valley Regional Planning Commission, 2005

General outdoor Areas		Utility		Landfills/ Mineral Extraction	
Swimming Pool	Picnic Grounds	Well Field	Waster Plant	Landfill	Quarry
Active Recreation	Stadium	Open Space Link		Sand & Gravel Extraction Site	
Plaza/Commons	Horse Racing	Hiking Trail	Large Institution	Cemeteries	
Fairground	Auto Racing	Bikeway	Flood Control	Cemetery	
Ball Field	Golf Course	Pedestrian walkway		Historical Sites/ Museums	
Outstanding Regional Amenity		Natural Environment Recreation Area		Historical Site	Museum
Scenic River	Waterfall	Campground	Fishing Lake	Covered Bridge	
Natural Environment Protection Area		Fish& Game Club	Scout Camp	Airfield	
Wildlife Preserve	Natural Area	School		Airport	Sky Diving
Park Preserve	Wetland Preserve	Public School	College		
Storm Basin	Hunting Area	Private School	University		

Source: MVRPC 2005 Open Space Database

2.4. Conceptual frame work

Different researchers have said various things on open spaces in general showing the importance and contribution of open to quality of life. This study was focused on the contribution of urban open spaces on social welfare and tax revenues, and variable are; urban open space (Independent variable), Social welfare and Tax revenues as dependent variables; Age, Sex, Level of education, Level income among others as intervening variables.
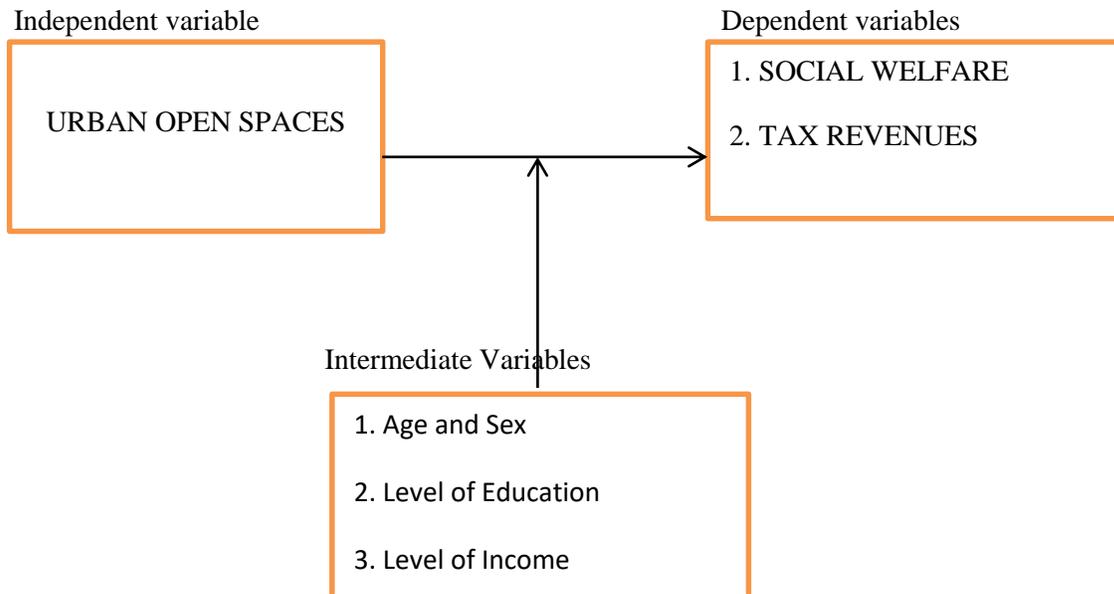
Independent variable   Dependent variables

| URBAN OPEN SPACES |

| 1. SOCIAL WELFARE |
| 2. TAX REVENUES |

Intermediate Variables

| 1. Age and Sex |
| 2. Level of Education |
| 3. Level of Income |

Public open space is a free place for people to be accessed. Everybody is free to do many various activities at the place. The physical elements and activities of public open space offer many benefits to quality of life: health, social interaction and economic value. The quality of public open space can be judged by how long people stay at such places and the range of activities carried out there. The quality of such space relates to its usability and people's need and perception. If it is not usable and perceived better by the public, it will not become useless and unsuccessful (Wasade, 2018)

It has been said that if public spaces achieve satisfactory results in the tripartite above mentioned areas, "they can make a significant contribution in enhancing social interaction and reduce exclusion rooted on social class, ethnicity, age or gender. The importance of open spaces in addressing these issues affects planning decision (Daneshpour and Mahmoodpour, 2009)

2.5. Empirical review

Urban open spaces are outdoor spaces with free access for people such as streets, markets, airports, stadium, parks, and pedestrian paths. Open spaces can be successful while being conducted by social interaction

attracts many people to do different activities in there, with various activities occur, individuals, groups and informal can suit in there for leisure and reaction. It is the place for all people regardless of their age, gender and financial statuses. Successful UOS should promote psychological comfort and safety (Nasution and Zahrah, 2017).

Public open space is a free place for people to be accessed. Everybody is free to do many various activities at the place. The physical elements and activities of public open space offer many benefits to quality of life: health, social interaction and economic value. The quality of public open space can be judged by how long people stay at such places and the range of activities carried out there. The quality of such space relates to its usability and people's need and perception. If it is not usable and perceived better by the public, it will not become useless and unsuccessful (Wasade, 2018)

Societal benefits supplied by urban green spaces (UGS) to city dwellers are vital to maintain and increase urban citizens' quality of life (QoL). UGS are essential in mitigating high summer temperatures of their grounds and nearby surroundings, and are vital in air pollution removal and noise abatement. They are also highly regarded for positive effects in promoting their visitors' physical and mental health and providing opportunities for social interactions and recreation. The QoL benefits derived from UGS are increasingly central to urban society and, therefore, understanding visitors' attitudes and perceptions of UGS is essential for informed urban planning (Kothencz *et al.*, 2017)

It has been said that if public spaces achieve satisfactory results in the tripartite above mentioned areas, "they can make a significant contribution in enhancing social interaction and reduce exclusion rooted on social class, ethnicity, age or gender. The importance of open spaces in addressing these issues affects planning decision (Daneshpour and Mahmoodpour, 2009)

However, Previous research has found that people hold complex and uncertain 'half sought and half feared' perceptions of green spaces. While residents value their benefits, they sometimes associate green spaces with feelings of insecurity and crime. Residents who have positive perceptions of green spaces and find them pleasant and safe are more likely to use them (Mahmoudi Farahani and Maller, 2018)

Open spaces helps economic development: A good network of public space has impact on economic productivity as it improves the efficiency of the supply chain, reducing production costs and promoting the mobility of goods and people. Public space provides important benefits to all forms of business, both formal and informal. As cities increasingly compete with one another to attract investment, good streets, market places, parks, squares, gardens and other public facilities becomes a vital business and marketing tool. In addition, good public spaces can upsurge the land standards of the adjacent properties.

Entrepreneurs, large or small, are attracted to locations that offer well-designed, well-managed public places and these in turn attract customers, employees and services(UN Habitat, 2015).

This literature review is focused on all recent related studies that were conducted in search for the development of public open space in the urban places of the world. But, all these studies across the world did not link the contributions and benefits of urban open spaces (UOS) on social welfare and tax revenues to the community which is the gap this study has put more emphasis on to fill.

At the same time, the worry of crime has been a man reason for citizens neglecting the open space and the role of government authorities to open spaces has declined (Madanipour, 2007). Therefore, new additions to open space are many times developed and controlled by private investors. To protect and increase the investments these open spaces tend to be controlled for exclusive uses undermining their public dimension. The development if it is given to private or if UOS are more privatized can improve the quality of open space and people's welfare.

In 2011, UN-Habitat's Governing Council gave a clear opportunity and direction through Resolution 23/4 to consolidate agency-wide work on public space. UN-Habitat's member States instructed the agency to progress an approach that encourages the role of public space in meeting the challenges of our rapidly urbanizing world, and to organize numerous global associates and experts on public space and to directly assist cities in their initiatives on the public space management and monitoring. This order ran to the initiation of the methodological work on global monitoring and reporting on public spaces. Based on this mandate, UN-Habitat and its partners spear headed debates and work on global definitions, as well as measurement of various elements of public space.

The inclusion of a global indicator on public space within the SDGs framework further revitalized the already ongoing efforts by UN-Habitat. In its bid to fast track the monitoring of public spaces as required in the SDGs framework, UN-Habitat over the last two years has undertaken initiatives aimed at enhancing clearness on concepts, refining methodologies and easing their piloting and adoption across the world. Some of the important activities assumed by the agency towards this goal included convening of several consultations and expert group meetings to talk the outstanding issues on definitions and concepts, refining and piloting the indicator computation methodology, and developing a strategy for developing Member States capacities to monitor open public spaces (UNIDO, 2018)

However, based on this study I defined Urban open space as public spaces such as markets, airports, recreation & leisure places, parks, zoo, bus stations (transportation), stadium, beaches, libraries, Pubic gyms and street parking.

According to Joseph, Social welfare generally refers to states' services designed to protect citizens from the economic risks and insecurities of life. The western style social welfare programmes were installed in response to industrialization in urban cities. Over the decades, a general consensus is reached that states are responsible for protecting all those unable to care for themselves for whatever reasons. Social well-being is a matter of right rather than of need. Financing of states' social welfare programmes essentially originates from public revenue. In this regard, social welfare is one of the systems of transfer payments to bridge the gap between the poor and the rich. As the arrangement and nature of social welfare programmes flattering more comprehensive and diversified, covering increasingly more sectors of the society, meeting more identified needs; the earlier version of social welfare has changed substantially in the modern era (Joseph Kwok, 2013).

In the current era social welfare is often understood with a broad meaning to include public provisions of education, health, housing and public assistance. In this manner, it is more appropriately connected to the conception of the welfare state. In an ideal welfare state the government plays a important role in the protection and promotion of the economic and social well-being of its citizens, based on the principles of equality of opportunity, equitable distribution of wealth, and public responsibility for those unable to avail themselves of the minimal provisions for a reasonable standard of life (Joseph Kwok, 2013).

