



**UNIVERSITY OF NAIROBI
SCHOOL OF THE BUILT ENVIRONMENT**

**BRINGING LIFE IN URBAN PUBLIC OPEN SPACE:
RWANDESE 'AKARUBANDA' CONCEPT.**

By

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DECLARATION

I **Josephine Mwangeli Malonza**, hereby declare that this research is my original work and has not been presented for a degree in any other university.

Sign:

Date:.....

Declaration by the Supervisors

This research has been submitted for examination with our approval as University of Nairobi Supervisors.

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Date:.....

DEDICATION

To my three beloved daughters, who have taught me how to love deeply.

Noella, Mary and Magdalene, I respectfully dedicate this work to you.

You all made me a much better mother and a more successful career woman.

Thanks for making my life complete.

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ABBREVIATIONS AND ACRONYMS

CBD	Central Business District
CFZ	Car Free Zone
CoK	City of Kigali
DDP	District Development Plan
EAC	East African Community
EDPRS	Economic Development and Poverty Reduction Strategy
EICV	(<i>Enquête Intégrale sur les Conditions de Vie des Ménages</i>) Integrated Household Living Conditions Survey
GIS	Geographical Information System
GOR	Government of Rwanda
LTRP	Land Tenure Regularization Program
POS	Public Open Space
MDG	Millennium Development Goals
MINAGRI	Ministry of Agriculture of Rwanda
MININFRA	Rwanda Ministry of Infrastructure
NISR	National Institute of Statistics of Rwanda
NUA	New Urban Agenda
NUP	National Urbanisation Policy
OSC	One Stop Centre
RC	Rugugiro's compound
RDB	Rwanda Development Board
REMA	Rwanda Environment Management Authority
RHA	Rwanda Housing Authority
RUDP	Rwanda Urban Development Plan
SEZ	Special Economic Zone
UPOS	Urban Public Open Space
YC	Yousouf's Courtyard
YCN	Yousouf's Courtyard and Node

COMMON TERMS USED

<i>Akarubanda</i>	Rwandan traditional public open space
<i>Imbuga ngari</i>	Public open space
<i>Imbuga</i>	Front yard
<i>Igikari</i>	Backyard
<i>Umurera</i>	Home
<i>Inzu</i>	House
<i>Agatabo</i>	House entrance lobby
<i>Nyakatsi</i>	Thatch roof
<i>Irembo</i>	Entrance portal
<i>Igipangu</i>	Boundary Fence
<i>Ubustani</i>	Garden
<i>Inzira</i>	Walkway
<i>Igiti</i>	Tree
<i>Umunyinya</i>	Huge acacia tree
<i>Iriba</i>	Water well
<i>Umuriro</i>	Fire
<i>Umwami</i>	King
<i>Umutware</i>	Rich person
<i>Umuhinzi</i>	Farmer
<i>Umworozi</i>	Livestock keeper
<i>Gacaca</i>	Community courts
<i>Abunzi</i>	Grass root mediators
<i>Igitaramo</i>	Meeting around fireplace
<i>Icyiru</i>	Conflict resolution
<i>Guhingirana</i>	Farming together
<i>Amata</i>	Milk
<i>Inzoga</i>	Beer
<i>Ichayi</i>	Tea
<i>Ikahawa</i>	Coffee
<i>Kwa</i>	Belonging to

ABSTRACT

Public open space plays a vital role in the social life of communities throughout the world and forms an integral part of cities, so much that without it, it is said that human settlements would be unimaginable. The production and use of urban public open space (UPOS) varies from city to city, and from time to time due to the varied social, economic, political and environmental considerations that influence urban planning and development. This research is therefore concerned with bringing life into UPOS, taking a case of the Rwandese *akarubanda* concept.

In Rwanda, historically, public space dominated the landscape and had a great influence on the everyday living of Rwandans. Currently, however, the trend seems to have faded away, so much so that the capital city of Rwanda, Kigali, does not have sufficient UPOS, and the few existing spaces are empty and lacking life. In Rwanda, land scarcity, coupled with high population density, pose a multifaceted challenge to urban development. Land is continuously under so much pressure from rapid urbanisation that the domain of UPOS seems to have been neglected by urban planners and designers.

The selected cases for investigation helped to track the trajectory of public space in Rwanda in order to arrive at the concept of a pragmatic UPOS; which enabled the study to unpack '*what works*' and how its application could bring back life into Kigali's Public Open Space. A traditional case study; of the Nyanza King's palace was used to find out '*what was*', while a transformative case study; of the Biryogo courtyard and node was used to demonstrate '*what has changed*' and further, a contemporary case study of the Rujugiro palace and compound was used to envision '*what is*'.

Therefore, as part of exploring UPOS and determining interventions needed, the researcher used observation and mapping in order to determine the physical dimensions such as accessibility and linkages. Field surveys and interviews with

residents and planners were used in order to gain insight on the social dimensions such as the activities and user perceptions of UPOS. These empirical experiences, combined with literature and document review, provided an analytical framework for the assessment of selected case studies in Rwanda.

The findings of this study indicate that the current provision and use of public open space have been less successful in offering a new meaning to the residents of Kigali. There is a major weakness in the lack of the application of the *akarubanda* concept to inform the current planning and management of urban space in the city.

The researcher concludes that bringing life back to UPOS enhances their liveability, which is a crucial element in the structure of any city. Despite the challenges rapid urbanisation poses, the concept of *akarubanda* remains relevant and useful for people, time and space, because it allows the continuation of the transmission of societal values as well as offering a balanced democratic space for building relationships.

The knowledge that the study will contribute towards the relevance of indigenous knowledge is indeed timely, not only for Rwanda and the East African region, but also the continent of Africa and beyond, where there is an increasing interest for an investigation into pressing urban issues, with public space being a key component.

CHAPTER ONE

1 INTRODUCTION

1.1. Background of the research

Human beings are social in nature, they are created to live in communities and hence always look forward to the benefits of social development and prosperity. Their activities evolve over time with the aim of making life more manageable, practical and rewarding. These activities are varied given that human beings behave differently across the different socio-cultural backgrounds of religion, age, gender, geographical locations, etc. Socialization is indeed an important aspect for people, neighbourhoods, towns and cities.

Urban open spaces are fundamental to establishing the image of the twenty-first century city and contributing to the enjoyment that people, young and old, gain from urban life (Lang and Marshall, 2017). Indeed, urban public open space being social spaces that are generally open and accessible to the public, play a vital role in the social life of community. They are recognised as one of the key elements of urban morphology as they offer to the city, dynamics, which form a key component of on-going urban change. However, in contemporary cities, emerging processes of urban space creation and utilization seem to be creating both spatial and social shifts, which directly influence the way we define and use public open spaces. This has consequently led to the loss of life in urban public open spaces, a gap that this study aimed to investigate and suggest solutions for.

Since the earliest forms of civilization, public open space has been viewed as a major element of the urban structure. It defines the city's basic structure providing identity and meaning (Carmona, 2010; Lynch, 1984), as well as increases its attractiveness (Carr, Francis and Rivillin, 1992; Bentley et al, 1985). Other benefits that urban

public open spaces offer to the city are economic, health and environmental (Gehl and Gemzoe, 1996; Madanipour, 2003; Wooley, 2005).

The research focus, Rwanda, is a small landlocked country located in Central-East Africa as illustrated in Figure 1.1 and covering an area of 26,338 km². It shares borders with Burundi to the South, Uganda to the North, Tanzania to the East and the Democratic Republic of Congo to the west.



Figure 1.1: The location of Rwanda.

Source: Maps of the World, Accessed 26.03.2016

Rwanda is synonymously referred to as the land of a thousand hills. This is because a hill is beyond just a landscape feature. In ancient Rwanda, every hilltop was an important social space. The geographical location of public space and its strong relationship with its surroundings was key in the creation and use of the public open space. This extended to the courtyards of the homes of rich people, which also acted as public spaces, while the huge acacia trees and watering spots in the valleys, were also valued as important meeting spaces.

In the Rwandan context, *Akarubanda*, a word derived from two vernacular words *aka* (meaning for) and *rubanda* (meaning the people), translates to ‘traditional public open space’.

Kigali, the capital city of Rwanda covers an area of 738 km² and is believed to be the most densely populated country in Africa, given its growth rate of about 6 per cent per annum (MININFRA, 2008). **Figure 1.2** demonstrates Kigali's spatial growth between 1979 and 2012.

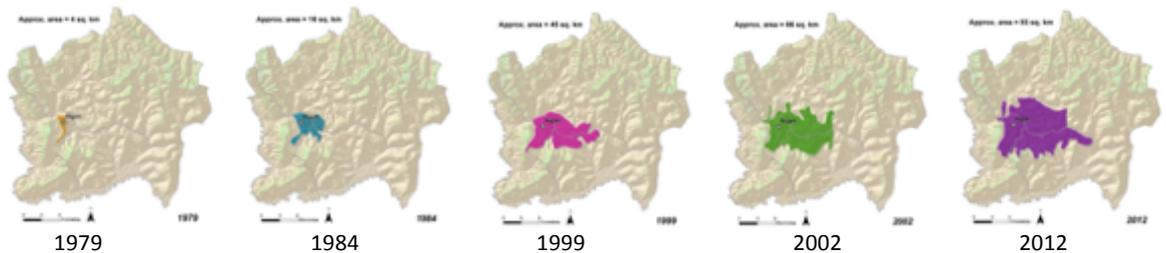


Figure 1.2: Kigali's spatial growth 1979-2012.

Source: REMA, 2016 with enhancements for clarity by author.

Until independence in 1962, the urban perimeter of Kigali was limited to the urban area. However, since then, the city has undergone several territorial expansions in line with different city plans and administrative reforms realised in efforts to standardise the administration of urbanising areas and to limit informal settlement (Manirakiza, 2014). From the 1975's *Commune Urbaine de Nyarugenge*, created after a spontaneous expansion of boundaries for the post-colonial city of Kigali, to the 1990's *Préfecture de la Ville de Kigali (PVK)* and 2000's *Mairie de la Ville de Kigali (MVK)*, on a territory of 314 km². The administrative reform of 2005 gave the city its current entities, which have resulted into the current City of Kigali covering an area of 738 km². The city limits currently include additional urban as well as rural areas, as opposed to the period before 2005, when the city was contained only in an urban area (Republic of Rwanda, 2005).

This process of rapid urbanization makes a study on the formation and utilisation of urban space a timely and relevant concern. Kigali city is ambitious in thinking about her urban future. This is evident in the envisioned city conceptual master plan as well

as the on-going efforts to implement the plan. The city centre is booming with businesses, activities and transformations, in line with the envisioned master plan.

1.2. Statement of the problem

Public open spaces play a critical role in the life of urban areas; they are viewed as democratic spaces accessible to all, as well as meaningful places providing a site for carrying out memorable activities. Evidently, urbanization has resulted in rapid cultural, social and political changes that are playing a great role in the development and transformation of African cities at the expense of public space. Indeed, whereas UPOS has a key role to play in the socio-economic and cultural change, it seems to be underestimated in the planning and designing of cities.

The Rwandese are rather too attached to their land, so much so that this attachment has been highlighted as one of the major drivers of conflicts in the country, right from colonialism. It is believed that colonial patterns, linked to the issue of land, were the main reason why land was viewed as the main resource that the country had (Storey, 1999).

It is further argued that the political economy of land in Rwanda contributed to socio-political tensions and genocide, whereby populations were mobilised to kill their neighbours on a promise of inheriting their land. (Rights, 1994; Pottier, 2002 and Pottier, 2005). In pre-genocide Rwanda, state control meant special privileged rights to the access and control of land, thus making land a highly political issue, closely linked to State power control.

Even in the post genocide era, Rwanda has experienced a robust economic growth and rapid urbanisation as illustrated in **Figure 1.3**, which in turn puts considerable pressure on land.

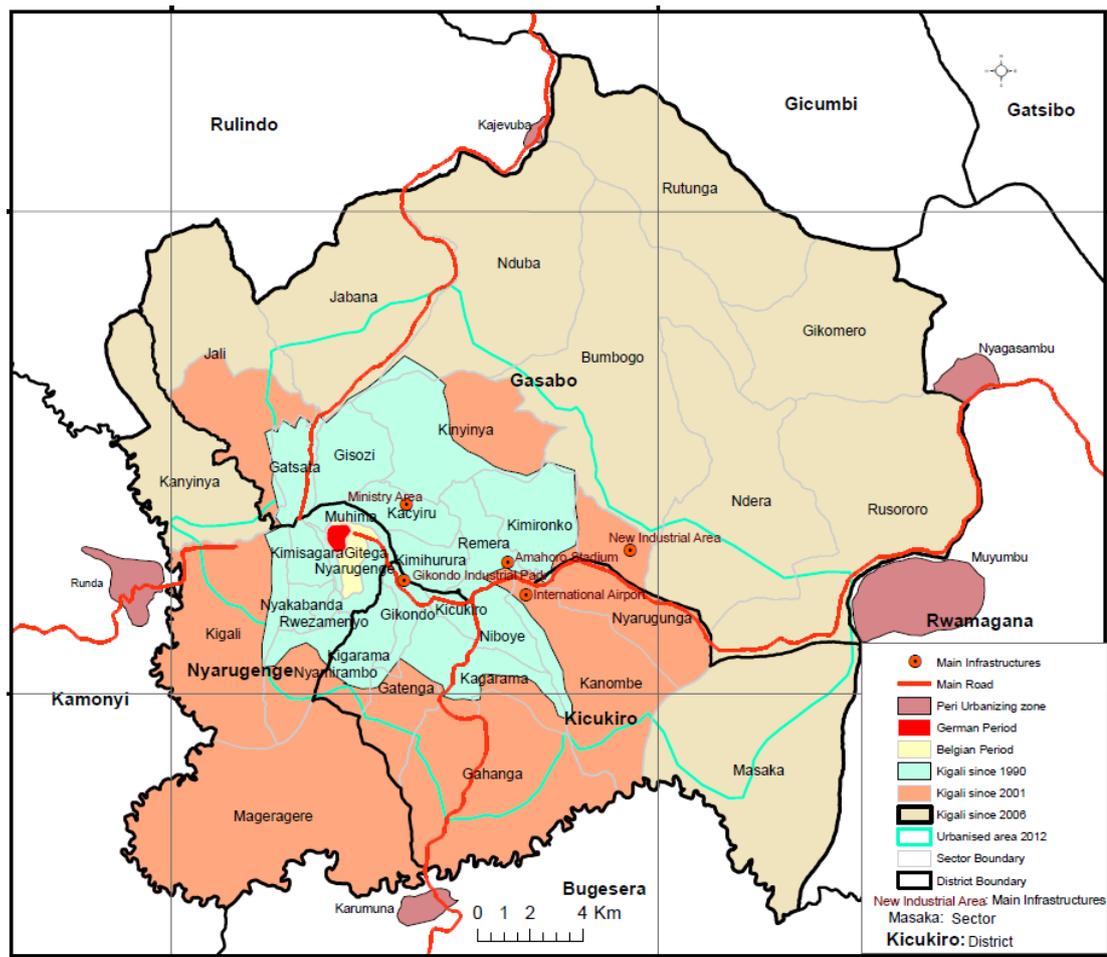


Figure 1.3: The evolution of urban space of city of Kigali 1907-2012.

Source: Manirakiza, 2014.

Before 2003, all land in Rwanda belonged to the government. A nationwide land tenure reform program was therefore put in place, between 2004 and 2012, to demarcate, adjudicate and register land in individual titles. The land registration process led to the establishment of an organic law in 2005, and by 2012, 10.3 million land parcels had been registered (Republic of Rwanda, 2005).

To date, land remains not only a valuable natural resource but also the engine of the nation's economic development. Rwanda therefore continues to face complex land related challenges of land scarcity, coupled by high population density and rapid

growth. Land is continuously under so much pressure from rapid urbanisation that the domain of UPOS seems neglected by urban planners and designers.

Currently, there is an evident mismatch between the social and economic dimensions of the development of Kigali city'. Kigali is evidently developing economically, and where as the economic side of the city is booming and active, the social side of the city seems unattended to. Consequently in Kigali today, there are no parks, no formal public spaces, and therefore missing out on the essence of UPOS.

This therefore highlights the need to rethink how to integrate public space into our cities and to bring people into the plans, so as to catalyse social interaction, becoming an important ingredient in the achievement of quality urban life.

The researcher's personal observation and concern over the absence of public space in Kigali and the low use of 'formal' UPOS, and the relatively higher use of 'informal' UPOS, guided and motivated this doctoral study.

Through this perspective, the study attempts to address the lack of actual knowledge about the interrelation between the social and physical dimensions of public open spaces, a balance that if rightfully captured leads to the magnetic attraction of people, bringing life into UPOS. Several scholars have argued on the importance of appropriate knowledge of the relationship between physical dimensions of UPOS and user activities (Lynch, 1960; Relph, 1976; Canter, 1977; Whyte, 1980; Gehl, 1987; Punter, 1991; Montgomery, 1998 and Carmona, 2010).

This problem therefore, forms the main reason this research seeks to clarify, evaluate and analyse the relationship between the physical and social dimensions of urban public open spaces in order to unpack an interpretation, out of which one could begin to extract the necessary ingredients to support liveable *akarubanda* -full of life, in the contemporary city of Kigali.

1.3. Research gaps the study intends to fill

Increasingly, research has highlighted a significant decline in the production and use of urban public open space. Carmona (2010) argues that UPOS have been experiencing a ‘backing off’ and release in terms of use, caused by the trend of privatisation (Carmona, 2010).

The current study therefore addresses the gap of an apparent lack of UPOS in Kigali city today, a concern developed by the researcher after being resident in Kigali city since 2006. Teaching architecture and urban design in the University of Rwanda since 2009 has exposed the researcher to various city analyses and interrogations, inspiring the researcher to investigate the status of UPOS in Kigali by drawing parallels with the rich traditional setting.

The general lack of formal UPOS in Kigali and the low use of the existing informal ones, directed the study to investigate the extent to which the traditional public open space, or *akarubanda* functioned in terms of their physical design and social parameters, and how the functioning can be applied to inform contemporary urban formation in Kigali city and other secondary cities.

The study is an attempt to unpack an interpretation of the concept of *akarubanda* and how it can be used to illuminate the understanding and reintegration of the same in contemporary urban development in Rwanda. This can be viewed as a way to fill in the glaring absence of urban public open space in Kigali city today. Clearly, despite being categorized, as primitive, traditional architecture has consistently been the main source of references in the social, cultural, and sustainable studies carried out by architects and researchers.

Therefore, learning from the concept of the Rwandese traditional public open space –

akarubanda- does not mean direct imitation of the past forms and concepts but rather, more of the interpretations, lessons and valuable experiences towards establishing an intelligent equilibrium between the inhabitants and their environment today. Indeed, we can learn a lot from traditional concepts of architecture and design, in terms of informing a contemporary approach to designing and constructing our cities.

The absence of adequate database for this and similar studies is also a huge gap which the researcher intends to fill, by generating information, data and knowledge that will not only potentially feed into the opportunity to identify principles, approaches, methods and tools for developing and/or activating urban public open spaces in Kigali city and other secondary cities but also add to the current database. More research recommendations will be needed to achieve productive, sustainable and liveable POS in Rwanda. This study therefore, marks the start in achieving productive, sustainable and liveable public open space.

Although there exists an understanding that enjoyable social exchange in cities can be achieved through the successful creation and activation of urban public open spaces where people can freely and indiscriminately gather, there seems to be a mismatch in the provision of UPOS in Kigali that allow for recreation and social cohesion. This study will explore the relationship between two main components of place; the site (physical setting) and the activities (social dimension) and concentrates on the relationship between both the site and activities that are more related to bringing life into POS.

Intuitively, the Rwandese indigenous *akarubanda* played a considerably influential role in interactive relationships in society; it catalysed a relation between the intangible (people's activity) and the tangible (physical structure and space itself), thereby providing a site for social interaction. The researcher therefore was interested in deducing lessons that can be applied in today's urban development.

1.4. Research goals and objectives

The main aim of the study therefore, was to explore the interpretation of *akarubanda*, which can be a helpful tool in the creation of productive, sustainable and liveable places through socio-spatial design integration. The study aimed at gathering in-depth knowledge of not only what *akarubanda* means in the contemporary city of Kigali, but also a focused interpretation of its three main components; place, people and interaction, all of which constitute the public realm. The researcher sought to unpack the most relevant physical attributes of *akarubanda* and how these can be used to enhance quality of life in UPOS.

The primary objective of this study therefore was to establish the status of traditional and contemporary public open spaces in Rwanda. The researcher sought to gain an understanding of the historical and contemporary spatial and social values of public open space.

The second objective of the study was to develop an analytical framework for studying public open space in Rwanda with the aim of determining how the physical conditions of POS are linked to their uses and meaning.

The third objective of the study was to gain in-depth knowledge on the components of POS, their relationships and how they affect planning and design of public space.

The fourth objective of the study was to determine the extent to which the planning and design concepts of *akarubanda* can be integrated into contemporary urban development in Rwanda.

1.5. Research questions

The Main Research question in this study was **“To what extent can the concept of Rwanda’s traditional public open space –*akarubanda*- influence the planning and design of urban public open space in the contemporary city of Kigali”**

It was further divided into four sub-categories:

RQ 1.1 What are the physical and social components of traditional and contemporary public open spaces in Rwanda?

RQ 2.1 How has public space been conceptualized and analysed in international literature and how can it be analysed in a Rwandan context?

RQ 3.1 How do the physical and social components of *akarubanda* interrelate and what planning and design approaches can inform the provision of public open spaces in Kigali?

RQ 4.1 What guiding planning and design principles from the *akarubanda* concept can assist in bringing life into contemporary UPOS in Rwanda?

Table 1.1 shows the research steps that framed the research objectives as well as the sub questions from each objective.

Table 1.1: Research Steps, Objectives and Sub-questions.

Research steps	Objectives	Sub-questions
1.Situation analysis	1. To establish the status of traditional and contemporary public open spaces in Rwanda.	RQ 1.1 What are the physical and social components of <i>akarubanda</i> ? RQ 1.2 What is the physical and social dimension of contemporary UPOS in Kigali?
2.Analytical variables	2. To develop an analytical framework for studying public open space in Rwanda.	RQ 2.1 How has public space been conceptualized and analysed in international literature? RQ 2.2 How can the concept of public space be analysed in a Rwandan context?

3.Cause and effect	3. To gain in-depth knowledge on the factors and relationships of POS and how they affect planning and design of the public open space.	RQ 3.1 How do the physical and social components of <i>akarubanda</i> interrelate? RQ 3.2 What planning and design approaches have developed around the provision of public open spaces in Kigali?
4.Intergration	4. To determine the extent to which <i>akarubanda</i> concepts can be integrated into contemporary urban planning.	RQ 4.1 What guiding planning and design principles from the <i>akarubanda</i> concept can assist in bringing life into contemporary UPOS in Rwanda? RQ 4.2 What reflections would inspire future research?

Source: Author, 2016

1.6. Research proposition

Based on the objectives this study set, the researcher assumed that it would be possible to unpack the physical and social aspects of traditional public space and contemporary UPOS in Kigali city and draw their various interrelations. It assumed that in as much as the traditional public space has faded away, the growing challenges in the quality of public open spaces in the contemporary city would offer a rich case for empirical investigation. The researcher assumed that it would be possible to arrive at concepts with alternative combinations of physical elements and social aspects, which could be easily applied to achieve better quality urban public open space, not only in Kigali city but also in other towns and cities.

The study proposed that this interpretation could catalyse a more in-depth understanding of the interrelationship between the physical and social dimensions of urban public open space; which in turn could inform urban planners and designers resulting in the creation of vibrant and more attractive UPOS and facilitate the exchange of ideas and cultural practices as well as sites for building relationships and friendships. It has been argued that cities and neighbourhoods cannot survive without spaces in which all kinds of personal, cultural and economic exchanges occur (Worpole, 2007).

It is expected that if public open spaces could be full of life, the city of Kigali could regain the desired potential of being a ‘city for citizens’ and a vibrant place for residents.

1.7. Justification of the study

‘Public space has become an integral part of cities throughout history, so much so that without it, human settlements would be unimaginable’ (Madanipour, 2010 p.2).

This study research seeks an explanation of the relationship between spatial characteristics and activities, in urban public open spaces. The primary contribution is a methodology that combines the works of Whyte (1980) on field observation and Golicnik (2011) on mapping as a spatial analysis tool. The study aims at finding interpretation that informs the design of contemporary urban public open spaces.

Field observation, according to Whyte’s (1980) methodology looks at work done ‘in the field’ and extracts empirical knowledge based on activities that are taking place within the space, considering their types, number of users, their age, gender, income, and occupation, how long they reside in that space, physical and environmental conditions.

Activity mapping and analysis links the data collected from direct observations with activity maps by marking the activity points of individuals. . This analysis reveals the most and least areas that are used or remain unused by considering the frequency of such activities. Through mapping and analysis of collected data, it is therefore possible to relate activities to space and then conceptualise and theorise in order to arrive at a critical discussion about how physical and social dimensions of UPOS interrelate.

This study will therefore contribute in filling a knowledge gap in the field of urban design by clarifying the significant role that the relationship between physical settings and people's activity plays in creating or catalysing life in UPOS. Analysing this relationship will add insight into and complement the application of urban design theories and practice, which could heavily inform and improve the design and planning process of urban public open spaces.

1.8. Scope of the study

The study limited its focus on key factors of UPOS in Kigali city. Within Kigali city, the study further focused on selected case studies: a traditional case study of the Nyanza King's palace in order to find out 'what was'; a transformative case study of Biryogo courtyard and node in order to find out 'what has changed' and lastly, a contemporary case study of RC to find out 'what is'. The selected cases for investigation helped to track the trajectory of urban public space in Rwanda in order to arrive at a pragmatic UPOS; which would help the study to unpack 'what works'.

The reference case study was the 'King's palace museum', which is the only rich representation of the Rwandan traditional settlement currently available. The other two selected cases also assisted the study to capture the different scales and uses of UPOS at both macro and micro scales. Most of the images of the traditional public space in Rwanda exist in old post cards or in books with low graphical qualities. The author has had to redraw most of the illustrations to ensure a clearer representation of the concepts under discussion.

1.9. Limitations of the study

The study heavily depended on the knowledge of elderly people who have experienced life in the traditional *akarubanda*. There is not much publication and documentation of life in the traditional *akurabanda*, and at the same time, elderly persons are not easy to find in Rwanda owing to the historic series of atrocities and genocide.

Due to lack of previous empirical study on this topic, the process of data collection faced related challenges; such as relatively longer fieldwork time and more tact and patience in administering the questionnaires. Again, Access to official documents and reports on UPOS in Rwanda were difficult to obtain, partly because they either were non-existent. City officials gave a very short time for interviews and some, who were still new in office, were not sure of the issues raised.

Rwandans are generally introverts; most of them prefer to talk less or not at all. Interviews were also were met with suspicion and evidently a considerable number of the interviewees held various fears. The study took place at a time when relocation of informal settlements was happening in informal settlements in Kigali and the residents of Biryogo specifically viewed any interviews as part of a process towards the demolition of their settlement.

By focusing on the two highlighted dimensions of UPOS; the physical and social, the study also faced a theoretical limitation, based on literature and theories relating to the legal/political and economic dimensions which complement the initial two towards sustainability of any urban development.

For a study like this, which looks into generating knowledge that can inform creation of successful UPOS with high social impact, it was necessary that the researcher settle on theoretical grounding after considering several theories. This further required a more conscious methodological consideration that can rely on available information in order to make it feasible, hence requiring much more time.

1.10. Definition of terms

For the purpose of this research some of the terms that will be used will have a different/modified meaning for them to express the ideas and concepts that will be advanced during the development of this research.

Akarubanda: Traditional public open space for all in Rwanda; Derived from *aka* (for) and *rubanda* (the people).

Contemporary: Living or occurring at the same time. This relates to the current times, and to events that have occurred at most in the past 20 years, it will be interpreted to some extent as modern in the context of this research.

Contextualization: Is the act of putting a study or experiment in a context.

Liveability: Derives from liveable, which means worth living; presenting or having the conditions that eases and promotes a good quality of living. Liveability in this research will be used to mean the fullness of urban life in a place.

Public: ordinary people in general; the community.

Public life: A life and way of living that is common to the general population, or community.

Public open space: A space for our everyday lives. A space where people participate to the life of the community and meet to do things together, recreate, share experiences, and interact with each other outside the space of work/private space.

Public Realm: includes the street, sidewalk, area between the street and the sidewalk, as well as civic buildings, plazas, parks, and greenways.