Social welfare is an organized scheme of social services and institutions, intended to help individuals and groups, to reach satisfying standards of life and health. Social well-being therefore, purposes at providing services to feebler sections of the inhabitants who for the reason that of numerous handicaps such as physical, mental, economic and social, are incapable to make use of social services provided by society or have been traditionally disadvantaged of these services. According to Wayne Vasey ,1958 (Bharadwaj, no date) social welfare included two main characteristics:

The utilization of welfare measures to support or strengthen the family as a basic social institution through which needs are met; and The determined to strengthen the individuals' capacity to manage with their life situation.

The provision of social welfare includes services for children, youth, women, aged, scheduled castes, scheduled tribes, other backward classes, minorities, disabled, drug addicts, and economically under-privileged such as destitute and unemployed. Social welfare programmes are, therefore, directed to ameliorate their conditions (Bharadwaj, no date)

The historical perspective to revenue generation is as old as civilizations have existed. In ancient Egypt, the fifth of all crops were given to Pharaoh. Ancient Greece imposed taxes to generate revenue to fund wars. The Roman Empire generated revenue by imposing taxes on colonies so as to increase the bounty of the empire. Julius Caesar imposed 1% sales tax and Augustus instituted to fund military expenditure. The first modern revenue generation is traced to the British Empire in the 14th Century when Tsar Peter taxed beads, boots, beehives, candles, hats, horses, chimneys and water to finance public expenditure in Europe. In China, taxes were levied 3000 years ago as the empire was being established (Osoro, Atambo and Abuga, 2016).

In the United States, Economists generally caution that government leverage in excess of about 60 percent of the economy is problematic, and a rising debt level is simply unsustainable for an extended period of time. A rising debt level is ultimately unsustainable because its growth exceeds that of the overall economy. Congressional Budget Office of the United States finds that reducing government budget deficits, thereby bending the curve on debt levels, is a net positive for economic growth. CBO finds a dichotomy, however, between the short-term and longer-term impacts of deficit reduction. For example, CBO's short-term economic models are driven mainly by demand-side factors. According Cooper and Schindler, (2006) these are short-term models deficit reduction that lowers government spending leads to a temporary reduction in economic output due to the assumed reduction in consumption as a result of lower government transfers. These models assume government spending has a "fiscal multiplier" in excess of 1, meaning that its reduction leads to an outsized reduction in overall economic output. Of course, every dollar the government spends must be taxed or borrowed from the private sector (House Budget Committee, 2013).

In Europe, revenue generation is from income tax, allowances, bands, rates, taxation on charitable, tax on bank interest, tax credits, land fill tax, climate change levy, aggregate levy, betting and gaming levies, capital gain taxes, inheritance tax, stamp duties, corporate tax, sea tax, bank levies, council or community tax and national insurance tax. In Europe, total UK government receipts are forecast to be £648.1 billion in 2014–15, or 37.7% of UK GDP. This is equivalent to roughly £12,400 for every adult in the UK, or £10,000 per person. Not all of this revenue comes from taxes: taxes as defined in the National Accounts are forecast to raise £606.0 billion in 2014– 15 fiscal years, with the remainder provided by surpluses of public sector industries, rent from state-owned properties and so on (International Financial System, 2014). In India, revenue generation like other counties is mainly through their tax regime. Taxation Powers in India's federal structure of Central Government constitute; direct Taxes: (Income Tax, Corporation and Personal) Dividend Distribution Tax, Wealth Tax), indirect Taxes: Central Excise, Customs, service Tax, transaction Tax: Securities Transaction Tax, Value Added Tax. Other revenue generation in India comprise of Excise on alcoholic liquor, luxury tax, entry tax, electricity duty, entertainment tax, stamp duty, property tax,

professional tax, agricultural income tax (International Monetary Fund Report, 2012) ; (Osoro, Atambo and Abuga, 2016)

In Rwanda, Revenue generation is guided by the general provisions of law. The law demarcates taxation as a primary source of revenue generation to fund public expenditure. Rwanda has enacted tax laws to facilitate the collection of taxes and enhance compliance with tax laws. These laws include; Law on Direct Taxes on Income no 16 of 2005 as amended, law on Value-added tax no. 37 of 2012, as amended, Law on Tax Measures no. 25 of 2005, the Commissioner General's Rules and Ministerial orders. This is the foundation of revenue generation in Rwanda (Osoro, Atambo and Abuga, 2016)

Tax revenue, which forms the dominant share of revenue for many government units, is composed of compulsory transfers to the general government sector. Convinced compulsory transfers, such as fines, penalties, and most social security contributions, are excluded from tax revenue. Reimbursements and corrections of erroneously collected tax revenue have the appearance of transactions that decrease the net worth of the government unit imposing the tax. More accurately, they are adjustments that allow the excessive increase in net worth previously recorded to be corrected. As such, these transactions are treated as negative revenue (Hoag and Hoag, 2012).

Sales of goods and services are recorded as revenue without deduction of the expenses incurred in generating that revenue. It is quite possible for general government units to sell their output at prices that are less than the cost of production. Indeed, by way of nonmarket producers, most general government units distribute their output without charge or for prices that are not economically significant. In these cases, the net worth of the unit has decreased because the expense from production is higher than the revenue from the sale of the goods and services in question. In a broader perspective, however, the general government unit is seen as having decided to produce the goods or services as a matter of public policy and to impose some dues or sell some items, rather than give them away, to defray some of the costs or to eliminate some of the excess demand that otherwise would exist. In this view, the resources have already been committed and the fees or sales receipts are an increase in the unit's net worth (Hoag and Hoag, 2012).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Research Design

In this study, mixed methods research design was used, that is to say both quantitative and qualitative approaches. Since, the objective of this study was to establish to what extent the urban open spaces contribute to welfare and tax revenues, quantitative approach was well needed since it deals with the numbers in order to assess the correlation and causality between variables (Benítez, Van de Vijver and Padilla, 2019); However, human perceptions, behaviors, attitudes and viewpoints cannot be measured with quantitative approach, reason why there was a need of qualitative approach (Benítez, Van de Vijver and Padilla, 2019).

3.2. Study population identification

The population targeted was derived from the meaning of the topic of the study entitled "An analysis of urban open spaces on social welfare and tax revenues in Rwanda". The population of this study was constituted of all open spaces; however, since it was difficult to interview the open spaces, it was clear to interview the inhabitants of the cities that included the authorities and citizens of the selected cities. The total population living in cities was estimated to 1256818 (see details in Table 2 below).

Table2: Identification of targeted population

SN	CITY	No of people in the city	Selected
1	Kigali City	745261	152
2	Butare, Southern Province	89600	18
3	Muhanga, Southern Province	87613	18
4	Musanze, Northern Province	86685	18
5	Rubavu, Northern Province	83623	17
6	Gicumbi, Northern Province	70593	14
7	Nyagatare, Eastern Province	47203	10
8	Kayonza, Eastern province	46240	9
	Total	**1256818**	**257**

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

3.3 Sampling procedure

Stratified sampling is a probability sampling technique wherein the researcher divides the entire population into different subgroups or strata, then randomly selects the final subjects proportionally from the different strata. Therefore, Stratified proportional sampling for each district was the procedure for this study.

3.4. Sample size

The random sampling was computed from OpenEpi, version 3 calculator under the formula:

$$n = \frac{DEFF * N * p(1-p)}{[d^2 / z^2_{1-\alpha/2} * (N-1) + p * (1-p)]} = \frac{1.5 * 1256818 * 0.5 * 0.5}{[\frac{(0.75^\wedge 2}{1.96^\wedge 2} * (1256818 - 1) + 0.5 * 0.5]} = 257$$

Where p= probability of success=0.5, 1-p is probability of non-success, N is total population, d= margin error = 0.75, DEFF =design effect =1.5 and Z is the z-score =1.96 at 95% CI, and n is the sample size.

Based on the total population (N) = **1256818,** the formula was used to calculate the sample size of our targeted population in the Kigali city and other 7 second cities.

Sample Size for Frequency in a Population

_____

Population size(for finite population correction factor or fpc)(N): 1256818

Hypothesized % frequency of outcome factor in the population (p): 50%+/-7.5

Confidence limits as % of 100(absolute +/- %)(d): 7.5%

Design effect (for cluster surveys-DEFF):1.5

Sample Size(n) for Various Confidence Levels

_____

Confidence Level(%)	Sample Size
95%	257
80%	110
90%	181
97%	314
99%	443
99.9%	722
99.99%	1009

_____

Equation of Sample size n = [DEFF*Np(1-p)]/ [(d2/Z21-α/2*(N-1)+p*(1-p)]

Results from OpenEpi, Version 3.

3.4.1. Questionnaire

The questionnaire as an instrument was used to collect the information needed which were both quantitative and qualitative in nature whereby selected authorities and citizens from each (selected) district and Kigali city answered the questions in the questionnaires. The respondents were of the age group (10-19) to 60+ years old both female and male, educated and no educated, low and higher income earners and whether the respondents are using open spaces or not. The questionnaire was composed of 5 sections including Socio-Demographic factors, Contribution of urban spaces to social welfare, Contribution of the urban spaces to jobs creation and tax revenues, needs and perception, Challenges that are facing the City of Kigali to build the urban spaces to satisfy the social welfare, jobs creation and tax revenues respectively. The first four (4) section of the questionnaire were of closed ended questions and the last section was composed of open ended questions. A pilot study was conducted to confirm the validity and reliability of the instrument.

3.5. Data collection

In this study, Data collection was conducted from 1st April, 2019 to 15th April, 2019 from the cities of seven (7) districts such as as Huye and Muhanga in the south, Musanze in the north, Rubavu in the west, Gicumbi in the north, Kayonza and Nyagate in the East and the city of Kigali with an intention of having all 257 respondents who responded to questions in the questionnaire but one was dropped due to incomplete interview. Like I said earlier, the questionnaire was composed of 5 sections that included Socio-Demographic factors, Contribution of urban spaces to social welfare, Contribution of the urban spaces to jobs creation and tax revenues, needs and perception, Challenges that are facing the City of Kigali to build the urban spaces to satisfy the social welfare, jobs creation and tax revenues respectively. The first four (4) sections of the questionnaire were of closed ended questions and the last section was composed of open ended questions. A pilot study was conducted to confirm the validity and reliability of the instrument.

Table3: the validity and reliability of the instrument

Label	Pilot study			Study		
	Value of Cronbach	Items	Decision	Value of Cronbach	Items	Decision
Frequency	0.69	10	Not Acceptable	0.71	9	Acceptable
Social welfare	0.93	27	Acceptable	0.93	27	Acceptable
Satisfaction	0.86	10	Acceptable	0.86	10	Acceptable
Tax Revenues	0.623	6	Not Acceptable	0.72	2	Acceptable
Job Creation	0.75	10	Acceptable	0.76	10	Acceptable
Needs	0.73	6	Acceptable	0.74	6	Acceptable
Perception	0.70	8	Acceptable	0.71	8	Acceptable

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Many, but not all, of the papers found to cite alpha values in the 2015 volumes of four science education journals (IJSE, JRST, RISE, SE) offered qualitative interpretations of the significance of the values calculated in relation to what was being measured which was usually considered as a form of reliability or

internal consistency. Some papers also offered indications of alpha having a threshold or cut-off as an acceptable, sufficient or satisfactory level. This was normally seen as ≥0.70. (Taber, 2018)

3.6. Operational definition of variables

Given that several definitions have proposed on the open urban spaces, this study will consider the open spaces as government public spaces such as markets, airports, recreation & leisure, parks, zoo, bus stations (transportation), stadium, beaches, libraries and Pubic gyms among others.

The topic of this study as it is entitled "An analysis of urban open spaces on social welfare and tax revenues in Rwanda" has three (3) main variables such as urban open space (independent variable), Social welfare (dependent variable) and tax revenues (dependent variable), but also it has intervening variables such as income level, education level, sex and age.

3.7 Methods of data analysis

The mixed methods research design was used, that is to say both quantitative and qualitative approaches. Since, the objective of this study was to establish to what extent the urban open spaces contribute to welfare and tax revenues, quantitative approach was well needed since it deals with the numbers in order to assess the correlation and causality between variables (Benítez, Van de Vijver and Padilla, 2019); However, human perceptions, behaviors, attitudes and viewpoints cannot be measured with quantitative approach, reason why there was a need of qualitative approach (Benítez, Van de Vijver and Padilla, 2019).

3.7.1 Quantitative approach

To interpret data frequencies and percentage for the variables measured on nominal and ordinal scales; mean and standard deviation were used for numerical variables. For bivariate analysis, the spearman's Rho correlation and chi-square test were applied. In addition, for numerical variables, the interpretation used mean and standard deviation. With multivariate analysis, multiple linear regressions and was used to assess the level of contribution of open spaces on welfare, jobs creation and tax revenues.

Durbin-Watson statistic test was used to test the autocorrelation in the residuals that are from regression analysis. The value of DW is comprised between 0 and 4 but DW=2 then there is no autocorrelation, if DW is between 0 and 2, then there is a positive autocorrelation while if DW is comprised between 2 and 4 there is negative autocorrelation. To detect the multicolinearity, the Variance inflation Factors was used (VIF).

Table4: The interpretation of Mean and Standard deviation.

Mean	Interpretation
1≤μ≤1.75	Very low mean
1.76≤μ≤2.49	low mean
2.50≤μ≤3.25	Average mean
3.26≤μ≤4.15	High mean
4.15≤μ≤5	Very high mean

Source: Agerti (2002).

Where, μ is the Mean, and

If σ ≤0.5 then there were homogeneity of responses,

If σ >0.5 then there were no-homogeneity responses.

According to Agerti, the mean of 1≤μ≤1.75 describes Very low mean, the Mean of 1.76≤μ≤2.49 describes low mean, the mean of 2.50≤μ≤3.25 describes Average mean, the mean of 3.26≤μ≤4.15 describes High mean, and the mean of 4.15≤μ≤5 describes Very high mean. The σ ≤0.5 describes homogeneity of responses and σ >0.5 describes no-homogeneity responses. (Agerti, 2002)

3.7.2 Qualitative approach

Since this study was concerned to use human behaviors, feelings and attitudes (Draper, 2004) has provided theoretical and philosophical bases for qualitative data analysis. (Benítez, Van de Vijver and Padilla, 2019) has described interpretative phenomenology analysis as a method of analyzing individual interview data. In this study the approaches of Drapper (2004) and Fade (2004) were applied for data analysis.

3.8. Ethical considerations

3.8.1. Introduction

Marianna Mantzorou and Paraskevi (2011) say that "informed consent is the major ethical issue in conducting research. Based on Armiger, it tells that an individual knowingly, voluntarily and intelligently, and in a clear and manifest way, gives his consent. Informed consent is one of the means by which a respondent's right to independence is protected"(Marianna and Paraskevi, 2011). Karen Rich (2012) describes that "independence is the ability for self-determination in action according to a personal plan. Knowledgeable consent seeks to incorporate the rights of autonomous individuals through self-determination. It also pursues to prevent assaults on the integrity of the respondent and protect personal liberty and veracity"(*Introduction to Bioethics and Ethical Decision Making*, 2012). Marianna Mantzorou and Paraskevi (2011) "Of course individuals can make informed decisions in order to participate in research voluntarily only if they have information on the possible risks and benefits of the research. Allowed and

knowledgeable consent needs to incorporate an introduction to the study and its purpose as well as an explanation about the selection of the research subjects and the procedures that will be followed. It is vital to identify any physical harm or discomfort, any invasion of privacy and any threat to dignity as well as how the subjects will be compensated in that case". Furthermore, Georgia and Marianna (2011) say that "the subjects need to know any expected benefits either to the subject or to science by gaining new knowledge. A disclosure of alternatives is also required. The researcher must notify the subjects about the methods which will be used to protect anonymity and confidentiality and indicate a person with whom they can discuss the study" (Georgia and Marianna, 2011). They added that "a researcher must also provide a "Non coersive Disclaimer" which states that participation is voluntary and no penalties are involved in refusal to participate. Moreover, the subject must be told that some information has been deliberately withheld in order to avoid altered behaviors".

3.8.2. Ethics

Akaranga and Makau (2016) say that "Ethics is a branch of philosophy that deals with the conduct of people and guides the norms or standards of behavior of people and relationships with each other. It refers to an "ethos" or "way of life", "social norms for conduct that distinguishes between acceptable and unacceptable behavior" .Many societies have legal rules which dictate behavior, but ethical norms are broader than laws. However, societies apply laws to enforce the moral standards (Akaranga and Makau, 2016).

Therefore, based on the fact that this study has been conducted in different areas of Rwanda which included 7 districts that fulfill the criteria of containing second cities which have open spaces and as well as Kigali city and consent letters were distributed to all the respondents during the pilot study and they accepted to be interviewed excepted only one respondent who did not complete an interview and his interview was excluded. All respondents participated fully and willingly in conducive way with the researcher.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter introduces the capturing of the Data both quantitative and qualitative whereby, SPSS software was used to record analyze and present quantitative Data. The quantitative Data introduces the Profile of the respondents, Description of variables: Frequency, Satisfaction, Social welfare, Tax revenues, Job Creation, Needs and Perceptions; Correlation matrix, regression, Anova and Coefficients, whereas (Draper, 2004) has provided theoretical and philosophical bases for qualitative data analysis.

4.2. Data presentation

The study was an attempt to examine, discover and explore the contribution of urban open space on social welfare and tax revenues in Rwanda; Evidence from Kigali city. As talked about in the chapter three, the researcher chose a sample of 257 respondents living in 7 districts of second cities and Kigali city but the results presented were for 256 since one respondent dropped out. On this chosen sample, a study was carried out to discover the magnitude of contribution of open space on social welfare and tax revenues. The Data collection schedule from 1st April, 2019 to 15th April, 2019 was set to collect data for the study using questionnaires which were distributed among the respondents. The questionnaire was composed of 5 sections including Socio-demographic factors, Contribution of urban spaces to social welfare, Contribution of the urban spaces to jobs creation and tax revenues, Needs and perception, Challenges that are facing the City of Kigali to build the urban spaces to satisfy the social welfare, jobs creation and tax revenues respectively. The first four (4) sections of the questionnaire were of closed ended questions and the last section was composed of open ended questions. The outcome acquired was brought into statistical analysis and are made known in this existing chapter.

The first section on the questionnaire concerned with the Socio-demographic factors associated with the situation of the respondents. The facts provided in this part were at a greater extent brought into a statistical analysis. The outcome got is introduced here in this chapter.

4.3. Data analysis, Results and discussion

The data analysis concerned with the handling of questionnaire survey as a manner of interference to secure a broad spectrum of views from respondents. The outcome is introduced systematically to address research aims and objectives and to answer the research questions. The analysis of quantitative data elaborates the use of SPSS software that made possible the entering, coding, editing, screening, and grouping, as well as producing both descriptive and inferential statistics of results from Data.

Since this study was concerned to use human behaviors, feelings and attitudes (Draper, 2004) has provided theoretical and philosophical bases for qualitative data analysis. (Benítez, Van de Vijver and Padilla, 2019) has described interpretative phenomenology analysis as a method of analyzing individual interview data. In this study the approaches of Drapper (2004) and Fade (2004) were applied for data analysis.

4.3.1. Profile of the respondents

In this section, it presented the profile of respondents by age and sex, level of education and as well as level of income in Table 1 and Table 2.

Table 5: Respondents by Age-group and Sex

Variables	Frequencies	Percentages
Age Group		
10-19	16	6.3
20-29	58	22.7
30-39	96	37.5
40-49	58	22.7
50-59	26	10.2
60+	2	0.8
Total	**256**	**100**
Sex		
Male	139	54.3
Female	117	45.7
Total	**256**	**100**

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table5 shows that there were more respondents 96 (37.5%) in age category 30-39, it was followed by two age groups which are 20-29 and 40-49 with 58 (22.7%) respectively. Table 1 reveals that the lowest number 2 (0.8%) was found in age category 60+ .This table also introduces that Male were the most respondents 139 (54.3%) and Female were the less respondents 117 (45.7%).

Table 6 Profile of the respondents by Education and range amount of income.

Variables	Frequencies	Percentages
Education		
None	3	1.2
Primary	32	12.5
Secondary	102	39.8
Bachelors	106	41.4
Masters	13	5.1
PhD	0	0
Total	**256**	**100**
Range of amount		
1-999	2	0.8
1000-9999	18	7
10000-99999	70	27.3
100000-499999	134	52.3
500000+	32	12.5
Total	**256**	**100**

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 6 reveals that there were more 106 (41.4%) respondents with bachelor's degree, followed by 102 (39.8%) respondents who went to secondary school and there were less 3(1.2%) respondents who never went to school and zero respondents that completed PhD.