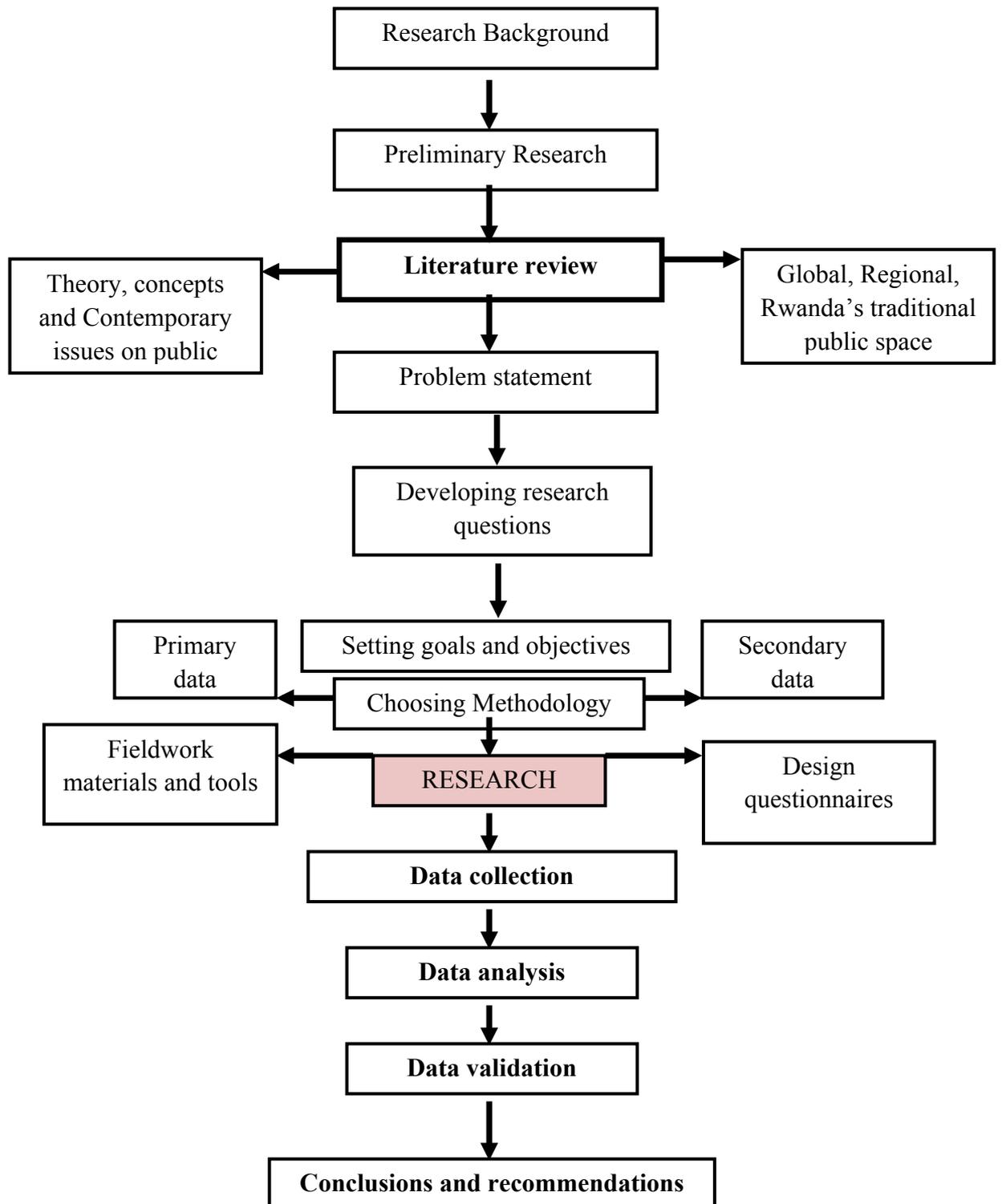
Space: a continuous area or expanse, which is free, available, or unoccupied.

Urban: in, relating to, or characteristic of a town or city.

Urban design: the process of designing and shaping cities, towns and villages. In contrast to architecture, which focuses on the design of individual buildings, urban design deals with the larger scale of groups of buildings; streets and public open spaces, whole neighbourhoods and districts, and entire cities.

Urban space: the totality of the system of the public realm in the urban context where a multitude of public activities can take place and can be accessed by the public.

1.11. Organisation of the study



The study is organised in six chapters as illustrated in Figure 1.4.

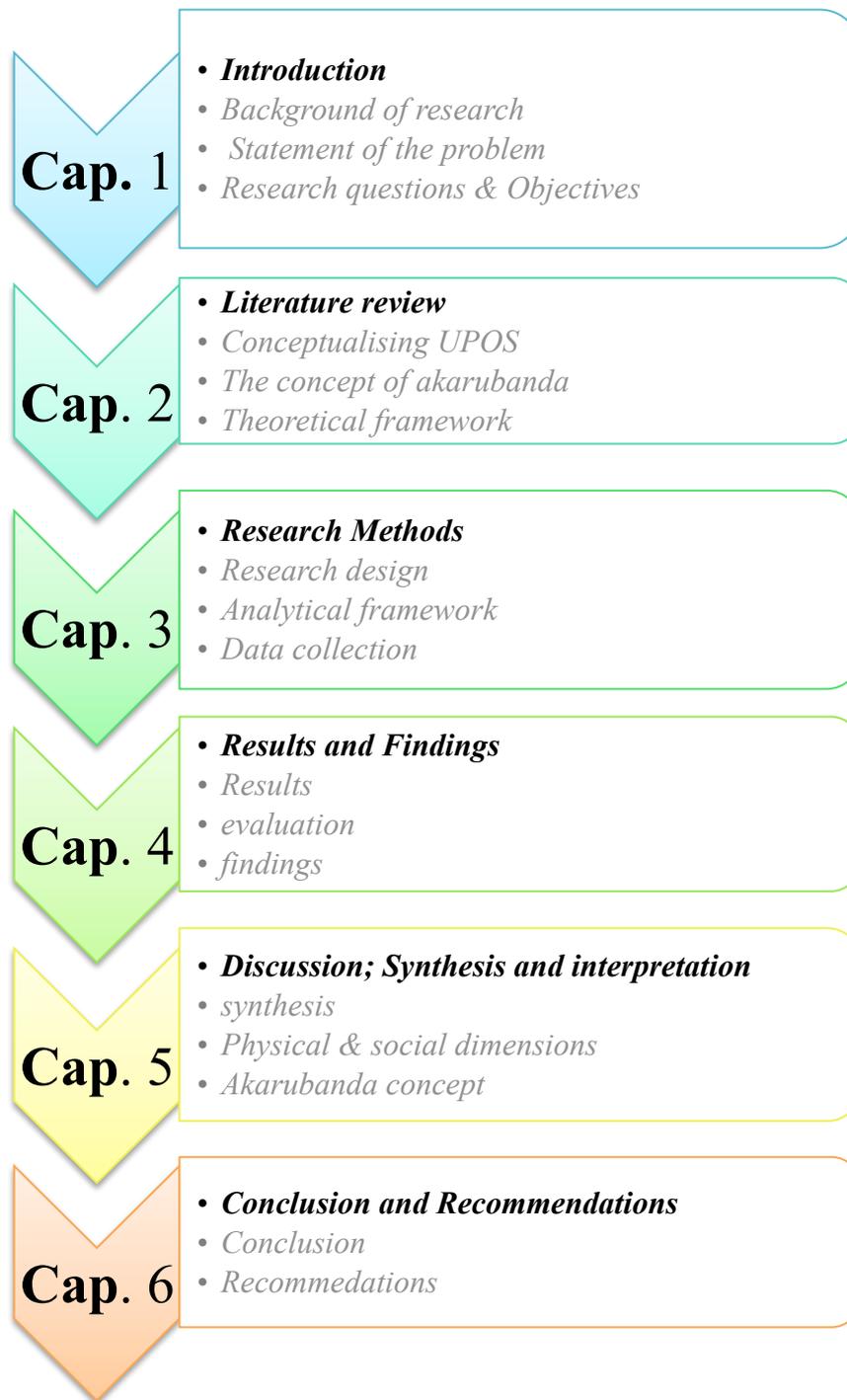


Figure 1.4: Thesis structure.

Source: Author, 2017

CHAPTER TWO

2 LITERATURE REVIEW

2.1 Introduction

There is a very close relationship between cities and their public open spaces. . Indeed, public open spaces play a particular role in the life of urban areas, whether as memorable, accessible, or meaningful places (Madanipour, 2006). This Chapter therefore first considered the origins of public space, relevant theories, concepts and approaches towards the creation of appropriate public open space. It highlights the definitions, importance, values, characteristics of UPOS, the relationship between people and places and then reviews UPOS in Africa, Sub-Saharan Africa, Uganda and Rwanda.

Taking the absence of public open space in Kigali city as a point of departure, it become important for the study to also further look into the connection between the physical setting of POS and people's activity as two main components of place which, combined with studies of the cultural landscape offer an analytical lens, to enable the current study examine in-depth an interpretation of the Rwandan traditional settlement.

The resulting interpretation was expected to offer prescribed ingredients for good public open space in Rwanda, which would consequently inform the criteria and indicators of UPOS for future application and further investigation.

2.2 Conceptualising POS: Origin, Theories and Concepts

There has been growing concern in urban design and urban planning on the creation of UPOS and places, and primarily, the improvement of the qualities of urban environments. As a consequence, there have been significant advances in research on the conceptual, theoretical, and practical knowledge of the use of these places as illustrated in **Figure 2.1**.

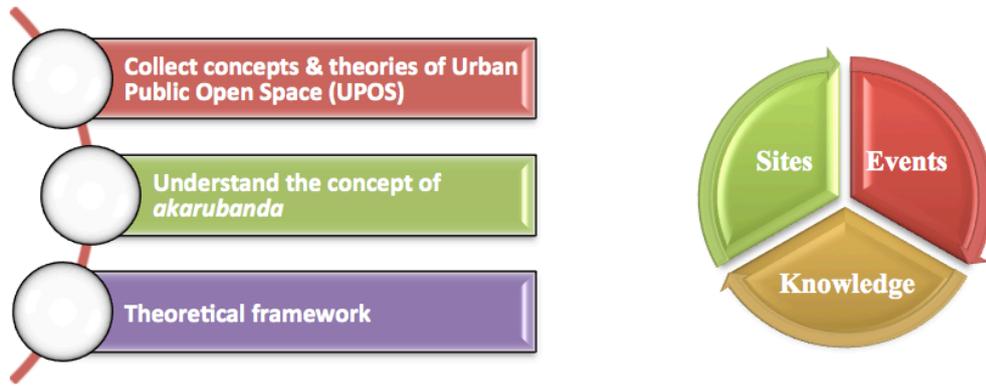


Figure 2.1: The literature review process.

Source: Author, 2017

Earlier studies on urban spaces aimed at finding out people’s activity patterns within these places. (Cooper & Francis, 1998). Montgomery (1998) however believes that active and vibrant urban spaces are associated with the knowledge of how to manage, develop and design cities.

In this regard, Montgomery uses the term “Urbanity”, as a reference to a city filled with activity, street life and urban culture. The physical attributes of a UPOS may indicate particular meanings to the residents, having a significant impact on people’s perceptions, interactions and activities (Canter, 1977). According to Montgomery (1998), designing, developing and managing urban space requires an understanding of its characteristics and the number of people using it.

2.2.1 Mapping the origin of public space

The interrelation of physical space and peoples’ activities is evident in the global history of human civilization. As such, the first example of public open space is said to have been the ancient Greek *agora*, which served as the main public square and the meeting place of the town; it was a place for assembly, ceremonies, and the overall social life of the city. Starting as a mere open space, it was soon surrounded by several public buildings, generating an urban centrality and drafting the concept of a central square that would be adapted several centuries later, across western

European cities. The concentration of civic activities in the centre and having the rest of the space left for residential uses was a feature that Greek cities shared with the older civilizations of the Near East (Madanipour, 2003).

Following the agora, were the Roman planned forums or plazas. Technically speaking, the 'Roman Forum' may not have been considered 'public' since it was not accessible to all, but it remains an important plaza. The medieval European plazas served various purposes in the social and economic spheres of towns (Carmona, De Magalhaes and Hammond, 2008; Carr, Francis, and Rivillin, 1992).

Norberg-Schulz (1980) believes that a place is a space with a distinct character.. Evidently, Madanipour (2003) broke away from Eurocentric discussions of the plaza to study Chinese and Asian cities in an attempt to broaden the scope and expand the parameters around which to discuss public life and public open space. From this perspective, alternative cultural concepts and historical uses of plazas and public open space, have become important, because an interpretation and better understanding of their evolution, would generate design considerations useful in the appropriate design of urban public open space.

Through this lens the study reviewed the evolution of public open spaces in Africa, Uganda and Rwanda, in the following section.

2.3 Public Open Space in Africa, Uganda and Rwanda

This section looks at the status of POS in Africa, Uganda and Rwanda. Rwanda, the focus of this study is located in central Africa. The global frame of POS can easily be sub-divided into continental or territorial frames, in which the various countries in Africa for example, display similar evolution. Uganda, which lies geographically adjacent to Rwanda, was selected as a focus for this study because the two nations share a lot of history that has influenced the formulation of POS to date. Interestingly, in Uganda, the indigenous concept of POS, the *kibuga* of *kabaka*- the

pre-colonial leaders- successfully evolved to form the current city of Kampala, the capital of Uganda. Obviously, Rwanda, which was the site for the current study, was important for revealing and understanding how POS has evolved.

2.3.1 Public Open Space in Africa

The beginning of humanity is rooted strongly to satisfying basic needs, such as food for survival and shelter against environmental hazards. Adule (2001) has argued that these two factors dictated social arrangements as determined by location and environment, respectively. However, throughout history, the environment has had a dominant influence on human settlements.

In this sense, the earliest known human settlements were sheltered open sites and caves, in the Palaeolithic era (30,000B.C - 10,000B.C). The inhabitants then were hunters and gatherers, who used only stone tools. Adule (2001) states that during this period, the introduction of fire brought about developments that led to human spatial changes.

As illustrated in Figure 2.2, the human settlements layouts consisted of a fire in the middle and a crescent-shaped screen to protect the fire from being windblown.

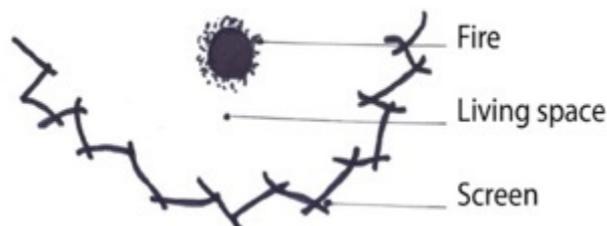


Figure 2.2: Palaeolithic open space.

Source: Author Adapted from (Adule, 2001)

By the Neolithic period (8.000B-C - 3.000 B-C), as illustrated in Figure 2.3, human beings had harnessed the fire, and left the caves to live in more permanent circular village settings.

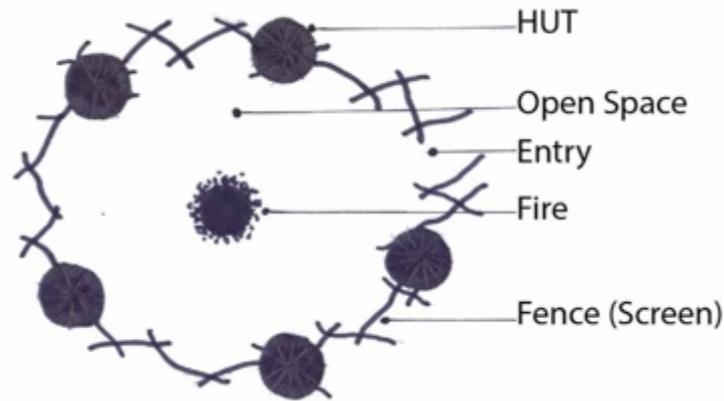


Figure 2.3: Neolithic open space.

Source: Author Adapted from (Adule, 2001)

Historic research has indicated that human beings continued to develop cultivation and pastoral skills to increase and maintain their food supply. Adule states that this development had a significant impact on the evolution of communal Open Spaces. The space around the fire became the new settlement for human beings and domesticated animals, which further prompted the screen change from crescent to a circular form, with the fire as a central and focal point (Adule, 2001).

The circular huts became part of the fences and with time smaller circular granaries emerged as storage for the food especially the grain harvest.

As a result, the space where various human activities and social interactions like cooking and eating took place, changed to become additional "room" and in most instances a central focal point that strengthened the notion that social activities occur in the open air.