The results in Table 6 showed that there were more respondents 134 (52.3%) in the income category of 100000-499999, followed by 70 (27.3%) respondents of income category 10000-99999 and there were less responds 2 (0.8%) from income category 1-999.

4.3.2. Description of variables

In this section, it introduced the description of variables including Frequency, Satisfaction, Social welfare, Tax revenues, Jobs creation, Needs and Perceptions.

Table 7: Descriptions of frequency of Urban open spaces

Items no	Statements	Mean	SD	Interpretation
Item1	I often use market	2.51	1.04	Average mean and non-homogeneity of responses
Item2	I often use airport	1.39	0.70	Very low mean and non-homogeneity of responses
Item3	I often use recreation& leisure places	1.61	0.71	Very low mean and non-homogeneity of responses
Item4	I often use Parks	1.31	0.65	Very low mean and non-homogeneity of responses
Item5	I often use Zoo	1.09	0.45	Very low mean and homogeneity of responses
Item6	I often use Public Library	1.28	0.60	Very low mean and heterogeneity of responses
Item7	I often use Stadium	1.44	0.7	Very low mean and heterogeneity of responses
Item8	I often use Beaches	1.48	0.76	Very low mean and heterogeneity of responses
Item9	I often use Public Gyms	1.16	0.68	Very low mean and heterogeneity of responses

Source: Primary Data collected from 1st April, 2019 to 15ᵗʰ April, 2019

Table 7 presents the means and standard deviations on how people frequented the urban spaces. Based on the results in Table 7, majority (mean=2.51, SD=1.04) of the respondents indicated that the market is often used, followed by recreation and leisure spaces (mean=1.61, SD=0.71), and then beaches (mean=1.48, SD=0.76), and less used is zoo (mean=1.09; SD=0.65).

Table 8: Descriptions of Contributions of Urban open spaces on Social welfare

Items no	Statements	Mean	SD	Interpretation
Item1	I know that open spaces reduce stress	4.74	0.655	Very high mean and heterogeneity of responses
Item2	Open spaces rejuvenates people	4.71	0.539	Very high mean and heterogeneity of responses
Item3	Open spaces provide peacefulness	4.61	0.583	Very high mean and heterogeneity of responses
Item4	Open spaces provide with people good mental health	4.55	0.612	Very high mean and heterogeneity of responses

Item5	Open spaces provide with people good physical health	4.57	0.622	Very high mean and heterogeneity of responses
Item6	Open spaces consolidate social integration	4.69	0.55	Very high mean and heterogeneity of responses
Item7	Open spaces increase interaction among neighbors	4.69	0.555	Very high mean and heterogeneity of responses
Item8	Open spaces increase interaction with friends and new friends	4.75	0.507	Very high mean and heterogeneity of responses
Item9	Open spaces create air purification by trees that reduces cost of pollution prevention	4.59	0.638	Very high mean and heterogeneity of responses
Item10	Open spaces promote a city as tourist destination	4.82	0.45	Very high mean and homogeneity of responses
Item11	Open spaces increase property value	4.81	0.447	Very high mean and homogeneity of responses
Item12	Open spaces used as festival places	4.57	0.616	Very high mean and heterogeneity of responses
Item13	Open spaces Promotes equality	4.53	0.593	Very high mean and heterogeneity of responses
Item14	Open spaces improves the urban environment	4.5	0.651	Very high mean and heterogeneity of responses
Item15	It Strengthens economic prosperity and employments in urban areas	4.56	0.611	Very high mean and heterogeneity of responses
Item16	They Provide leisure space	4.52	0.638	Very high mean and heterogeneity of responses
Item17	They Give mental stability	4.54	0.65	Very high mean and heterogeneity of responses
Item18	They Reduce air and environmental pollution	4.44	0.706	Very high mean and heterogeneity of responses
Item19	They Make scenery beautiful	4.51	0.697	Very high mean and heterogeneity of responses
Item20	They Maintain healthy natural ecological state	4.5	0.68	Very high mean and heterogeneity of responses
Item21	They Prevent indiscriminate urban development	4.44	0.754	Very high mean and heterogeneity of responses
Item22	They Raise real estate prices in the surrounding area	4.66	0.566	Very high mean and heterogeneity of responses

Item23	They Prevent natural disasters	4.45	0.728	Very high mean and heterogeneity of responses
Item24	Parks decrease health costs and support productivity, both through encouraging exercise and reducing air pollution	4.5	0.68	Very high mean and heterogeneity of responses
Item25	A park's plants absorb air pollutants such as nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, and some	4.51	0.645	Very high mean and heterogeneity of responses
Item26	Particulates, reducing the impacts they have on peoples' cardiovascular and respiratory systems.	4.57	0.677	Very high mean and heterogeneity of responses
Item27	Parks provide low or no-cost recreation and encourage exercise.	4.56	0.738	Very high mean and heterogeneity of responses

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 8 indicates the means and Standard deviations of contributions of urban open spaces on social welfare. The table introduces that item10 of the contributions of urban open spaces on social welfare has the most (Mean=4.82, SD=0.45), followed by item11 (Mean=4.81, SD=0.447), and the third item with the highest mean is item8 (Mean=4.75, SD=0.507), the fourth item with the highest mean is item1 (Mean=4.74, SD=0.655), and the item14 has the lowest 4.44 and 0.5754 of Mean and Standard deviation respectively.

Table 9: Descriptions of Satisfaction of Urban open spaces

Items No	Statements	Mean	Std. Deviation	Interpretation
Item1	The satisfaction of public markets can reconnect local economies to communities, while improving public health and supporting local food systems.	3.09	0.99	Average mean and heterogeneity
Item2	When airports are many creates tourism opportunities in terms of easy connections and increases on economy	1.8	0.893	Low mean and heterogeneity
Item3	The availability of recreation& leisure places provide safe and attractive places for individuals and families to exercise and play.	1.89	0.946	Low mean and heterogeneity
Item4	The availability of Parks ensures of an increase in tourism industry.	1.32	0.831	Very low mean and heterogeneity
Item5	The satisfaction of Bus Station eases people to connect easily in terms of traveling	3.11	1.106	High mean and heterogeneity
Item6	The existence of Zoos in town makes life easy when people visit them	1.28	0.785	Very low mean and heterogeneity
Item7	The existence of Public library is to provide better and immediate services to their users. The levels of success of these libraries are based on the level of satisfaction of their users.	1.38	0.742	Very low mean and heterogeneity
Item8	Sports have long been an integral part of our culture and therefore having stadiums in town is worth it.	1.55	0.796	Very low mean and heterogeneity
Item9	Beach is said to be one of famous tourism destination in towns visited by many domestic and foreign tourists.	1.29	0.861	Very low mean and heterogeneity
Item10	Overall how satisfied you feel with your decision to exercise in the public gyms	1.16	0.726	Very low mean and heterogeneity

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

The results in table 9 revealed the Means and Standard deviations of how people are satisfied with the Urban Open spaces. The table introduces that item5 of the satisfaction of urban open spaces has the most

highest (Mean=3.11, SD=1.106), followed by item1 (Mean=3.09, SD=0.99), and the third item with the highest mean is item3 (Mean=1.89, SD=0.946), the fourth item with the highest mean is item2 (Mean=1.8, SD=0.893), and the fifth item with the highest mean is item8 (Mean=1.55, SD=0.796) and item10 has the lowest 1.16 and 0.726 of Mean and Standard deviation respectively.

Table 10: Descriptions of Contribution of the urban spaces to jobs creation

Items No	Statement	Mean	Std. Deviation	Interpretation
Item1	It is true that properties that are in proximity to parks increase value	4.8	0.672	Very high mean and heterogeneity of responses
Item2	Park as an open space increases property tax revenue	4.85	0.536	Very high mean and heterogeneity of responses
Item3	It is believed that Parks are the venues of tourists!	4.71	0.488	Very high mean and homogeneity of responses
Item4	Zoos attract various people to come to visit; more jobs are created such as restaurants, hotels, markets and create tax revenues to the city.	4.71	0.521	Very high mean and heterogeneity of responses
Item5	Creating well planned parks and preserving sufficient land for them can generate financial returns that are often many times greater than the money initially invested into the project, even when maintenance costs are factored in	4.78	0.501	Very high mean and heterogeneity of responses
Item6	Companies often choose to locate in communities that offer amenities such as parks as a means of attracting and retaining top-level workers.	4.73	0.511	Very high mean and heterogeneity of responses

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 10 represents the contributions of urban open spaces on Jobs creation. The table 10 indicates that item2 of the contribution of urban open spaces on jobs creation has the most highest (Mean=4.85, SD=0.536), followed by item1 (Mean=4.8, SD=0.672), and the third item with the highest mean is item5 (Mean=4.78, SD=0.501), the fourth item with the highest mean is item6 (Mean=4.73, SD=0.511), and the fifth item with the highest mean is item4 (Mean=4.71, SD=0.521) and item3 is the last item with the lowest 4.71and 0.488 of Mean and Standard deviation respectively.