As staple diets continued to be sustainable, the shape of the compound evolved depending on whether the family were livestock keepers, grain or plantain (banana/*matoke*) consumers, as illustrated in **Figure 2.4** and **Figure 2.5**

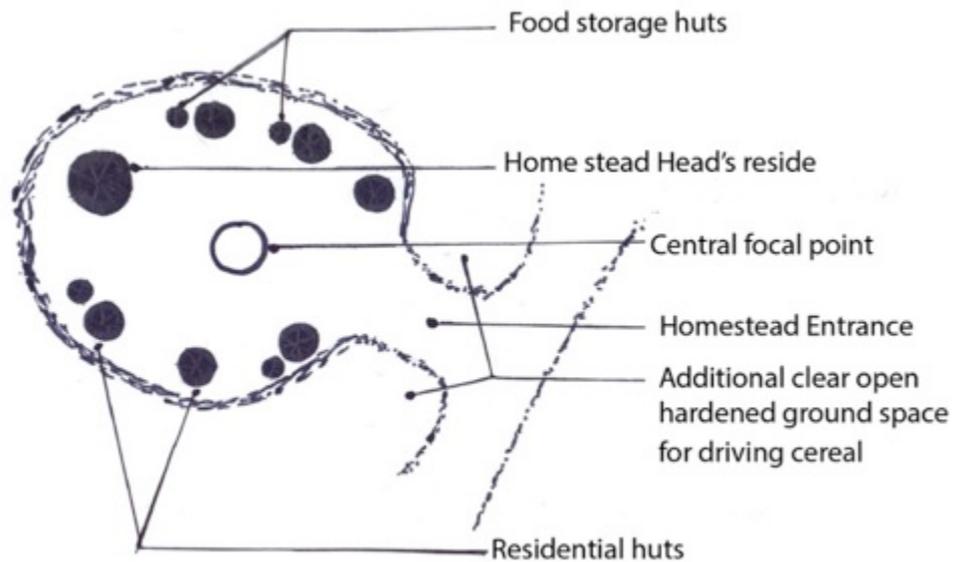


Figure 2.4: Plan of Nilotic (grain eater) homestead.

Source: Author Adapted from (Adule, 2001)

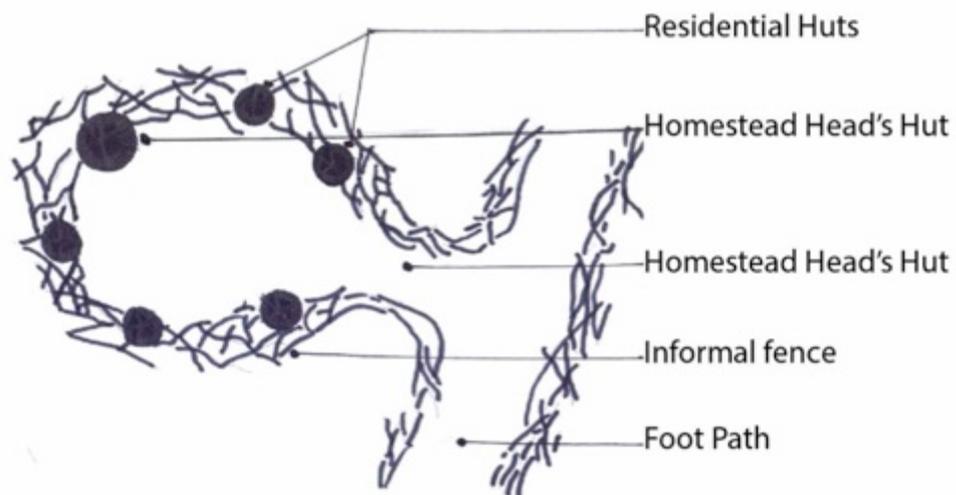


Figure 2.5: Plan of Bantu (plantain eater) homestead.

Source: Author Adapted from (Adule, 2001)

For livestock keepers, the kraals were mainly characterised by a sacred fire located in the centre as illustrated in **Figure 2.6**, which burnt day and night and was mainly used for light and warmth at night and during the day for burning herbs whose smoke contained insecticides and pesticides. The fire was also a symbolic cultural element and next to it, there was also a cleared open space where the cows waited after being milked before being herded off to graze. It was observed that milk was the main food among the livestock keepers. (Adule, 2001).

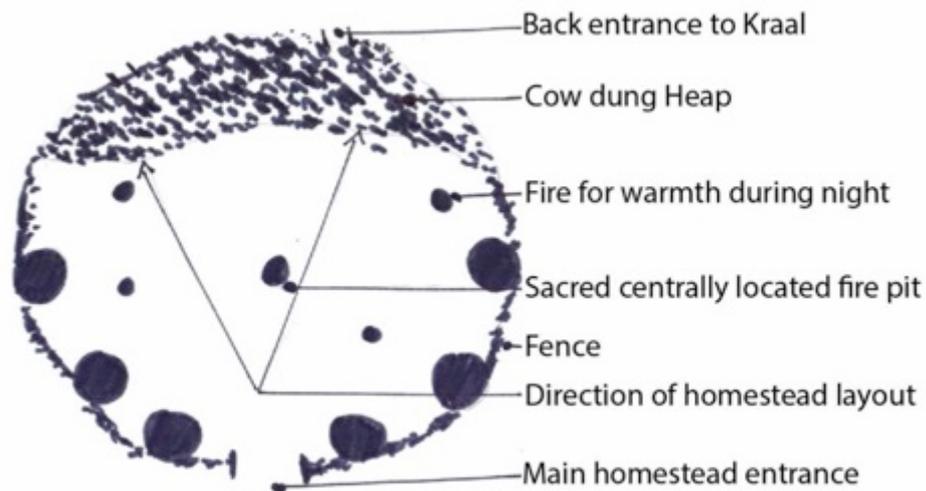


Figure 2.6: Plan of pastoralists' homestead.

Source: Author Adapted from (Adule, 2001)

2.3.2 *Public Open Space in Uganda*

In Uganda, the *Kibuga*, which means “capital”, was an UPOS; viewed as as the headquarters of the Buganda government, it contained the King’s (Kabaka) palace on top of the hills, surrounded by the residencies of the chiefs’ s and further downhill were the residences of ordinary people. Gustschow (2004) has argued that the Kibuga functioned as both a political and economic centre point of the Buganda Kingdom. He has further highlighted that Kibuga was not only the seat of the highest political authority including the Kabaka's royal residence, but also the highest Courts of the Kingdom, a trading centre and the Base of the army (Gutschow, 2004).

POS in Uganda was built on a hill, like all the preceding capitals of the Buganda kingdom. The underlying reason for the choice of Mengo Hill for the kingdom's capital was defence. The Kabaka's palace was situated at the top of the hill, surrounded by a natural hedge and bamboo fence. Surrounding the palace were the villas of the chiefs and close confidants of the Kabaka, set in concentric formation with radial roads pointing to the centre of the formation as illustrated in

Figure 2.7.

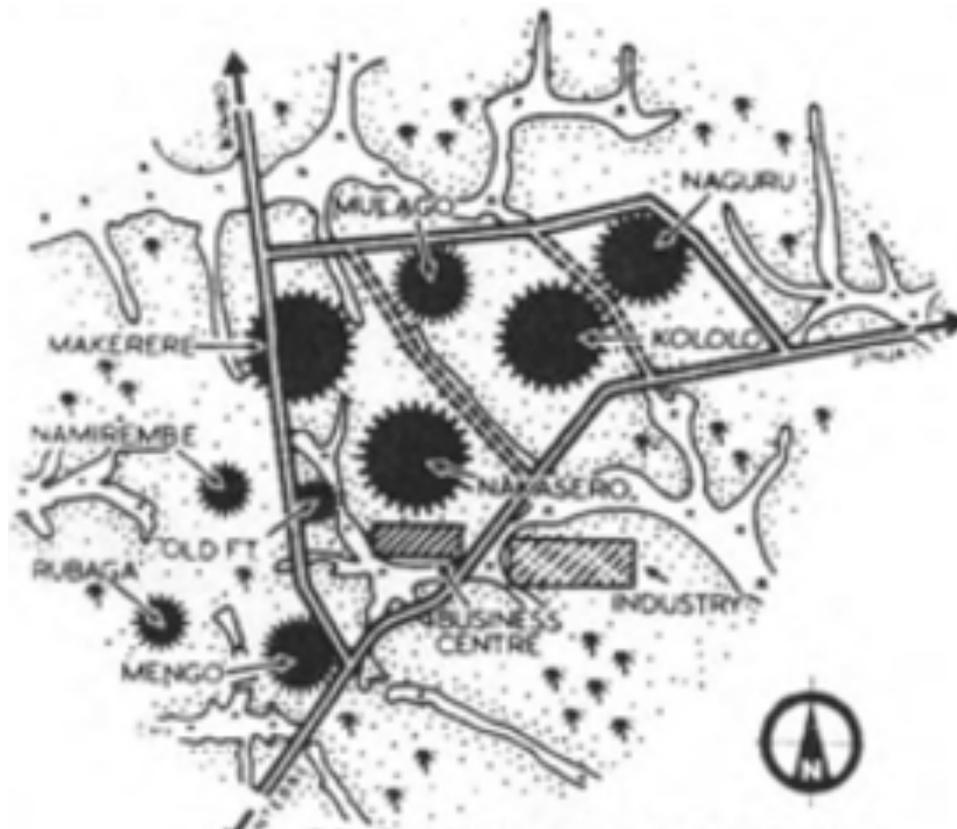


Figure 2.7: May's schematic presentation of Kampala as a city on hills in 1970's.

Source: (Gutschow, 2004)

Gutkind's study discovered that the whole of the royal enclosure was divided up into small courtyards, each with its group of huts as illustrated in Figure 2.8. Each group of huts was enclosed by high fences, and wide paths connected each cluster of houses. The high fence surrounding the royal residence was built from elephant grass, a deterrent to enemies with ordinary and primitive weapons.

He further highlights that guardhouses were built around the enclosure at equal intervals, that there were four or five entrances, which were strongly guarded by soldiers to prevent any person from entering except the slaves and King's wives. Again, inside the enclosure near each of the gates were other guardhouses with soldiers on duty with instructions on what persons were to be admitted by the gatekeepers.

“The main entrance in front of the royal residence was the only way that the public were allowed entry or leave of the court. All the land between the royal residence and the lake was retained for the king's wives, to grow plantains” (Roscoe, 1911:88-9 quoted in: Gutkind, 1960; Roscoe, 1965).

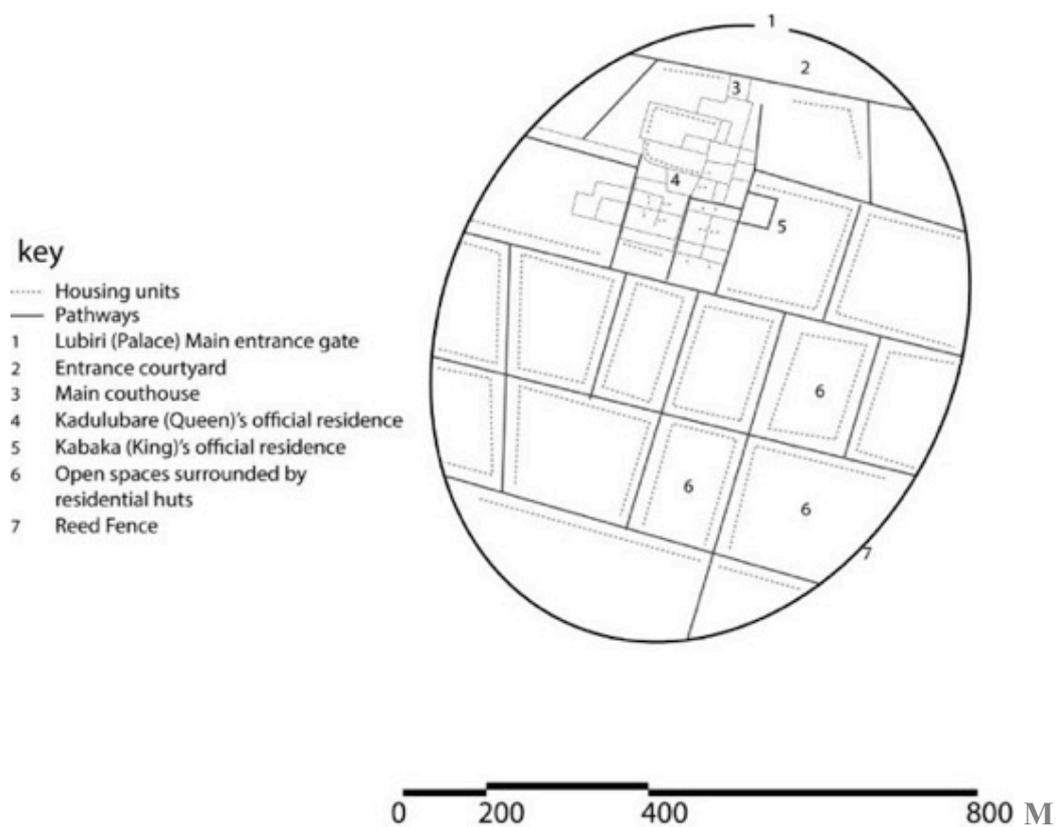


Figure 2.8: Organization of the Lubiri (Kings Palace) during the reign of Kabaka Mutesa I, 1859-1884.

Source: Author Adapted from (Adule, 2001)

Gutkind's study therefore draws three important concepts from the planned arrangements of the Kibuga. First, the palace was situated at the top of the hill and in the centre of the whole settlement, hence giving the palace a central position in the power matrix, and also effectively defending it from any hostile intruders. Secondly, the city fully embraced what we now refer to as urban agriculture. Urban agriculture was part of the urban fabric and it contributed to the city's essential infrastructure, playing the role of open spaces necessary for the environmental health of the city.

Thirdly, the majority of the Kabaka's subjects lived on the lower ends of the hill, in the fertile valleys, where they cultivated most of the food required by the kingdom. In effect, zoning came into play. To date, the area occupied by the original Kibuga has retained the characteristics of a rural settlement, with houses organically set within the farmland (Nawangwe, 2009).

2.3.3 Public Open Space in Rwanda

In Rwanda, the entire traditional landscape was dotted with *akarubanda*. The huge open space in front of the king's palace had one entrance that people used to get through to a big open space -*imbuga ngari*- where Rwandans used to meet for traditional concerts and other social activities. As illustrated in **Figure 2.9 a and b**, public open space was highly emphasized in the planning of homes and traditional villages.

The Rwandan people, historically settled on the hills, surrounded by agricultural fields. Almost every family owned land for cultivation and livestock keeping. It was not until the era of colonialism, that 'cities' were established (Manirakiza, 2014). As illustrated in **Figure 2.10**, the homesteads and the king's compounds maintained a rural characteristic.



a



b

Figure 2.9 a and b: Rwandan Traditional Villages at the foot of Nyiragongo, in 1950's.
Sources: Kanimba and Van Pee 2008

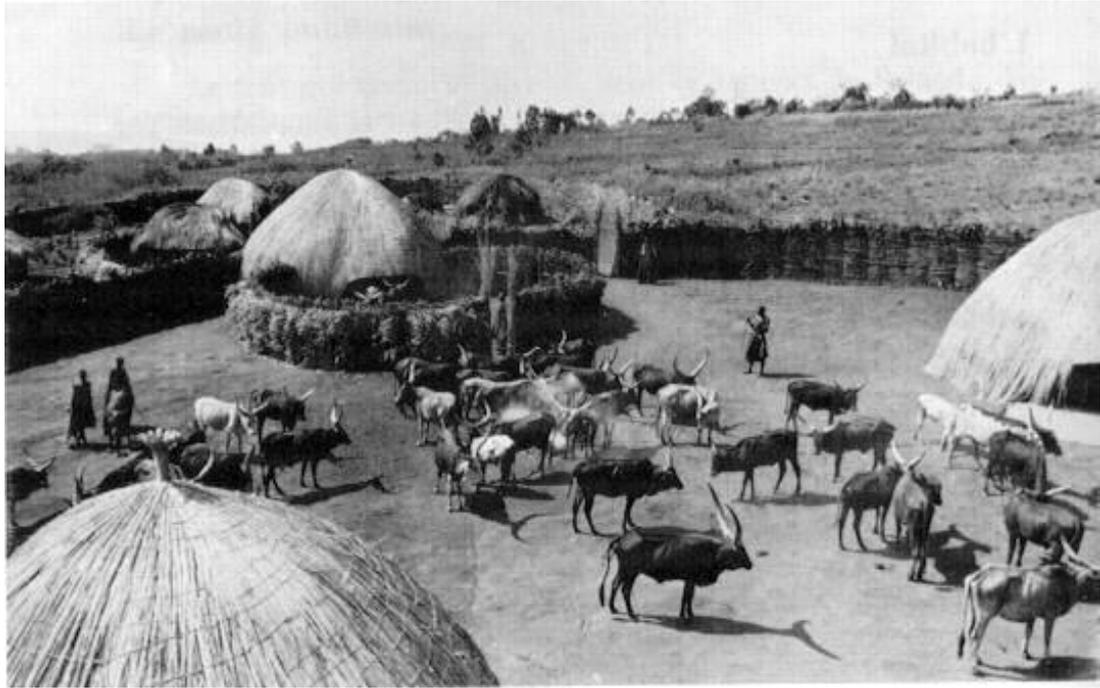


Figure 2.10: King Kigeli V's compound.

Source: Sabar, 2014

The social production of space was so influential that a social hierarchy could be traced in the Rwandan traditional settlements in terms of size, form and planning. For the poorest, it was a matter of one small, rudimentary hut without an enclosure and for the wealthy people the huts were of a size and complexity commensurate with the owner's position in society (Kanimba and Van Pee, 2008, p. 90).

At a closer look at the then built environment, one can note that it drew quite a bit of inspiration from nature and objects of daily use, as is similarly the case with other traditional built forms across the continent. Indeed, many of the materials used for construction materials were derived from natural resources, soil and vegetable fibres. The idea of a common social space is emphasized in this settlement because, historically, the Rwandese are a social people. The entrances to the settlement as well as that to the huts were also carefully determined in order to accomplish respect and honour, viewed to be of paramount importance to society.

The materials used in construction were also locally sourced, through a process that allowed people to inter-mingle. From this perspective, construction itself can be viewed as a *tool* that launches certain social processes. In fact, the absence of durability was an advantage; because the resulting repetitive maintenance needed for such settlements generated patterns of social events, which provided more chances for these interactions to take place. For instance, a women's group of associates meets every two weeks to replace the roof of one of the members. In this sense, periodic socialising becomes a way of life; with people meeting to create spatial space and enhance 'social space', simultaneously.

Traditionally, the Rwandese have developed and enjoyed their outdoor life, even with temporary settings in public space. The unfortunate intrusion of colonialism in the country interrupted this trend and the social divisions in Rwanda contributed largely to minimising or eliminating peoples' life from public open spaces. The growing and rapid urbanisation, active construction industry, and increased motorisation in the 20th century and consequently city planning is aiding the acceleration of this trend. The result is a series of lifeless, open spaces, that act as separators of the social fabric, unlike in the traditional setting, where every open space was a *stage* for socialising and public life connections.

The concept of Rwanda's traditional public space displays a harmonious interaction between man, nature and culture as illustrated in Figure 2.11. Indeed, it evolved in harmony with the natural environment and the everyday socio-cultural practices. This trend is worth exploring, given its ability to allow one to step back, and gain a new perspective on how to take planning and design actions within a contemporary setting, that are reasonably sustainable.

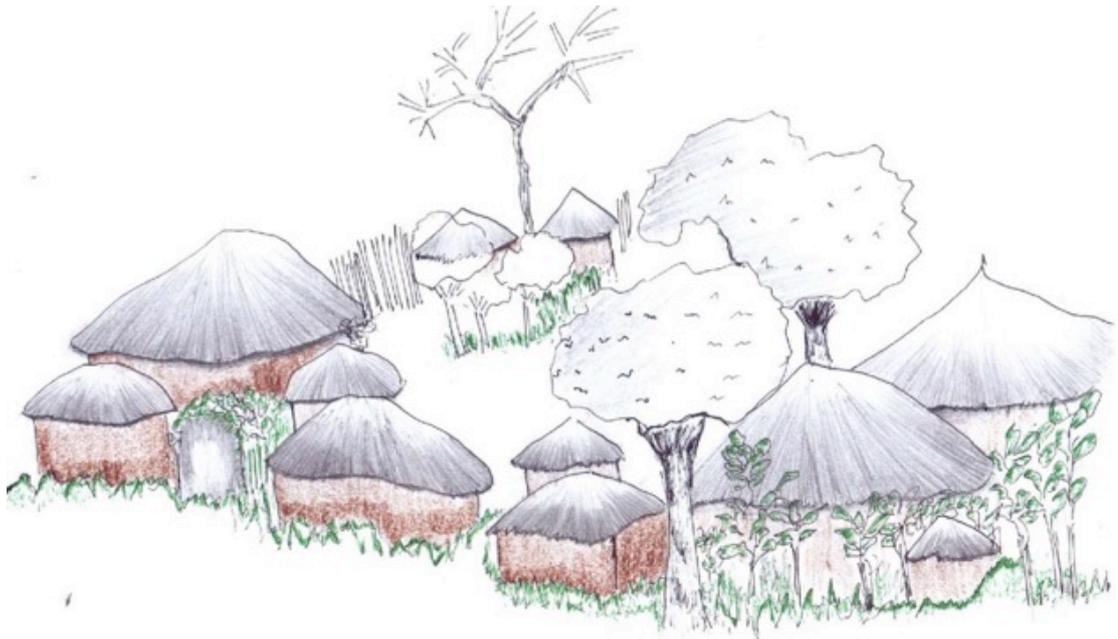


Figure 2.11: A typical Rwandan traditional compound.

Source: Author, adapted from Kanimba and Van Pee, 2008

The various typologies were explored in order to gain in-depth insights on how shared spaces were conceived and used in ancient Rwanda, and further, were useful for analysing how communal spaces are represented and used in Kigali today. The qualities explored, consisted of commemorations, celebrations and rituals that took place in early Rwandan shared spaces. In most cases these social activities either were in honour of the King or between related individuals (families, marriage based relationships, etc.), or sometimes would be conducted for entertaining the King (Adekunle, 2007).

Social events and celebrations involved the population coming from various areas of the country to pay homage to the King. These celebrations marked the largest gathering of the biggest part of the nationwide society. Therefore, it was felt that the occasions provided an opportunity and honour for each citizen to attend the festivities (Adekunle, 2007).

During the above-mentioned celebrations on a national scale, various performances and activities were carried out, the most noted being the sharing of traditional beer, dancing, storytelling and other traditional performances.

Apart from the celebrations, the ancient Rwandese had other social activities that took place in the *akarubanda*. It was, as the name indicates, an absolutely inclusive public open space for all, the place where all had free access. This was a place where people from a village would meet to hold general discussions on matters concerning the village. The matters that were discussed in these forms of spaces had to do with discussing how to deal with a person who had violated accepted social norms, bringing to matter a persons' character and the general situation of the village. Other forms of interactions that took place between people from different families had to do with the youth; who organised hunting in groups or to communally learn the high jump.

The key physical elements relevant to this study included large open space in the front and mid compound for social interaction, the *imbuga*, as well as the open backyard *igikari* for cooking and laundry, as illustrated in the **Figure 2.12, Figure 2.13 and Figure 2.14.**

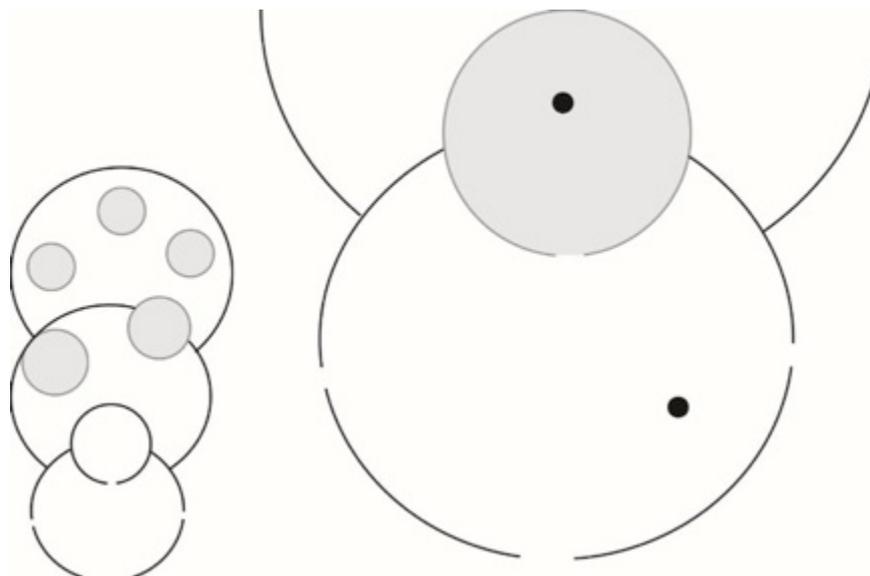


Figure 2.12: The main entrance to the home

Source: Author Adapted from Kanimba and Van Pee, 2008

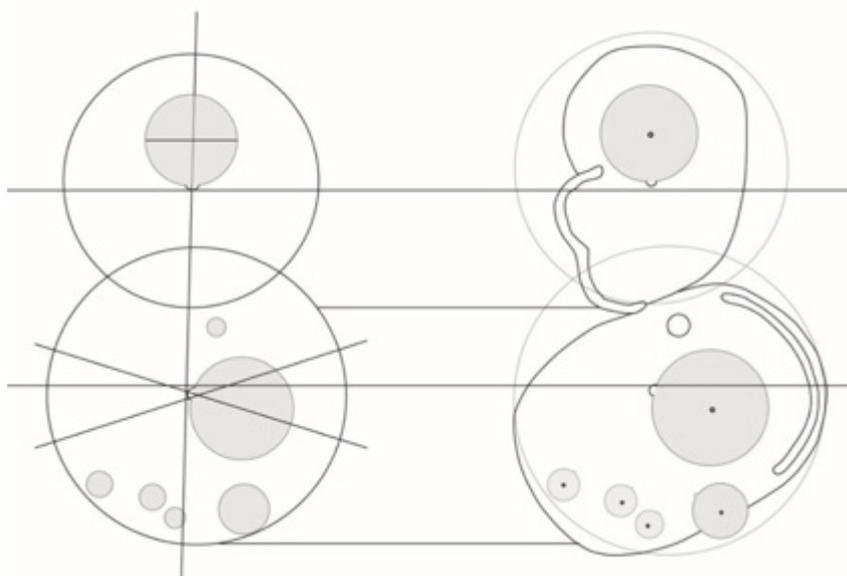


Figure 2.13: The front yard open space

Source: Author Adapted from Kanimba and Van Pee, 2008

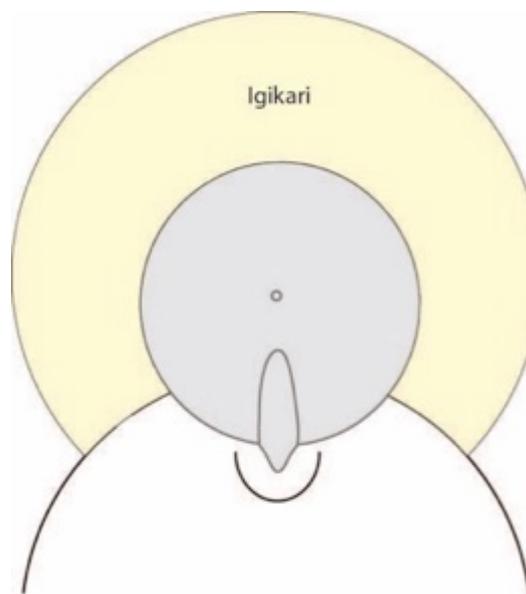


Figure 2.14: The backyard open space

Source: Author Adapted from Kanimba and Van Pee, 2008

The key socio-cultural practices relevant to this study included conflict resolution, meetings around the fire place, reconciliation sessions under the trees and collective farming, as illustrated in the **Figure 2.15** and **Figure 2.16** .

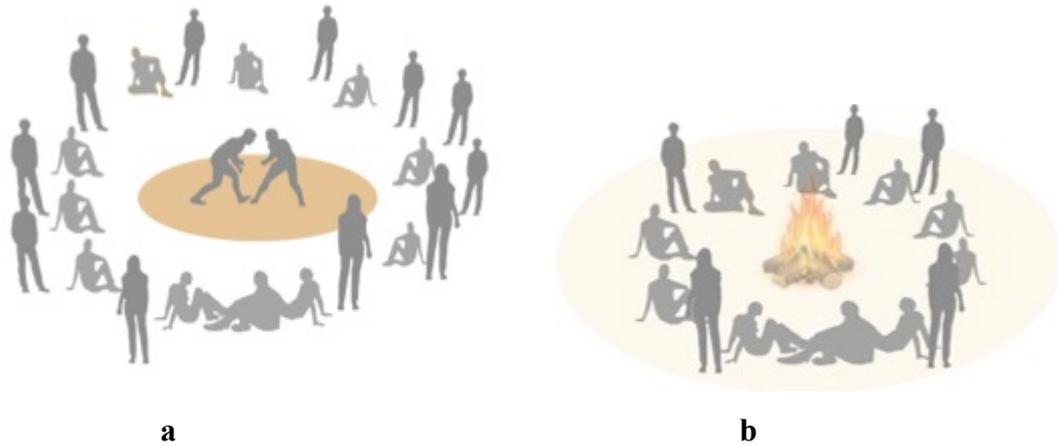


Figure 2.15 a and b: *Icyiru* - Conflict resolution (a) and *Igitaramo*- Meeting around fire (b).