Table 11: Descriptions of Contribution of urban open space on people's perceptions to Tax revenues

Items No	Statement	Mean	Std. Deviation	Interpretation
Item1	Parks draw visitors from near and far, bringing tourism revenue to local restaurants, hotels, snack shops, and stores	4.64	0.653	Very high mean and heterogeneity of responses
Item2	Parks, stadiums host festivals, concerts and athletics events, and bringing additional boosts to the local economy.	4.63	0.651	Very high mean and heterogeneity of responses
Item3	They say that modern markets in towns create more job opportunities to urbanities	4.66	0.572	Very high mean and heterogeneity of responses
Item4	It has been said by many that the more the airports, the more people coming in from outside, the more jobs created, the more tax revenues coming in.	4.74	0.513	Very high mean and heterogeneity of responses
Item5	The recreation and leisure places create jobs like Convention services, Event planning companies, Corporate employee services, Hotels, Resorts, Theme/amusement parks, Casinos, Country clubs, Motor home parks, Camp grounds, Boating/marina facilities, Secon	4.68	0.544	Very high mean and heterogeneity of responses
Item6	Having many bus stations creates more opportunities such as jobs, easing transport and having many people coming to town because transport means are available.	4.73	0.47	Very high mean and homogeneity of responses
Item7	The availability of Public libraries reminds people to go to visit, read books and relax a bit.	4.46	0.745	Very high mean and heterogeneity of responses
Item8	Stadium projects generated positive employment impacts on local area real GDP either during or post-construction.	4.71	0.494	Very high mean and homogeneity of responses
Item9	A lot of job opportunities have been created around the beaches and it boosts the economy	4.77	0.458	Very high mean and homogeneity of responses
Item10	People build restaurants, coffee shops nearby public gyms.	4.64	0.604	Very high mean and heterogeneity of responses

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

The results in the table 11 indicated the contributions of urban open spaces on people's perceptions to Tax revenues. The table11 presents that item9 of the contribution of urban open spaces on tax revenues has the most highest (Mean=4.77, SD=0.458), followed by item4 (Mean=4.74, SD=0.513), and the third item with the highest mean is item6 (Mean=4.73, SD=0.47), the fourth item with the highest mean is item8 (Mean=4.71, SD=0.494), and the fifth item with the highest mean is item5 (Mean=4.68, SD=0.544) and item7 is the last item with the lowest 4.46 and 0.745 of Mean and Standard deviation respectively.

Table 12: Description of Needs

Items No	Statements	Mean	Std. Deviation	Interpretation
Item1	Expanding pedestrian paths	4.67	0.511	Very high mean and heterogeneity of responses
Item2	Expanding bicycle paths	4.62	0.518	Very high mean and heterogeneity of responses
Item3	Greening rooftop, walls of building and fence	4.67	0.526	Very high mean and heterogeneity of responses
Item4	Expanding natural parks in forest areas	4.72	0.485	Very high mean and homogeneity of responses
Item5	Making parks with areas of cultural assets	4.74	0.482	Very high mean and homogeneity of responses
Item6	Everybody should be free to do many various activities at the place.	4.89	0.381	Very high mean and homogeneity of responses

Source: Primary Data collected from 1st April, 2019 to 15ᵗʰ April, 2019

The results in the table 12 presented the Needs of people on urban open spaces. The table12 reveals that item6 of the needs of people on urban open space has the most highest (Mean=4.89, SD=0.381), followed by item5 (Mean=4.74, SD=0.482), and the third item with the highest mean is item4 (Mean=4.72, SD=0.485), the fourth item with the highest mean is item3 (Mean=4.67, SD=0.526), and the fifth item with the highest mean is item1 (Mean=4.67, SD=0.511) and item2 is the last item with the lowest 4.62 and 0.518 of Mean and Standard deviation respectively.

Table 13: Description of Perceptions

Items No	Statements	Mean	Std. Deviation	Interpretation
Item1	Making parks with public buildings and schools	4.75	0.46	Very high mean and homogeneity of responses
Item2	Making parks with relocated site of factory	4.73	0.516	Very high mean and heterogeneity of responses
Item3	Conservation of wet and dry field as a green space	4.79	0.416	Very high mean and homogeneity of responses
Item4	Making parks with legally protected trees and empty lots in the neighborhood	4.78	0.433	Very high mean and homogeneity of responses

Item5	Making waterfront and ecological parks with surrounding areas of river and reservoir	4.67	0.547	Very high mean and heterogeneity of responses
Item6	Public open space should be a free place for people to be accessed.	4.92	0.275	Very high mean and homogeneity of responses
Item7	The physical elements and activities at public open space should offer many benefits to quality of life: health, social interaction and economic value	4.88	0.378	Very high mean and homogeneity of responses
Item8	Public open spaces should be biggest shopping malls	4.94	0.243	Very high mean and homogeneity of responses

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

The results in the table13 introduced the perceptions of people on urban open spaces. Table13 shows that Item8 of the perceptions of people on urban open space has the highest Mean (4.94, SD=0.243), followed by item6 (Mean=4.92, SD=0.275), and the third item with the highest mean is item7 (Mean=4.88, SD=0.378), the fourth item with the highest mean is item3 (Mean=4.79, SD=0.416), and the fifth item with the highest mean is item4 (Mean=4.78, SD=0.433) and item5 is the last item with the lowest 4.67 and 0.547 of Mean and Standard deviation respectively.

Table 14: Correlation matrix

	1	2	3	4	5	6	7
Frequency (1)	1.000						
Social Welfare (2)	-.163**	1.000					
Satisfaction (3)	.243**	-.123*	1.000				
Tax Revenue (4)	-.142*	.420**	-.217**	1.000			
Job creation (5)	-.143*	.490**	-.251**	.684**	1.000		
Needs (6)	-0.060	.235**	0.007	.208**	.310**	1.000	
Perception (7)	-0.047	.247**	0.007	.264**	.240**	.651**	1.000
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

1=frequency, 2= Social welfare, 3=Satisfaction, 4=Tax revenues, 5=Jobs creation, 6=Needs and 7=Perceptions.

The results in Table 14 revealed that there is negative and weak correlation between contribution and frequency at 1% level (r=-0.163, p<0.01), and there is weak and positive correlation between satisfaction and frequency at 1% level (r=0.243, p=0.01), it also indicates that there is a weak and negative correlation between satisfaction and contribution at 5% level (r=-0.123, p=0.01). It also reveals a weak and negative correlation between tax revenues and frequency at 5% level (r=-0.142, p=0.01), and also indicates a weak and positive correlation between tax revenues and social welfare at 1% level (r=0.420, p=0.01) and also reveals a weak and negative correlation between tax revenues and satisfaction at 1% level (r=-0.217,

p=0.01). It presents a weak and negative correlation between jobs creation and frequency at 5% level (r=-0.143, p=0.01) and also indicates a weak and positive correlation between jobs creation and social welfare at 1% level (r=0.490, p=0.01), also reveals a weak and negative correlation between jobs creation and satisfaction at 1% level (r=-0.251, p=0.01), also presents a weak and positive correlation between jobs creation and tax revenues at 1% level (r=0.684). There is a weak and positive correlation between needs and social welfare at 1% level (r=0.235, p=0.01), also indicates a weak and positive correlation between needs and ax revenues at 1% level (r=0.208, p=0.01) and also presents a weak and positive correlation between needs and jobs creation at 1% level (r=0.310, p=0.01). Lastly, there is a weak and positive correlation between perceptions and social welfare at 1% level (r=0.247, p=0.01) and also presents a weak and positive correlation between perceptions and tax revenues at 1% level (r=0.264, p=0.01) and also indicates a weak and positive correlation between perceptions and jobs creation at 1% level (r=0.240, p=0.01) and reveals that there is a weak and positive correlation between perceptions and needs at 1% level (r=0.651, p=0.01).

4.3.3. Regression

In this section, it will be presented the results on the contribution of predictors such as frequency, social welfare, satisfaction, tax revenues, jobs creation, age, sex, residence and education on perception considered as dependent variable. Using the method of stepwise, the results in Table 10a will give us the extent to which the predictors explained the dependent variable and tested the autocorrelation using Durbin-Watson, Table 10b will be indicating if the model fit the data and Table 10c will be presenting the coefficients of the regression lines.

In addition, in this section, it will be tested the Null Hypothesis that states that the citizen perceptions on open spaces are not affected by frequency, social welfare, satisfaction, tax revenues, job creation, age, sex, residence and education.

Table 15a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.409a	0.167	0.164	0.21943	
2	.441b	0.194	0.188	0.21622	1.765
a. Predictors: (Constant), Tax Revenue					
b. Predictors: (Constant), Tax Revenues, Social welfare.					
c. Dependent Variable : Perception					

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 15a shows that the variations of citizen perceptions on urban open spaces could be explained by two variables such as tax revenues and Social welfare, However, the contribution of tax revenue is estimated to 16.4% (Adj R-square=0.164) while both tax revenues and social welfare contribute to the variations of

the perceptions at 18.8% (Adj R-square=0.188). Furthermore, from the results in Table a, the value of Durbin-Watson is 1.765 which is closed to 2 that implies that there is autocorrelation in the model.

Table 16b: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.453	1	2.453	50.950	.000[b]
	Residual	12.230	254	0.048		
	Total	14.684	255			
2	Regression	2.856	2	1.428	30.544	.000[c]
	Residual	11.828	253	0.047		
	Total	14.684	255			
a. Dependent Variable: perception						
b. Predictors: (Constant),Tax Revenues						
c. Predictors: (Constant), Tax Revenues ,Social welfare						

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 16b presents for model 1 (F=50.950, p=0.000<0.05) that indicated that the model is fitting the data and model 2 (F=30.544, p=0.000<0.05) that indicated also that the model 2 is good and it fits the data. Given the p-values p=0.000<0.05, in both models, the null hypothesis that states that the citizen perceptions on urban open spaces are not affected by frequency, social welfare, satisfaction, tax revenues, job creation, age, sex, residence and education was rejected only for two variables such present the social welfare and tax revenues.

Table 17c: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.343	0.206		16.241	0.000		
	Tax Revenues	0.308	0.043	0.409	7.138	0.000	1.000	1.000
2	(Constant)	3.133	0.215		14.576	0.000		
	Tax Revenues	0.235	0.049	0.312	4.773	0.000	0.745	1.342
	Social welfare	0.121	0.041	0.192	2.935	0.004	0.745	1.342
a. Dependent Variable: perception								

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Model 1

The estimate line regression indicated that:

$$\hat{y} = 3.343 \; + 0.308 * x_1$$

Where $\hat{y}$ represents the excepted **perception**s and x_1 represents **Tax Revenues**.

If ceteris paribus, if Tax Revenues increase to 1%, then citizens perceptions will increase to 31% .

Since p=0.000<0.05 for Tax revenues, Ho that states that the citizen perceptions on urban open spaces are not affected tax revenues is rejected

Model 2

The estimate line regression indicated that:

$$\hat{y} = 3.133 \ + 0.235 * x_1 + 0.121 x_2$$

Where $\hat{y}$ represents the excepted **perception**s, x_1 represents **Tax Revenues and x2** represents **social welfare.**

If ceteris paribus, if Tax Revenues increase to 1%, then citizens perceptions will increase to 24%,
If ceteris paribus, if social welfare increase to 1%, then citizens perception's will increase to 12%.
Since p=0.000<0.05, H_o that states that the citizen's perceptions on urban open spaces are not affected by social welfare and tax revenues is rejected.
Furthermore, since the VIF= 1 <10, there is no multicolinearity.

Summary

Wasade (2018) shows that "Public open space is a free place for people to be accessed. Everybody is free to do many various activities at the place. The physical elements and activities of public open space offer many benefits to quality of life: health, social interaction and economic value. The quality of public open space can be judged by how long people stay at such places and the range of activities carried out there. The quality of such space relates to its usability and people's need and perception. If it is not usable and perceived better by the public, it will not become useless and unsuccessful"(Wasade, 2018)

Kothernscz (2017) says that "Societal benefits supplied by urban green spaces (UGS) to city dwellers are vital to maintain and increase urban citizens' quality of life (QoL). UGS are essential in mitigating high summer temperatures of their grounds and nearby surroundings, and are vital in air pollution removal and noise abatement. They are also highly regarded for positive effects in promoting their visitors' physical and mental health and providing opportunities for social interactions and recreation. The QoL benefits derived from UGS are increasingly central to urban society and, therefore, understanding visitors' attitudes and perceptions of UGS is essential for informed urban planning"(Kothencz *et al.*, 2017)

Daneshpour and Mahmoodpour (2009) say that "It has been said that if public spaces achieve satisfactory results in the tripartite above mentioned areas, "they can make a significant contribution in enhancing social interaction and reduce exclusion rooted on social class, ethnicity, age or gender. The importance of open spaces in addressing these issues affects planning decision"(Daneshpour and Mahmoodpour, 2009)

However, Mahmoudi and Maller (2018) shows that "Previous research has found that people hold complex and uncertain 'half sought and half feared' perceptions of green spaces (Jim & Shan, 2013, p. 123. While residents value their benefits, they sometimes associate green spaces with feelings of insecurity and crime. Residents who have positive perceptions of green spaces and find them pleasant and safe are more likely to use them"(Mahmoudi Farahani and Maller, 2018)

Table 17c: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.350[a]	0.122	0.119	0.29931	2.092
a. Predictors: (Constant), Jobs creation					
b. Dependent Variable: Needs					

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 17c shows that the variations of citizen needs on urban open spaces could be explained by one variables such as jobs creation, However, the contribution of jobs creation is estimated to 11.9% (Adj R-square=0.119). Furthermore, from the results in Table 17c, the value of Durbin-Watson is 2.092 which is equal to 2 and that imply that there is autocorrelation in the model.

Table 18d: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.172	1	3.172	35.409	.000[b]
	Residual	22.755	254	0.090		
	Total	25.927	255			
a. Dependent Variable: Needs						
b. Predictors: (Constant), Jobs creation						

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Table 18d presents for model 1 (F=35.409, p=0.000<0.05) that indicated that the model is fitting the data. Given the p-values p=0.000<0.05, in the model, the null hypothesis that states that the citizen needs on urban open spaces are not affected by frequency, social welfare, satisfaction, tax revenues, job creation, age, sex, residence and education were rejected only for one variable such as jobs creation.

Table 19: Coefficients

		Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	3.030	0.284		10.653	0.000		
	Jobs creation	0.361	0.061	0.350	5.951	0.000	1.000	1.000
a. Dependent Variable: Needs								

Source: Primary Data collected from 1st April, 2019 to 15th April, 2019

Model 1

The estimate line regression indicated that:

$$\hat{y} = 3.030 \quad + 0.361 * x_1$$

Where $\hat{y}$ represents the excepted **needs** and x_1 represents **jobs creation**.

If ceteris paribus, if jobs creation increases by 10%, then citizens needs will increase to 3.61%.

Since p=0.000<0.05 for jobs creation, Ho that states that the citizen's needs on urban open spaces are not affected job creation is rejected.

Furthermore, since the VIF= 1 <10, there is no multicolinearity.

Summary

UN Habitat (2015) describes that "Open spaces helps economic development: A good network of public space has impact on economic productivity as it improves the efficiency of the supply chain, reducing production costs and promoting the mobility of goods and people. Public space provides important benefits to all forms of business, both formal and informal. As cities increasingly compete with one another to attract investment, good streets, market places, parks, squares, gardens and other public facilities becomes a vital business and marketing tool. Furthermore, good public spaces can increase the land values of the adjacent properties. Entrepreneurs, large or small, are attracted to locations that offer well-designed, well-managed public places and these in turn attract customers, employees and services"(UN Habitat, 2015).

4.4. Qualitative analysis

Since this study was concerned to use human behaviors, feelings and attitudes (Draper, 2004) has provided theoretical and philosophical bases for qualitative data analysis. (Benítez, Van de Vijver and Padilla, 2019) has described interpretative phenomenology analysis and thematic analysis as methods of analyzing individual interview data. Before getting deeply into data analysis, the following themes were identified:

Theme 1: Importance of Urban Open spaces

It should be noticed that the responses of the majority of the respondents converge to say that the open spaces are extremely important and they have suggested seeing mapping of the cities with more opens spaces. For instance, it was asked to Ms. Q the following question: "Do you think that open spaces are important for your city?"

Answer from Ms. Q sates that the open spaces are very important. MS. Q added that open spaces are not only important for citizens but also important for Government by generating tax revenues for the development and for creating jobs opportunities for its population. The same answer has been received from the majority of the interviewed. It should be noticed that the responses of the majority of the respondents corroborated to the answer of Ms. Q. These responses were in line with what we have found in quantitative approach that open spaces contribute to social welfare and for generating income.

Theme 2: Satisfaction of urban Open spaces

It was noted that the responses of the majority of the respondents were that the open spaces in Rwanda are not sufficient. This question was asked to Mr. R that "Do you think that urban open spaces you have are sufficient?"

Answer from Mr. R states that No, they are not sufficient and he added that open spaces are somewhat new in the ears of most Rwandese especially those that have not travelled to USA or European countries where these open spaces are very common not only in the sense of using them but in the sense of contribution to economy of these countries. He said in addition that Rwanda is the country that is building itself at this point in time and that this is the real time for us to develop these open spaces. Majority of the interviewed had the same opinions but some added that even for the open spaces we already have, people do not use them most often. These opinions are almost similar with the results got in quantitative approach that open spaces are not sufficient, only markets are often used.

Theme 3: Challenges of urban Open spaces

It should be well-known that the responses of the majority of the respondents opinioned the challenges of open spaces in Rwanda. This question was asked to Mr. S that "what are the challenges do you face to increase the number of urban open spaces?"

Answer from Mr. S States that among the challenges of urban open spaces in Rwanda is that the master plan of the Rwandan cities regards to open spaces brought into existence when the citizens are already settled in the manner that is not properly organized according to the master plan and it is a challenge to relocate them all and he added that the resources are not enough as the country is still developing in many areas and there is no policy specifically for open spaces to enforce the development of these open spaces. He concluded that there is lack of enough information and experts as far as these open spaces are concerned. Most of the interviewed respondents see the challenges as Mr. S.

Theme 4: Awareness and benefits of urban Open spaces

It should be noticed that most of the respondents stated that there is less awareness of open spaces and their benefits in Rwanda. This question was asked to Ms. U that "Do you think that urban citizens are aware of open spaces and their benefits?"

Answer from Ms. U states that I think they do not have much knowledge about open spaces, she continued by saying that I think open space is not our term I think it was coped from the developed countries such as USA, Europe and others which I believe that it is still new to the urbanities of Rwanda and for this reason they are not aware much of their benefits but there is a hope according to the master plan of Kigali city that open spaces are extremely looked at among the other areas that are developing rapidly.

Theme 5: Urban Open spaces as a core feature of the urban way of life

The majority of the respondents covered stated that public spaces are extremely a core feature of urban way of life. For instance, this question was asked to Mr. P that "Do you agree that public space is a core feature in the concept of the urban way of life and democratic governance?"

Answer from Mr. P, he responded that to me I do not understand why the government did not solve this issue, given that the open spaces are part of healthy life and urban way of life. He added that yes, I agree that public spaces are core feature because they change urban way of life in the way that the life of citizens get better through getting more jobs opportunities from open spaces, through getting more income generated by these open spaces, through entertainment by using these open spaces such as parks, beaches, zoos, recreation and leisure places, stadium among others. He concluded that more studies state that people like to spend more time outdoors than indoors and added that this is very important in reducing stress, depression and loneliness and this is very much in line with the results found in quantitative approach that urban open spaces contribute to a healthy life.

CHAPTER FIVE: MAJOR FINDING, CONCLUSSIONS AND SUGGESTIONS

5.1. Introduction

The determination of this chapter of findings, recommendations, and general conclusions was to convey all the findings of the research in the line with the problem statement, hypothesis, objectives of the research and research questions. Overall conclusions of the findings of this study articulate the broad assessment of what the researcher revealed for the period of the study. It, therefore, grips the researcher's assessment of the study. It proposes suggestions and recommendations on certain areas that are probably to be found necessary in contribution of urban open spaces on social welfare and tax revenues.

5.2. Major findings

5.2.1. Quantitative approach

Basing on the problem statement which is the contribution of urban open spaces on social welfare and tax revenues in Rwanda, much have been found and here are the various findings;

Table5 shows that there were more respondents 96 (37.5%) in age category 30-39. This table also introduces that Male were the most respondents 139 (54.3%).

 Table 6 reveals that there were more 106 (41.4%) respondents with bachelor's degree, followed by 102 (39.8%) respondents who went to secondary.

The results in Table 6 showed that there were more respondents 134 (52.3%) in the income category of 100000-499999.

Table 7 presents the means and standard deviations on how people frequented the urban spaces. Based the results in Table 7, majority (mean=2.51, SD=1.04) of the respondents indicated that the market is often used.

Table 8 indicates the means and Standard deviations of contributions of urban open spaces on social welfare. The Table introduces that item10 of the contributions of urban open spaces on social welfare has the most (Mean=4.82, SD=0.45.

The results in Table 9 revealed the Means and Standard deviations of how people are satisfied with the Urban Open spaces. The Table introduces that item5 of the satisfaction of urban open spaces has the most highest (Mean=3.11, SD=1.106).