Source: Author, 2017

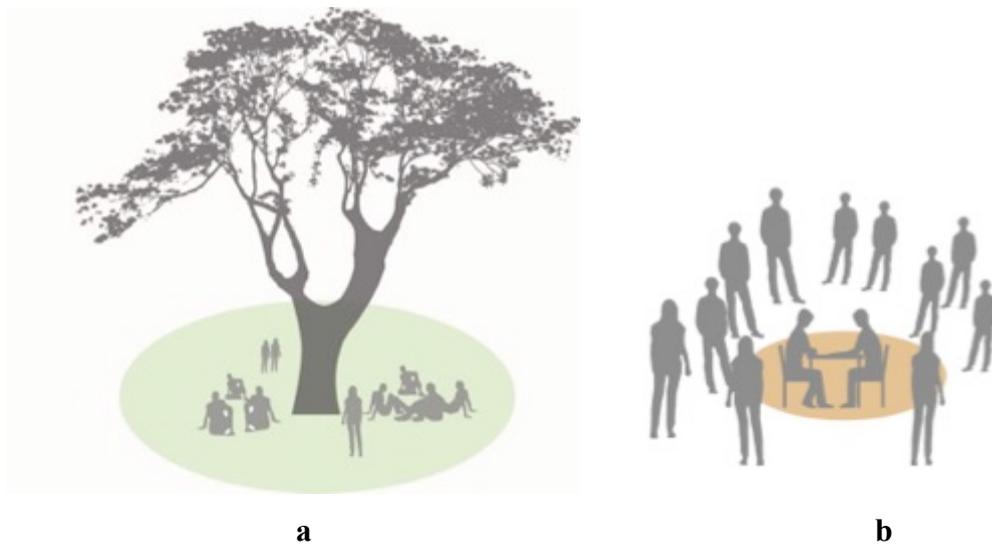


Figure 2.16 a and b: *Agacaca* - under a tree Post genocide Justice and reconciliation (a) and *igisoro* - traditional game (b).

Source: Author, 2017

In summary, the socio-cultural practices shaping the Rwanda traditional public space are illustrated in **Figure 2.17**.

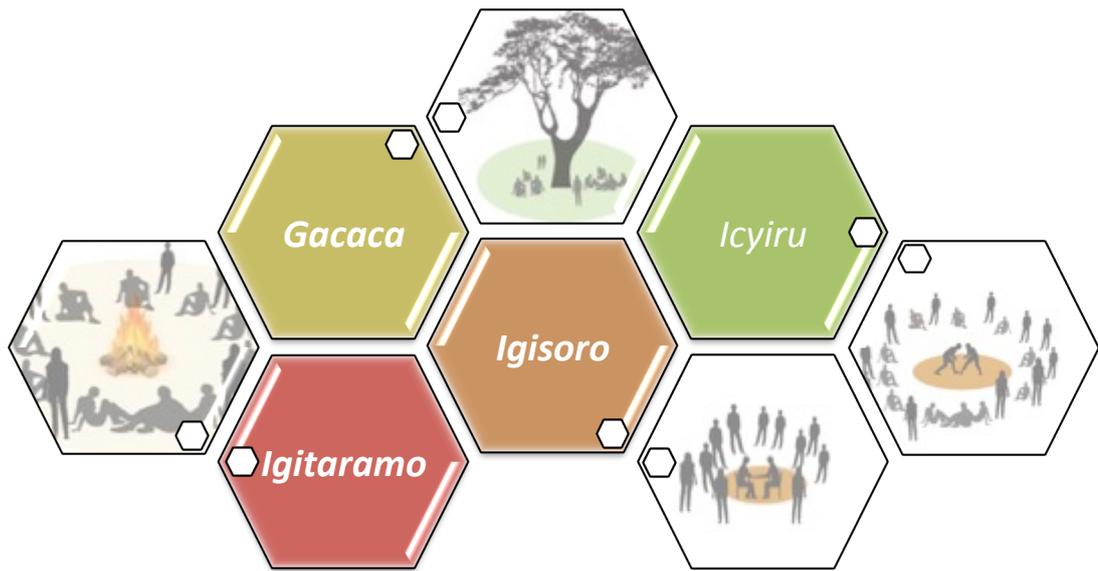


Figure 2.17: Events of *Gacaca* (community courts), *Igitaramo* (meeting around fire), *igisoro* (traditional games) and *Icyiru* (conflict resolution).

Source: Author, 2017

2.3.3.1 *The planning layout of a typical home (umurera)*

The general layout of a compound included a hut (or several huts) enclosed within a larger compound, forming front yard/or back yards, which is similar in many regions of Rwanda. However, the shape of the compound was adapted to the irregular topography of the landscape, which caused a deviation from the normal circular shape.

The layouts of the compound for farmers (grain and plantain eaters) are illustrated in **Figure 2.18 a and b**, whereas those of the Compound for livestock keepers are illustrated in **Figure 2.19 a and b**. From the illustrations, the farmers compound was more compact than that of livestock keepers, who needed more spatial flexibility to enable the livestock move around the compound.

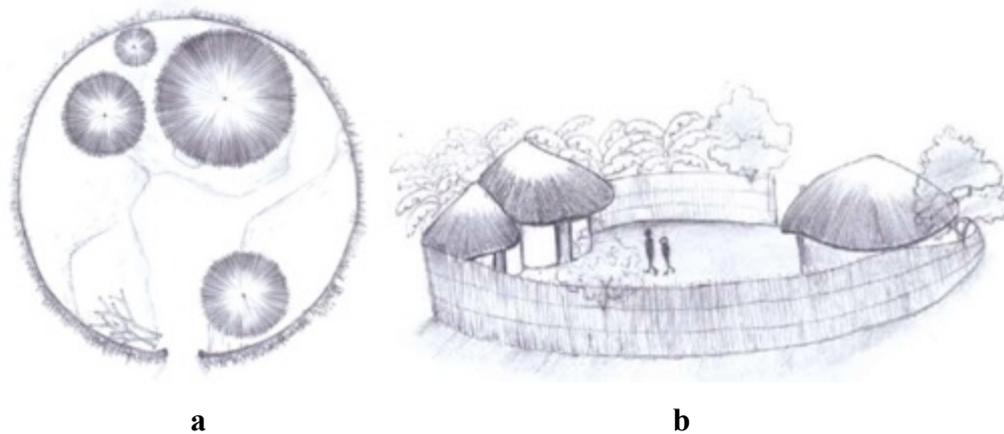


Figure 2.18 a and b: Plan (a) and 3D view (b) of a livestock keepers' compound.

Source: Author Adapted from (Kanimba & Van Pee, 2008)

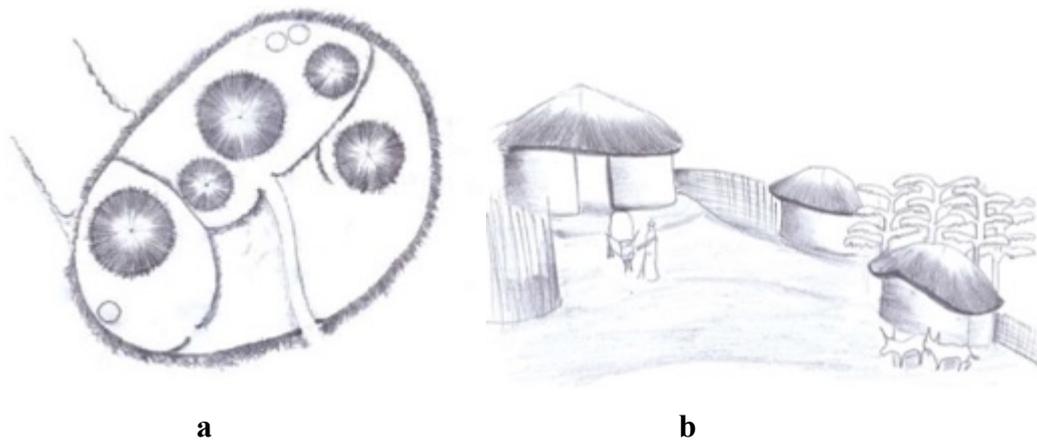


Figure 2.19 a and b: Plan (a) and 3D view(b) of a livestock keepers' compound.

Source: Author Adapted from (Kanimba & Van Pee, 2008)

The sections illustrated in Figure 2.20 **a and b**, further clarify the compactness of the farmers' compound, with provision for granaries and a closer proximity to farms with banana plants forming part of the fence. For the livestock keepers' compound, the houses were more spaced to allow easy circulation of livestock.

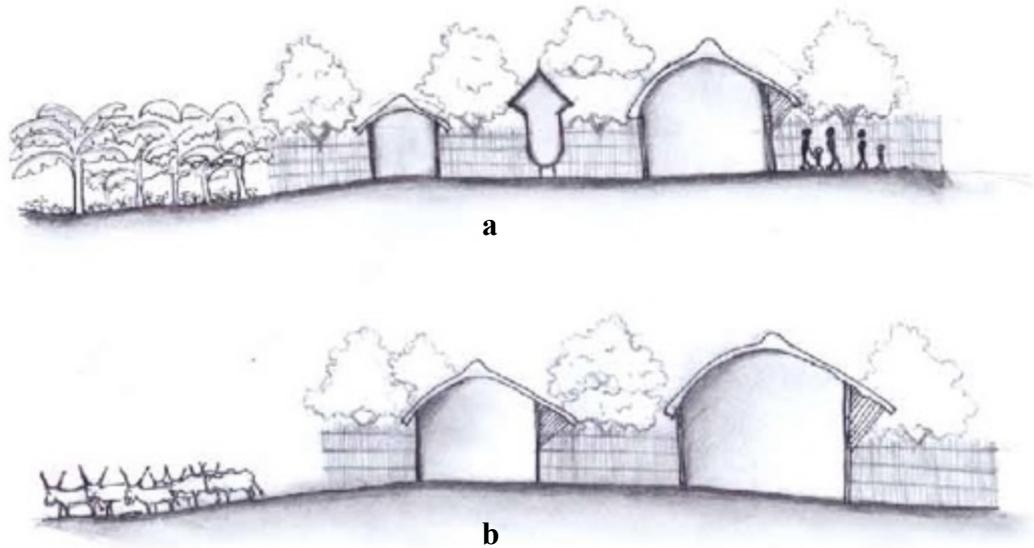


Figure 2.20 a and b: Section through compound of *Umuhinzi* – Farmer (a) and *Umworozi* -Livestock keeper (b).

Source: Author Adapted from Kanimba and Van Pee, 2008.

2.3.3.2 *The planning layout of a King's palace (ibwami)*

The general layout of a compound was dominated by the King's hut, which was mainly an administrative unit. It also included the milk and beer huts, which were mainly utility spaces to provide drinks for entertaining the King and his visitors. The houses were enclosed within a large compound as illustrated in **Figure 2.21**.

The front yard acted as a public open space where the king would host all activities; ceremonies, traditional concerts, legal hearings, rituals, etc. To access the courtyard, one had to come through a symbolic entrance. For legal hearing, one had to be escorted by the King's guards to the entrance lobby where he sat with his mother.

Both cowsheds and farms were located at the back end of the compound and were not visually connected to the compound

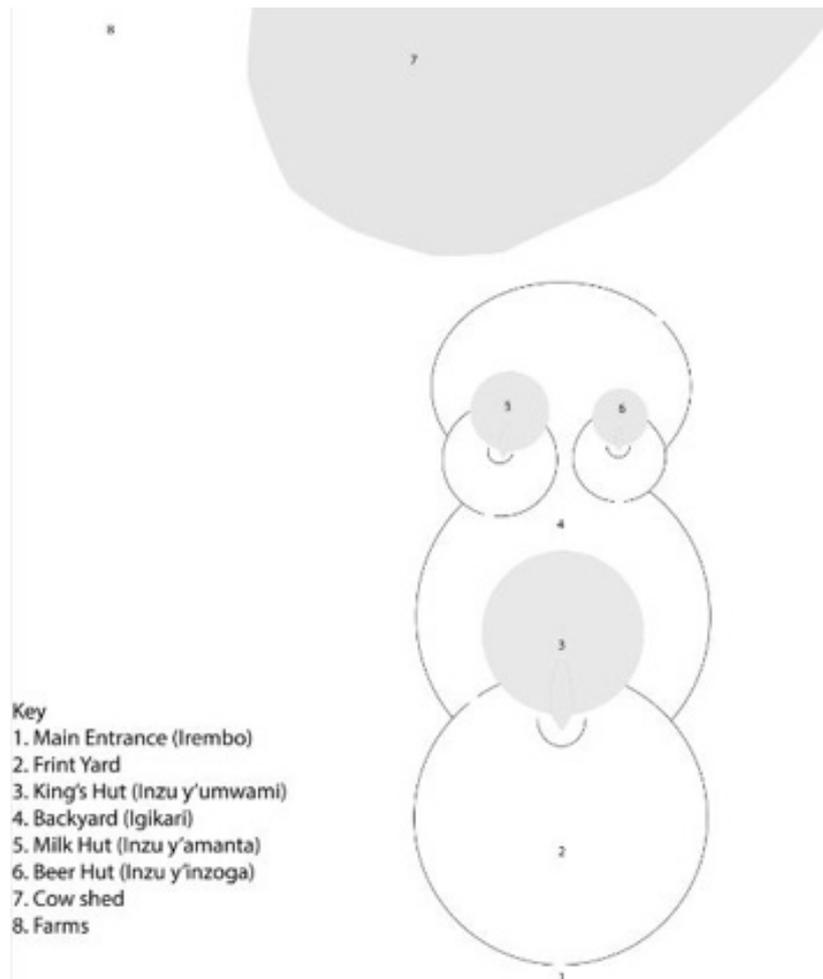


Figure 2.21: Compound of *Umwami* (King) and *Umutware* (rich person)

Source: Author Adapted from Kanimba and Van Pee, 2008.

2.3.3.3 *The planning layout of contemporary UPOS in Kigali city*

The evident rapid urbanization of postcolonial Kigali city has resulted in the haphazard development of a city with significant consequences such as the absence of urban public space. (Malonza and Rukwaro, 2017). Malonza and Rukwaro (2017) conducted an in-depth fieldwork survey on Kigali's 'Car Free Zone' (CFZ). The zone as illustrated Figure 2.22, in was created in August 2015 as an attempt by the government of Rwanda to create a vehicular free space within Kigali's Central Business District (CBD) for exclusive use by pedestrians. The attempt could be

described as a pedestrianization exercise aimed at formally introducing urban public space into the city.



Figure 2.22: The location of CFZ and adjacent buildings.

Source: Malonza and Rukwaro, 2017.

The study, conducted in 2017 found out that the formation of the CFZ was the result of a legislative action rather than design-based, and thus it largely remained empty due to the lack of adequate facilities for supporting the necessary activities, which in turn boost social activities (Gehl 1980). Due to the absence of amenities and social nodes, there was no adequate opportunity for passive activities such as seating, watching urban life, or relaxing on the street (Whyte, 1980). As illustrated in Figure 2.23, the research found out that users of CFZ were mainly walking across the space using the side walkways and mapped minimum hotspots for social interaction and vibrancy.