Table 10 represents the contributions of urban open spaces on Jobs creation. The Table 10 indicates that item2 of the contribution of urban open spaces on jobs creation has the most highest (Mean=4.85, SD=0.536).

The results in the Table 11 indicated the contributions of urban open spaces on Tax revenues. The table11 presents that item9 of the contribution of urban open spaces on tax revenues has the most highest (Mean=4.77, SD=0.458).

The results in the Table 12 presented the Needs of people on urban open spaces. The table12 reveals that item6 of the needs of people on urban open space has the most highest (Mean=4.89, SD=0.381).

The results in the Table13 introduced the perceptions of people on urban open spaces. Table13 shows that Item8 of the perceptions of people on urban open space has the highest Mean (4.94, SD=0.243).

Table 15a shows that the variations of citizen perceptions on urban open spaces could be explained by two variables such as tax revenues and Social welfare, However, the contribution of tax revenue is estimated to 16.4% (Adj R-square=0.164) while both tax revenues and social welfare contribute to the variations of the perceptions at 18.8% (Adj R-square=0.188). Furthermore, from the results in Table a, the value of Durbin-Watson is 1.765 which is closed to 2 that implies that there is autocorrelation in the model.

Model 1

The estimate line regression indicated that:

$$\hat{y} = 3.343 \quad + 0.308 * x_1$$

Where $\hat{y}$ represents the excepted perceptions and x_1 represents Tax Revenues.

If ceteris paribus, if Tax Revenues increase to 1%, then citizens perceptions will increase to 31% .
Since p=0.000<0.05 for Tax revenues, Ho that states that the citizen perceptions on urban open spaces are not affected tax revenues is rejected
Model 2

The estimate line regression indicated that:

$$\hat{y} = 3.133 \quad + 0.235 * x_1 + 0.121 x_2$$

Where $\hat{y}$ represents the excepted perceptions, x_1 represents Tax Revenues and x2 represents social welfare.

If ceteris paribus, if Tax Revenues increase to 1%, then citizens perceptions will increase to 24%,

If ceteris paribus, if social welfare increase to 1%, then citizens perception's will increase to 12%.

Since p=0.000<0.05, H_o that states that the citizen's perceptions on urban open spaces are not affected by social welfare and tax revenues is rejected.

Furthermore, since the VIF= 1 <10, there is no multicolinearity.

Wasade (2018) shows that "Public open space is a free place for people to be accessed. Everybody is free to do many various activities at the place. The physical elements and activities of public open space offer many benefits to quality of life: health, social interaction and economic value. The quality of public open space can be judged by how long people stay at such places and the range of activities carried out there. The quality of such space relates to its usability and people's need and perception. If it is not usable and perceived better by the public, it will not become useless and unsuccessful"(Wasade, 2018)

Kothernscz (2017) says that "Societal benefits supplied by urban green spaces (UGS) to city dwellers are vital to maintain and increase urban citizens' quality of life (QoL). UGS are essential in mitigating high summer temperatures of their grounds and nearby surroundings, and are vital in air pollution removal and noise abatement. They are also highly regarded for positive effects in promoting their visitors' physical and mental health and providing opportunities for social interactions and recreation. The QoL benefits derived from UGS are increasingly central to urban society and, therefore, understanding visitors' attitudes and perceptions of UGS is essential for informed urban planning"(Kothencz *et al.*, 2017)

Daneshpour and Mahmoodpour (2009) say that "It has been said that if public spaces achieve satisfactory results in the tripartite above mentioned areas, "they can make a significant contribution in enhancing social interaction and reduce exclusion rooted on social class, ethnicity, age or gender. The importance of open spaces in addressing these issues affects planning decision"(Daneshpour and Mahmoodpour, 2009)

However, Mahmoudi and Maller (2018) shows that "Previous research has found that people hold complex and uncertain 'half sought and half feared' perceptions of green spaces (Jim & Shan, 2013, p. 123. While residents value their benefits, they sometimes associate green spaces with feelings of insecurity and crime. Residents who have positive perceptions of green spaces and find them pleasant and safe are more likely to use them"(Mahmoudi Farahani and Maller, 2018)

Table 17c shows that the variations of citizen needs on urban open spaces could be explained by one variables such as jobs creation, However, the contribution of jobs creation is estimated to 11.9% (Adj R-square=0.119). Furthermore, from the results in Table 17c, the value of Durbin-Watson is 2.092 which is equal to 2 and that imply that there is autocorrelation in the model.

Table 18d presents for model 1 (F=35.409, p=0.000<0.05) that indicated that the model is fitting the data. Given the p-values p=0.000<0.05, in the model, the null hypothesis that states that the citizen needs on urban open spaces are not affected by frequency, social welfare, satisfaction, tax revenues, job creation, age, sex, residence and education were rejected only for one variable such as jobs creation.

Model 1

The estimate line regression indicated that:

$$\hat{y} = 3.030 \quad + 0.361 * x_1$$

Where $\hat{y}$ represents the excepted needs and x_1 represents jobs creation.

If ceteris paribus, if jobs creation increases by 10%, then citizens needs will increase to 3.61%. Since p=0.000<0.05 for jobs creation, Ho that states that the citizen's needs on urban open spaces are not affected job creation is rejected.

Furthermore, since the VIF= 1 <10, there is no multicolinearity.

UN Habitat (2015) describes that "Open spaces helps economic development: A good network of public space has impact on economic productivity as it improves the efficiency of the supply chain, reducing production costs and promoting the mobility of goods and people. Public space provides important benefits to all forms of business, both formal and informal. As cities increasingly compete with one another to attract investment, good streets, market places, parks, squares, gardens and other public facilities becomes a vital business and marketing tool. Furthermore, good public spaces can increase the land values of the adjacent properties. Entrepreneurs, large or small, are attracted to locations that offer well-designed, well-managed public places and these in turn attract customers, employees and services"(UN Habitat, 2015).

Open spaces are not only important for citizens but also important for Government by generating tax revenues for the development and for creating jobs opportunities for its population.

The challenges are that the master plan of the Rwandan cities which has these open spaces in its mandate came into existence when the citizens are already settled in the manner that is not properly organized according to the master plan and it is a challenge to relocate them and he added that the resources are not enough as the country is still developing in many areas and there is no policy specifically for open spaces to enforce the development of these open spaces. He concluded that there is lack of enough information and experts as far as these open spaces are concerned. Most of the interviewed respondents see the challenges in that angle.

5.2.2. Qualitative approach

Answer from Ms. Q sates that the open spaces are very important. MS. Q added that open spaces are not only important for citizens but also important for Government by generating tax revenues for the development and for creating jobs opportunities for its population. The same answer has been received from the majority of the interviewed. It should be noticed that the responses of the majority of the respondents corroborated to the answer of Ms. Q. These responses were in line with what we have found in quantitative approach that open spaces contribute to social welfare and for generating income.

Answer from Mr. R states that No, they are not sufficient and he added that open spaces are somewhat new in the ears of most Rwandese especially those that have not travelled to USA or European countries where these open spaces are very common not only in the sense of using them but in the sense of contribution to economy of these countries. He said in addition that Rwanda is the country that is building itself at this point in time and that this is the real time for us to develop these open spaces. Majority of the interviewed had the same opinions but some added that even for the open spaces we already have, people do not use them most often. These opinions are almost similar with the results got in quantitative approach that open spaces are not sufficient, only markets are often used.

Answer from Mr. S States that among the challenges of urban open spaces in Rwanda is that the master plan of the Rwandan cities regards to open spaces brought into existence when the citizens are already settled in the manner that is not properly organized according to the master plan and it is a challenge to relocate them all and he added that the resources are not enough as the country is still developing in many areas and there is no policy specifically for open spaces to enforce the development of these open spaces. He concluded that there is lack of enough information and experts as far as these open spaces are concerned. Most of the interviewed respondents see the challenges as Mr. S.

Answer from Ms. U states that I think they do not have much knowledge about open spaces, she continued by saying that I think open space is not our term I think it was coped from the developed countries such as USA, Europe and others which I believe that it is still new to the urbanities of Rwanda and for this reason they are not aware much of their benefits but there is a hope according to the master plan of Kigali city that open spaces are extremely looked at among the other areas that are developing rapidly.

Answer from Mr. P, he responded that to me I do not understand why the government did not solve this issue, given that the open spaces are part of healthy life and urban way of life. He added that yes, I agree that public spaces are core feature because they change urban way of life in the way that the life of citizens get better through getting more jobs opportunities from open spaces, through getting more income generated by these open spaces, through entertainment by using these open spaces such as parks, beaches, zoos,

recreation and leisure places, stadium among others. He concluded that more studies state that people like to spend more time outdoors than indoors and added that this is very important in reducing stress, depression and loneliness and this is very much in line with the results found in quantitative approach that urban open spaces contribute to a healthy life.

5.3. Conclusion

The research findings, therefore, fittingly establish the objectives of the study by exploring and examining the contributions of urban open spaces on social welfare and tax revenues in Rwanda – the finds indicated that the market is often used, followed by recreation and leisure places, and then beaches. Open spaces promote a city as tourists' destination and increase property value were the most items of open spaces to contribute on social welfare. Park as an open space increases property tax revenue and it is true that properties that are in proximity to parks increase value were the 2 items the most to contribute on jobs creations. It has been examined that a lot of job opportunities have been created around the beaches and it boosts the economy among the citizens and of the country and it has been discovered that the more the airports, the more people that are coming in from outside, the more jobs created, the more tax revenues coming in, were items of contribution of open spaces on Tax revenues. Open spaces are not only important for citizens but also important for Government by generating tax revenues for the development and for creating jobs opportunities for its population.

The challenges are that the master plan of the Rwandan cities which has these open spaces in its mandate came into existence when the citizens are already settled in the manner that is not properly organized according to the master plan and it is a challenge to relocate them and he added that the resources are not enough as the country is still developing in many areas and there is no policy specifically for open spaces to enforce the development of these open spaces. He concluded that there is lack of enough information and experts as far as these open spaces are concerned. Most of the interviewed respondents see the challenges in that angle.

Open spaces in Rwanda because they are new, can be thought of as the biggest project that can funded or invested in and expecting to get the returns in a short period of time and in a big quantity.