MOVEMENT OF PEOPLE & VIBRANCY IN THE CAR FREE ZONE

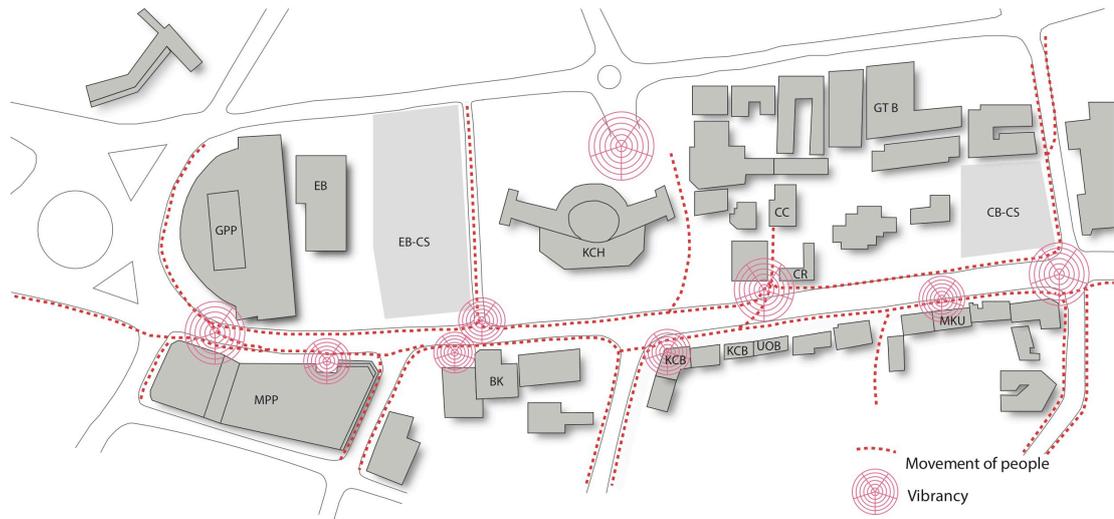


Figure 2.23: The patterns of use and vibrancy of CFZ.

Source: Malonza and Rukwaro, 2017.

The overall lack of shaded areas and the hot tarmac surface further impacted negatively on the number of uses of the CFZ (Malonza and Rukwaro, 2017). CFZ has remained without benches, playgrounds, fountains and public art and consequently the level of passive engagement has remained minimal. As Whyte has argued ‘what attracts people is other people’ (Whyte, 1980). According to Whyte, the numbers of people attracted to CFZ remained relatively low, further, patterns of activity have long been linked to design aspects (Whyte, 1980; Carmona, 2010).

2.3.4 Colonialism as an interruption to an existing trajectory

In his book ‘How Europe Underdeveloped Africa’, Rodney has argued that colonialism was negative, Rodney draws attention to the way that previous African development was blunted, halted and turned back and in place of that interruption and blockade, nothing of compensatory value was introduced (Rodney, 1973).

Although the colonization of Africa lasted just over 70 years in most parts of the continent, it could be viewed as an extremely short period within the context of universal historical development; and yet, it was precisely in those years that the other parts of the world experienced rapid development

Rodney further emphasizes that the character of growth in Africa under colonialism did not constitute development, in the sense that it did not enlarge the capacity of the society to deal with the natural environment, to adjudicate relations between members of the society, and to protect the population from external forces (Rodney, 1973).

Error! Reference source not found. illustrates how various aspects of POS were set up in the indigenous/pre-colonial era, how they transformed during the colonial era and their current status in the post-colonial city and Rwanda today. The discussion indicates gaps created in the transformational process.

In terms of land use, it is evident that during the indigenous era, land was more collectively used and with more attention to nature. However, during the colonial era spatial and socio economic stratification of land through creation of zones exclusively allocated for white settlers brought in differences that have continued to have influence on land today leading to land disputes. The conservation of natural resources also seems to be fading away due to pressing urban issues.

Where as the indigenous society utilised their ethno-botanical knowledge to inform their production and use of food, traditional medicine and construction materials, currently environmental degradation and thirst for globalisation seem to be a crosscutting characteristic of cities, challenging sustainability.

Table 2.1: Chronological (trans) formations of Rwandan traditional POS

Aspect	Indigenous/ Pre-colonial Rwanda	Colonial Rwanda	Post-colonial Rwanda and Today
Landuse	Hunting, harvesting, cow watering and other activities according to various climatic cycles. Hilltops for kings	Recreation Hilltops for early European settlers/colonialists, hospitality, agriculture, commerce, religion, war	Conflicts, war,(genocide) All land was government land until 2005 No significant conservation drive
Spatial configuration (geographical)	Based on seasonal knowledge and patterns, cultural boundaries, travel was possible though through remote means, cultural protocols upheld, indigenous education, spirituality upheld, land management according to topography,	Contextual differences and challenges; how social and ecological systems would/should coexist on the land. Ability to explore and develop land further.	More than indigenous, non-indigenous knowledge is utilized. Consistent urban development plans. A non-indigenous structure has evolved. Need for peoples' participation in the production and management of UPOS; promotes natural and cultural heritage
Environmental quality (use of natural resources)	In the traditional days, hunters and gatherers lived a semi-nomadic lifestyle, and hence had extensive botanical knowledge and use of traditional medicine, ethno-botanical knowledge used for food, art, ceremony, commerce with tangible and intangible materials, trading paths	Natural resources utilization increased, exploitation and modification of natural resources to suit human needs, colonial mentality on built environment e.g. closed boundaries, security walls, and recreational activities.	Environmental degradation, thirst for globalization, REMA keen on environmental protection, Emphasis on sustainable use of natural resources and strategies to lower and mitigate environmental degradation.
Form and function	Huts (beehive huts) were used, all elements easily	Major land transformations begun to	Globalization, rapid urbanization, <i>akarubanda</i>

of the built environment	portable, stability of built environment not necessary, cultural values highly upheld, peoples relation to land highly valued.	happen, Eurocentric architecture vs. tropical architecture. The ownership of houses and materials used, which in turn relates to the relationship with nature, was heavily influenced by religious and administrative structures. In Rwanda, the colonial rule and early catholic church did not promote urbanization (Manirakiza 2015).	missing, <i>bye bye nyakatsi</i> , indigenous materials and technology viewed primitive, desire for ‘modern buildings’ the global city- the Singapore of Africa, city beautification, iconic buildings for specific use . Need for efficient and sustainable built environment. Ability to adapt to changes
Landscape characteristics	The interconnectedness of all things was significance, multi-disciplinary, multi-scale, elders learnt by way of observing and doing. Spiritual relationship with the land was reinforced by ceremonial songs and dances	Landscape views primitive, empty and available to assimilate colonialists’ cultural structures	Cultural landscape diluted, participation by indigenous people on the ‘modern’ landscape uncertain. continued sensitization/education, adaptive management of landscape, need for improved and equal participation

Source: Author Adapted from (Kanimba and Van Pee, 2008; Adekunle, 2007; MININFRA, 2008; MINECOFIN, 2013a; MININFRA, 2015)

2.4 Public Open Space; theories and Concepts

The concepts and theories used by urban planners and urban designers provide a foundation for unpacking the dialectical relationships between the physical and social dimensions of urban spaces. POSs cannot be viewed as just particular spaces with physical attributes, but more importantly, they should be viewed as spaces that

accommodate different activities and allow interactions to take place within them. Indeed, the link between the physical and activity components of a place cannot be ignored in the process of designing urban public open space. By establishing a framework for exploring the relationship between physical attributes (spatial dimension) and the activities (social dimension) within urban places, the current study attempts to develop an interpretation of traditional shared space in the contemporary city, using Kigali city as a case.

Logically, the theories offer a prescription of how to create quality urban spaces for the people, therefore the principles set by key thinkers in urban planning and design offer a satisfactory base for this study. For example, in terms of fundamental theories of place, Lynch (1960), in his book ‘Image of the City’, defines several physical characteristics of a city in order to describe and evaluate the built environment. Taking into account Lynch’s work, Gehl (1987) and Canter, (1977), later continued to investigate the components of place. Drawing from their work, Punter (1991) and Montgomery (1998) suggest that it is important to understand why a place is being used and how its characteristics can be improved by establishing the principles for place making, based on specific components of place: physical setting, activity and meaning.

Table 2.2 provides a summary of theoretical underpinnings on both physical and social dimensions of UPOS.

Table 2.2: Theorists on Physical and Social dimensions of UPOS and their concepts.

THEORIST	YEAR	KEY CONCEPTS
PHYSICAL/SPATIAL DIMENSION		
Camillo sitte	1889	Emphasis on the urban aesthetic issues emphasis on the visual continuous of sidewalk motion
Gordon Cullen	1961	Roadway arteries from among individual identity winner emphasis on the human pattern via the thought network from sidewalk routes emphasis on human and his presence

Rob Krier	1975	Emphasis on the urban architecture aspects return to the past discipline of cities and the bygone nobilities of the square and street.
Christopher Alexander	1987	Step project or growth rule attention to the physical dimensions and gradual growth and non-geometric regularity of the urban spaces.
Ali Madainipour	2000	Presentation of a suitable image from the activities among urban design major and physical, social, spatial dimensions of spaces that is formed with its help.
Jahansahe pakzad	2005	Assessment an evaluation of urban spaces in 24 groups and the explanation of the principles and design criteria anyone with native approach.
Kevin Lynch	1960	City landscape project and its fivefold elements former the impact of mobile elements of any city in the security creation of any city.
Amos Rappaport	1977	Moving in city environment as the main factor of environment recognition attention to the orientation in the city environment.

SOCIAL DIMENSION

Jane Jacobs	1985	Emphasis on the people presence in pedestrian streets for social interactions.
Jane Jacobs	1961	Human effect and his supervision in environment for security creation by the term street eyes.
Jan Gehl	1987	Human activity division to 3 groups: functional-essential, entertainment – selective activities, social activities. People presence and social group cause the security creation and security sense in citizens.
Hillier	1984	Safety increase in the public spaces by people presence.
Hannah Arendt	1985	Of social relations by objects public domain, the main factor of extroversion and public and political life.
Paul zucker	1959	Square, mental stopover in local and urban landscape space perception
Clare cooper Marcus	1990	Urban space division in terms of social communication to 7 groups.
Oldenburg	1989	The term third place for urban public spaces, the first and sec.
Francis Tibalds	1992	Attention to human scale in urban environment / promotion of communal
Lewis	1938	Emphasis on security creation, place sense and human scale / parlorit of

Mumford		side walk-to-Roadway
Nurberg Schultz	1974	Behaviour approach to space; material space properties space calibration
Jon Lang	1987	Assessment of behavioural science in the environment design mental schemas of the individuals, behaviour former and citizens' activities.
Bruno zevi	1995	Inter space theory: emphasis on triple presence of human, space and movement

Source: Author 2017, compiled from listed references.

From this summary, it is indeed difficult to separate the physical and social dimensions of POS. Furthermore, the handbook for reading research presented the relationship between people and space in seven hierarchies as illustrated in **Table 2.3**. This clarifies the various reasons that make people relate with space the way they do.

2.4.1 The relationship between people and space

Table 2.3 Presents various levels of peoples' relationships with space and highlights the reasons for the various resulting processes.

Table 2.3: The relationship between people and space.

Relationship with space	The reason for the process:
Biographical	The involvement of people and the place acting as an integral part of their past lives
Iconic	An iconic place. People keep a strong memory of the place because it is meaningful to them.
Functional	Transactional needs. People's needs are fulfilled in the place
Experiential	People like the environment of a place. The place offers a new and unique experience to them.

Social	There are vibrant activities and active social relationships in the place
Dependent	People are forced to be in the place and want to stay longer.

Source: Author Adapted from Barr, Pearson, Kamil, and Mosenthal, 1991

2.4.2 The physical dimension of Public Open Space

In this study, the physical dimension of UPOS is based on the spatial and environmental factors, which largely involve the production and development of UPOS with emphasis on attributes such as accessibility, facilities and safety.

Whyte (1980) conducted a behavioural study on the users of public open spaces in selected plazas in New York City by overlapping films of the place at different times. He found that there are several major factors causing the use of the area at various times, which he referred to as positive factors. These included facilities such as accessibility, seats, activities, vending, food and beverages as well as amenities. He also found that climate and undesirability tend to be negative factors (Whyte, 1980).

According to Carr, Francis and Rivillin (1992), public open space is characterized into three main categories. The first category is Places as being “meaningful”, allowing people to make rich linkage and attachments with place; secondly is being “Democratic”, protecting the right of user groups, being accessible to all groups and providing for freedom of action; and thirdly, being “Responsive” in order to address the needs of residents (Carmona 2010).

2.4.2.1 Theories and concepts on the physical dimensions of POS

The study concept on public open spaces in the past, focused on the spatial level, mainly visual and physical accessibility, form and size and enclosure as evident in the works of Sitte (1889) and Zucker (1959). Cullen’s theory of sequential views emphasises on the visual and spatial perception in the urban spaces. Cullen believes

that, the city is a set that can be moved, it is understudied and is the continuous divergence of the landscapes, rather than a fixed image (Gosling, 1966).

Krier (1975), has emphasized urban architecture aspects and calls for a solution to urban space use as lying in a return to the past space of cities including using spaces such as squares and streets in the city's public arena. Alexander (1987) emphasized the physical dimensions of space and gradual growth and the non-geometric regularity of urban spaces. Further, in this case, Alexander borrows from Iranian authorities who use the same approach.

Madanipour (2003) offers a suitable image of activities that should be taken into account, among them being urban design and physical, social, spatial demonstrations of the spaces that is formed with its help. Pakzad (2005) assesses and evaluates urban spaces in 24 groups and explains the principles and design criteria from a native approach.

Lynch (1960) elaborates the city landscape theory and the fivefold element, which is representative of all architects and planners. He believes that the mobile factors of any city, especially the human, are effective in the image creation of any city. Lynch (1960) discussed the uniqueness of a city, derived from a mental picture and a social concept.

The public realm is viewed as one of the most important components of any city or neighbourhood. As such, the built form and streetscape treatments are expected to provide an attractive, safe and comfortable pedestrian environment, while maintaining the overall visual cohesiveness of the area. This can be achieved through a variety of design responses, which include, but are not limited to, ground level facade treatments (i.e. transparent glass that shares the interior activities with the street), architectural details, paving patterns, shade, seating, adequate sidewalk widths and other features (Lynch, 1960).

Rapoport (1977) introduced movement in the urban environment as the main factor of the environment recognition. Rapoport, focused largely on orientation in the urban environment. Trancik (1986) used the figure-ground theory in his study of urban space known as “Finding the Lost Space”, a study through which the density proportion of building mass and open space could explicitly explain the urban structure.

2.4.3 The social dimension of Public Open Space

In this current study, the social dimension is based on human factors, which largely involve the use and meaning of UPOS and the concern on how people make social contacts with each other as well as relate to a place with various levels of interaction being discerned through their watching or chatting. Thus, this study divided social activities on the space and those surrounding the space. Whyte (1980) argues that organizing festivals and parades, creating programs and identity of a place in the neighbourhood, plays a great role.

2.4.3.1 Theories and concepts on the social dimensions of POS

Carmona et al. (2010) has argued that understanding the relationship between people (society) and their environment (space) is a necessary component of urban design and considers from a social dimension. People and built environment are obviously related: it is difficult to see a ‘space’ as being without social context, and equally, a social context without a spatial component. People and their environment are interactively related and affect each other. Whereas some public open spaces developed naturally, either by spontaneous phenomena of repeated use or by a certain concentration of people, others were the result of the urban planning process (Carr, Francis and Rivillin, 1992).

The interrelations of public open space and people can be viewed from various perspectives, ranging from a more architectural evaluation, which concerns itself

with the study of the design and relevant physical attributes (Bentley et al., 1985; Lang, 2005; Moughtin, 2003; PPS, 2011 and Whyte, 1980). Other perspectives place a strong emphasis on the relationship with the enveloping built elements and the feelings transposed into users (Carmona et al. 2010; Carr, Francis, and Rivillin, 1992; Gehl, 1980; Jacobs, 1961; Applyard, 1979; Lefebvre, 1991; Lynch, 1984; Madanipour, 1996; Montgomery, 1998; Tibbalds, 2001 and Ken Worpole, 2007).