5.4. Suggestions

Basing on the findings, it is very clear that open spaces contribute to social welfare and tax revenues, therefore, as researcher I would suggest that both private and public sectors must put more emphasis on setting up, renovating, and maintenance of open spaces as they contribute in living a healthy life through

using open spaces like beaches, parks, zoos, recreation and leisure places, markets, stadiums, airports, gyms among others and by generating income to people and to the whole nation.

This study suggests that a policy should be enforced for the development of master plan and better planning of urban open spaces of Rwandan cities with regard to the development of urban open spaces in the capital and other cities of Rwanda. For instance, the master plan of the Rwandan cities regards to open spaces brought into existence when the citizens are already settled in the manner that is not properly organized according to the master plan and it is a challenge.

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APPENDIX

Section 1: Socio-Demographic factors

1. 10-19   2. 20-29   3. 30-39   4. 40-49   5. 50-59   6. 60+

1.2 Sex:

1. Male   2. Female

1.3 Period of residence

1. 1-3   2. 3- 6   3. 6-10   4. 10-20   5. 20+

1.4 What is your level of education?

1. None   2. Primary   3. Secondary   4. Bachelor   5. Master   6. PhD

1.5 How much is your Monthly income (Rwf)

1.0-999   2.1000-9999   3.10000-99999   4. 100000-499999   5. 500000+

Section 2: Contribution of urban spaces to social welfare

For the purposes of this study, please consider urban open space to mean public spaces such as markets, airports, recreation & leisure places, parks, zoo, bus stations (transportation), stadium, beaches, libraries, Pubic gyms and street parking.

No	Statements	Circle the right digit that correspond to your preference, 1= Hardly use; 2= A couple of times a week; 3= three to four times a week 4=A couple of times a month 5=Almost every day				
FR1	I often use market	1	2	3	4	5
FR2	I often use airport	1	2	3	4	5
FR3	I often use recreation& leisure places	1	2	3	4	5
FR4	I often use Parks	1	2	3	4	5
FR5	I often use Bus Station	1	2	3	4	5
FR6	I often use Zoo	1	2	3	4	5
FR7	I often use Public Library	1	2	3	4	5
FR8	I often use Stadium	1	2	3	4	5
FR9	I often use Beaches	1	2	3	4	5
FR10	I often use Public Gyms	1	2	3	4	5

NO	Statements	Circle the right digit that correspond to your preference 1= Strongly disagree; 2= Somewhat disagree; 3= Neither agree nor disagree 4= Somewhat agree 5= Strongly agree				
CTB1	I know that open spaces reduce stress	1	2	3	4	5
CTB2	Open spaces rejuvenates people	1	2	3	4	5
CTB3	Open spaces provide peacefulness	1	2	3	4	5
CTB4	Open spaces provide with people good mental health	1	2	3	4	5
CTB5	Open spaces provide with people good physical health	1	2	3	4	5
CTB6	Open spaces consolidate social integration	1	2	3	4	5
CTB7	Open spaces increase interaction among neighbors	1	2	3	4	5
CTB8	Open spaces increase interaction with friends and new friends	1	2	3	4	5
CTB9	Open spaces create air purification by trees that reduces cost of pollution prevention	1	2	3	4	5
CTB10	Open spaces promote a city as tourist destination	1	2	3	4	5
CTB11	Open spaces increase property value	1	2	3	4	5
CTB12	Open spaces used as festival places	1	2	3	4	5
CTB13	Open spaces Promotes equality	1	2	3	4	5
CTB14	Open spaces improves the urban environment	1	2	3	4	5
CTB15	It Strengthens economic prosperity and employments in urban areas	1	2	3	4	5
CTB16	They Provide leisure space	1	2	3	4	5
CTB17	They Give mental stability	1	2	3	4	5
CTB18	They Reduce air and environmental pollution	1	2	3	4	5
CTB19	They Make scenery beautiful	1	2	3	4	5
CTB20	They Maintain healthy natural ecological state	1	2	3	4	5
CTB21	They Prevent indiscriminate urban development	1	2	3	4	5
CTB22	They Raise real estate prices in the surrounding area	1	2	3	4	5
CTB23	They Prevent natural disasters	1	2	3	4	5
CTB24	Parks decrease health costs and support productivity, both through encouraging exercise and reducing air pollution	1	2	3	4	5
CTB25	A park's plants absorb air pollutants such as nitrogen dioxide, sulfur dioxide, carbon monoxide and ozone Particulates, reducing the impacts they have on peoples' cardiovascular and respiratory systems.	1	2	3	4	5
CTB26	Open spaces provide low or no-cost recreation and encourage exercise.	1	2	3	4	5

		Statement	Circle the right digit that correspond to your preference 1= Very Unsatisfied; 2= Unsatisfied; 3= Neutral 4= satisfied 5= Very satisfied				
CTB27		They bring people into nature, make outdoor recreation more accessible, and provide safe and attractive places for individuals and families to exercise and play.	1	2	3	4	5

	Statement	Circle the right digit that correspond to your preference 1= Very Unsatisfied; 2= Unsatisfied; 3= Neutral 4= satisfied 5= Very satisfied				
SF1	The satisfaction of public markets can reconnect local economies to communities, while improving public health and supporting local food systems.	1	2	3	4	5
SF2	When airports are many creates tourism opportunities in terms of easy connections and increases on economy	1	2	3	4	5
SF3	The availability of recreation& leisure places provide safe and attractive places for individuals and families to exercise and play.	1	2	3	4	5
SF4	The availability of Parks ensures of an increase in tourism industry.	1	2	3	4	5
SF5	The satisfaction of Bus Station eases people to connect easily in terms of traveling	1	2	3	4	5
SF6	The existence of Zoos in town makes life easy when people visit them	1	2	3	4	5
SF7	The existence of Public library is to provide better and immediate services to their users. The levels of success of these libraries are based on the level of satisfaction of their users.	1	2	3	4	5
SF8	Sports have long been an integral part of our culture and therefore having stadiums in town is worth it.	1	2	3	4	5
SF9	Beach is said to be one of famous tourism destination in towns visited by many domestic and foreign tourists.	1	2	3	4	5
SF10	Overall how satisfied you feel with your decision to exercise in the public gyms	1	2	3	4	5

Section 3: Contribution of the urban spaces to jobs creation and tax revenues

NO	Statement	Circle the right digit that corresponds to your preference 1= Not very much; 2= To a small degree; 3= Fairly ; 4=To a large degree ; 5= To a very large degree				
TR1	It is true that properties that are in proximity to parks increase value	1	2	3	4	5
TR2	Park as an open space increases property tax revenue	1	2	3	4	5

JB1	Parks draw visitors from near and far, bringing tourism revenue to local restaurants, hotels, snack shops, and stores	1	2	3	4	5
JB2	Parks, stadiums host festivals, concerts and athletics events, and bringing additional boosts to the local economy.	1	2	3	4	5
JB3	They say that modern markets in towns create more job opportunities to urbanities	1	2	3	4	5
JB4	It has been said by many that the more the airports, the more people coming in from outside, the more jobs created, the more tax revenues coming in.	1	2	3	4	5
JB5	The recreation and leisure places create jobs like Convention services, Event planning companies, Corporate employee services, Hotels, Resorts, Theme/amusement parks, Casinos, Country clubs, Motor home parks, Camp grounds, Boating/marina facilities, Second home communities, Travel/tourism companies	1	2	3	4	5
TR3	It is believed that Parks are the venues of tourists!	1	2	3	4	5
JB6	Having many bus stations creates more opportunities such as jobs, easing transport and having many people coming to town because transport means are available.	1	2	3	4	5
TR4	Zoos attract various people to come to visit; more jobs are created such as restaurants, hotels, markets and create tax revenues to the city.	1	2	3	4	5
JB7	The availability of Public libraries reminds people to go to visit, read books and relax a bit.	1	2	3	4	5
JB8	Stadium projects generated positive employment impacts on local area real GDP either during or post-construction.	1	2	3	4	5
JB9	A lot of job opportunities have been created around the beaches and it boosts the economy	1	2	3	4	5
JB10	People build restaurants, coffee shops nearby public gyms.	1	2	3	4	5
TR5	Creating well planned parks and preserving sufficient land for them can generate financial returns that are often many times greater than the money initially invested into the project, even when maintenance costs are factored in	1	2	3	4	5

		1	2	3	4	5
TR6	Companies often choose to locate in communities that offer amenities such as parks as a means of attracting and retaining top-level workers.	1	2	3	4	5
JB11	Parking in town generate income, it is clear that for every parking in town you pay some money, it creates job opportunities and boost tax revenues by collecting that money	1	2	3	4	5

Section 4: Needs and perception

Statement		Circle the right digit that correspond to your preference 1= Strongly disagree; 2= Somewhat disagree; 3= Neither agree nor disagree 4= Somewhat agree 5= Strongly agree				
ND1	Expanding pedestrian paths	1	2	3	4	5
ND2	Expanding bicycle paths	1	2	3	4	5
ND3	Greening rooftop, walls of building and fence	1	2	3	4	5
ND4	Expanding natural parks in forest areas	1	2	3	4	5
PC1	Making parks with public buildings and schools	1	2	3	4	5
PC2	Making parks with relocated site of factory	1	2	3	4	5
PC3	Conservation of wet and dry field as a green space	1	2	3	4	5
PC4	Making parks with legally protected trees and empty lots in the neighborhood	1	2	3	4	5
PC5	Making waterfront and ecological parks with surrounding areas of river and reservoir	1	2	3	4	5
ND5	Making parks with areas of cultural assets	1	2	3	4	5
PC6	Public open space should be a free place for people to be accessed.	1	2	3	4	5
ND6	Everybody should be free to do many various activities at the place.	1	2	3	4	5
PC7	The physical elements and activities at public open space should offer many benefits to quality of life: health, social interaction and economic value	1	2	3	4	5
PC8	Public open spaces should be biggest shopping malls	1	2	3	4	5

Section 5: Challenges that are facing the City of Kigali to build the urban spaces to satisfy the social welfare, jobs creation and tax revenues.

1. Do you think that open spaces are important for your city?
2. Do you think that urban open spaces you have are sufficient?
3. What are the challenges do you face to increase the number of urban open spaces?
4. Do you think that urban citizens are aware of open spaces and their benefits?
5. Do you agree that Public space is a core feature in the concept of the urban way of life and democratic governance?