Jacobs (1961) emphasized the role of urban public spaces in social interactions. In this case, Jacobs further emphasized the people presence on the pedestrians as a social interaction. Jacob's study on public open spaces was indeed a different viewpoint, from those in the past. It was based on a social approach to the use of public open space in the daily life of a community, and it placed importance on interactions of people either along a footpath, the streets and shops, ensuring their livelihoods, dynamism and safety in the community. Jacobs expressed the term of the street eyes, as an emphasis on how the presence of people directly influences the security of the environment.

Gehl (1987) highlights that the beauty and attractiveness of a city lies in the meeting and the routine activities of the people. Oldenburg (1989) in explaining the term, third place, emphasizes the role that urban public spaces play in approaching the first and second places, (the work and home domains), to each other and further, the role they play as identifying factors to a city. Oldenburg argues that since expectations from home and work have been expended beyond the capacity of those institutions and their fulfilment, the people need the releasing and stimulation that a more sociable domain can provide.

Mumford (1938) is renowned as the first theorist who mentioned the role of security creating place sense and human scale, within urban cities in the first half of the 20th century. According to Hillier (1984), the people's presence in a city causes an increase in security and safety. In former approaches, authors such as Jacobs and

Gehl have also been keen on the security approach. Gehl (1996) proposes different levels of human activities outside a building, namely necessary activities, optional activities and social activities. He also states that a good public open space should have the highest level of social activities.

According to Gehl (1987), the community and social activities in the public space occasion the security creation and security sense in citizens. He argues that a good design of the environment could create opportunities for connection. It is therefore necessary to create a variety of activities for the public open spaces.

However, Newman's (1973) theory of defensible spaces emphasises that security of spaces can be achieved through urban design. He provides reasons and statistical evidence on the relationship between the decrease in crime and architectural solutions. Tibaltds (1992), drew attention to human scale in the urban environment, which he felt was important as noted in the first approach, Cullen (1961) emphasized the human pattern via the thought network from sidewalk routes. In line with this, Lang (1987) assessed the behavioural science role in the environment design and the mental schemas of individual's former behaviour and their activities. Whyte (1980) conducted a study on public open spaces in the plazas in New York City, in relation to the behaviour and functions that made people use the spaces. His work has been continued through PPS (Project for Public Space) and continues to have a huge impact on urban studies, to date by evaluating the success of UPOS as well as offering various suggestions on how to make places great and liveable.

2.5 Life in Urban public open space

There is a significant relationship between humans and the city. This relationship affects the concept of UPOS as a composition of physical attributes such as accessibility and social characteristics such as the presence of people. Therefore, a strong relation exists between the human and physical aspects of urban public open space.

It would be incomplete to discuss urban design without paying attention to the human being. One can argue that urban public space is therefore the best context to unpack human behavioural interactions. These spaces include all public areas where people have physical and visual access (Madanipour, 1992). In this regard, researchers have carried out studies about pedestrian activities and human behaviour in public spaces in order to enhance their quality.

Gehl (1987) classifies human presence in UPOS into three categories; Necessary activities, Optional activities and Social activities as illustrated in Figure 2.24. Necessary activities are mandatory and participants have no choice. For instance, going to school or work, shopping, waiting for a bus. Optional activities take place when time and place allow and/or if the weather and setting is attractive, for example taking a walk for fresh air, stopping for a cup of coffee on the street, people watching urban life unfold. He recognizes that a “high quality physical environment” will attract more people hence if an urban public open space is well designed; it is more likely to be well used (Gehl, 1987). He further argues that social activities depend on the presence of others in the public space, for example, communal activities, passive contacts such as simply seeing and hearing other people (Gehl, 1987).

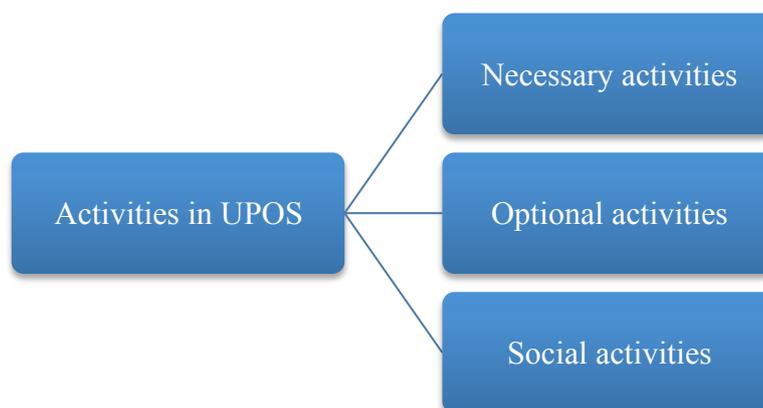


Figure 2.24: Activities in Urban Public Open Space.

Source: Gehl, 1987.

Gehl further created the matrix illustrated in **Figure 2.25** to evaluate what makes a space usable and desirable. He further devised a framework for understanding the relationship between the sociability of public spaces and their design.

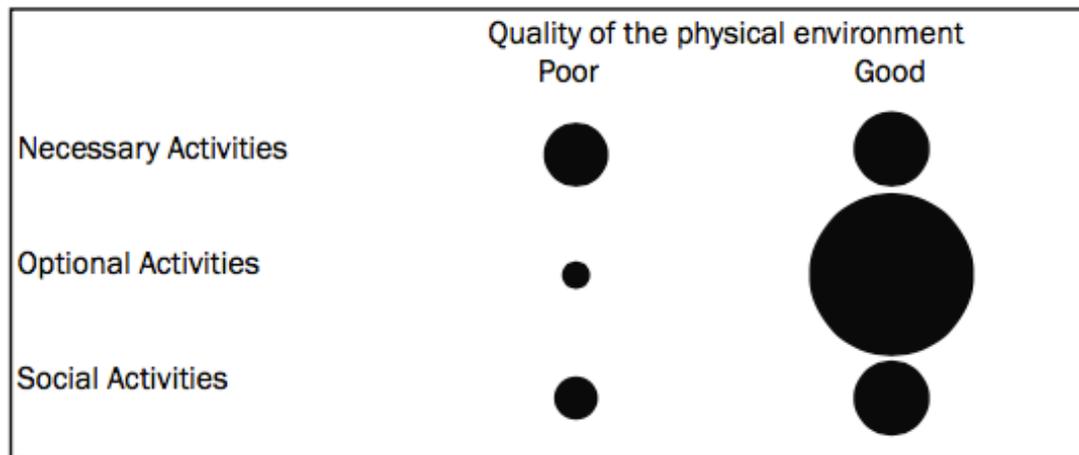


Figure 2.25: The relationship between quality of physical environment and public life.

Source: Gehl, 1987.

Necessary Activities

Gehl argues that these are more or less compulsory activities for people, throughout the year, during any weather conditions. These activities remain at the same level regardless of the quality of the physical environments. Necessary activities could be viewed as activities that require people’s participation, or activities that one has to carry out, such as going to work or school (Gehl, 1987).

Optional Activities

In contrast to necessary activities, Gehl argues that optional activities occur during suitable conditions. High quality environments induce additional optional activities, which, in turn, invite social activities (Gehl, 1987). Optional activities are only carried out by wish, are not forced or mandatory.

The time, place and weather need to be suitable for these to happen. Some of these activities include taking a walk, sitting and sunbathing, standing and enjoying the view. From this perspective, the physical environment plays a major role in

determining whether such activities can be carried out or not (Gehl, 1987).

Social Activities

Gehl further argues that social activities depend on the participation of others in the public open spaces and can either be active or passive. Some examples of active social activities include; children playing, ceremonies, conversations, whereas passive contacts include activities such as watching and listening to other people.

Social activities are related to both the necessary and optional activities because they occur spontaneously, when people meet in a particular place. Social activities are therefore dependent on the quality of outdoor space (Gehl, 1987).

These discussions suggested that if there is adjustment between human acts and the physical and social environment, then open spaces would attract more people and hold them longer, bringing life into UPOS.

2.6 Theoretical framework

Literature review carried out in this chapter, served as a base for the analysis of urban public open space in Rwanda. The Conceptual framework elaborated in **Figure 2.26** serve as a base for the analysis of life in urban public open space in Rwanda.

Montgomery uses three main categories of urban public space; namely Form, Activity and Image/Symbols, with each of them branching further into five sub-categories. For this current study, the sub-categories have provided an important toolkit, highlighting the factors to observe in UPOS.

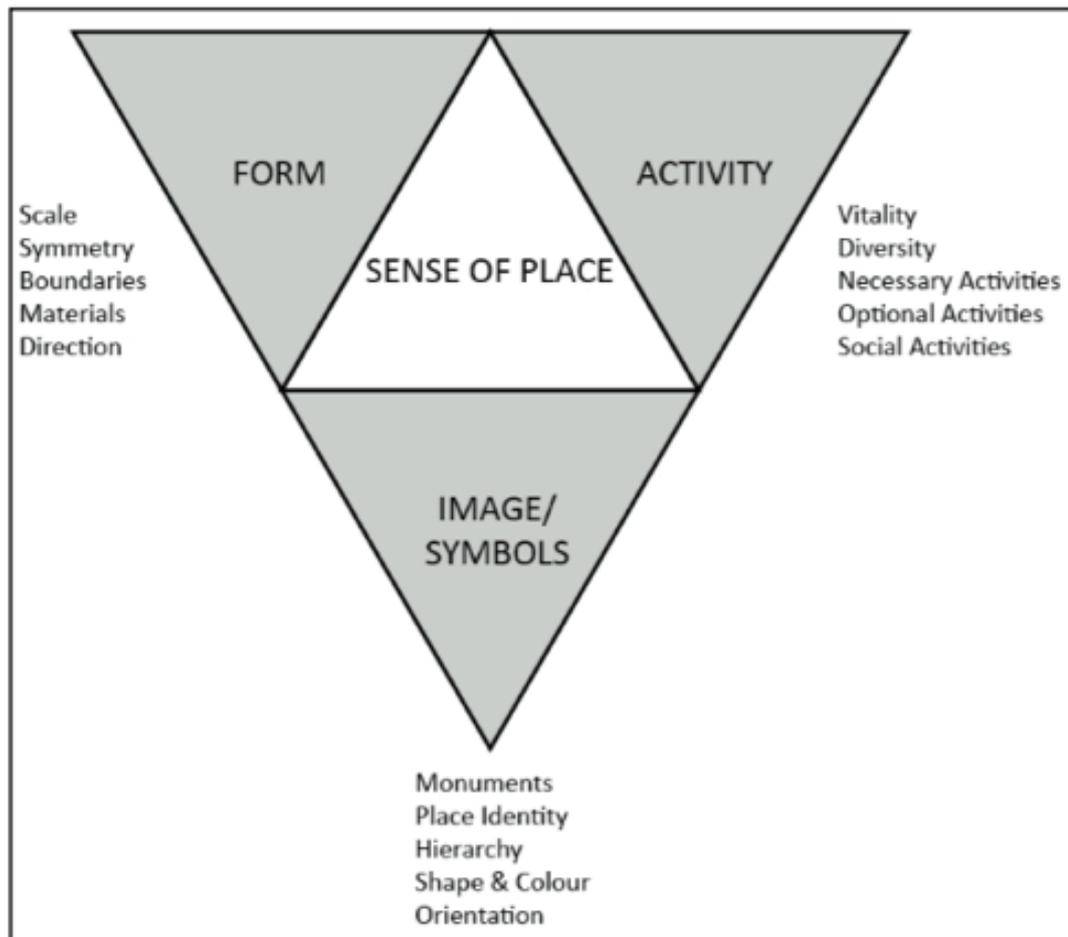


Figure 2.26: The three main categories of urban public open space with their sub-categories.

Source: Montgomery, 1998.

Ching (2007), defines ‘Form’ as a three-dimensional mass or volume; a term that could have several meanings, related to the internal structure as well as the external outline or the whole unity together (Ching, 2007). Ching, further highlights that form is established by the shapes and interrelationships of the planes, which describe the boundaries of the volume (Ching, 2007). Through this lens, form is therefore an essential part of architectural meaning, which is conveyed by the human senses.

Activities play a significant role in the definition of urban public open spaces. Montgomery (1998) and Gehl (1987) have argued that a space with high quality is more attractive to people, and a space where multiple activities take place brings

vitality and diversity to the space. A mixture of many activities together, rather than separate uses, is the key to successful urban places (Gehl, 1987).

Moreover, the actual use of the space does not definitely have to be the same as the function it was originally planned for. This confirms that POS cannot remain constant. They ought to be flexible enough to support diverse activities, and to attract as many users as possible. It is this vitality and diversity of activities that generates the socio-cultural influences that this study investigated.

All urban environments contain important symbols, meanings and values to the people who either reside in them or visit. These signs have been interpreted and understood as a function of a society, culture and ideology. Carmona et al. (2010) divides different signs into three different categories.

Firstly, iconic signs which have a direct similarity with the object such as a painting. Secondly, indexical signs, which have a material relationship with the object such as smoke signifying fire. Thirdly, symbolic signs, which have a more arbitrary relationship with the object and are essentially constructed through social and cultural systems, such as classical columns representing grandeur.

The symbols and images related to the built environment are just like in language, often carrying a fixed message determined by the architect or the constituent but which the reader of the environment can construct a different meaning (Carmona et al., 2010).

2.7 Conceptual framework

A review of the literature in chapter two and the theoretical framework enabled the current study to develop a conceptual model based on the co-existence between physical and social dimensions of UPOS. This relationship is evident in the studies

carried out by (Lynch, 1960; Whyte, 1980; Lang, 2002; Gehl, 1987; Cullen, 1975; Rapoport, 2012 and Appleyard 1979).

In this framework, the physical dimensions represent the spatial configuration and designed elements. The social dimension represents the presence of people and their activities and behaviours. A combination of both physical and social dimensions of space determines the quality of life in an UPOS as illustrated in **Figure 2.27**.

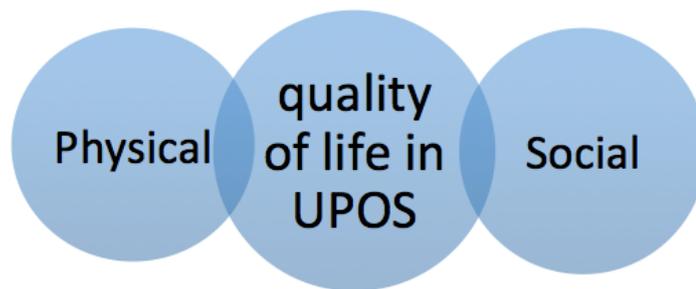


Figure 2.27: Quality of life in UPOS.

Source: Author, 2017

The conceptual model for this study, as illustrated in **Figure 2.28** examines the independent and dependent variables for a liveable UPOS, that which is full of life. The independent variables comprise both the physical and social dimension of UPOS, whereas the dependent variables comprise the liveability of UPOS in terms of its physical and social attributes.

The social dimension of UPOS is mainly supported by the vitality and diversity of activities (Gehl, 1987; Montgomery, 1998), where as the physical dimension is mainly supported by form and image of the UPOS (Carmona et al., 2010; Ching, 2007). Achieving both attributes in turn brings life into UPOS.

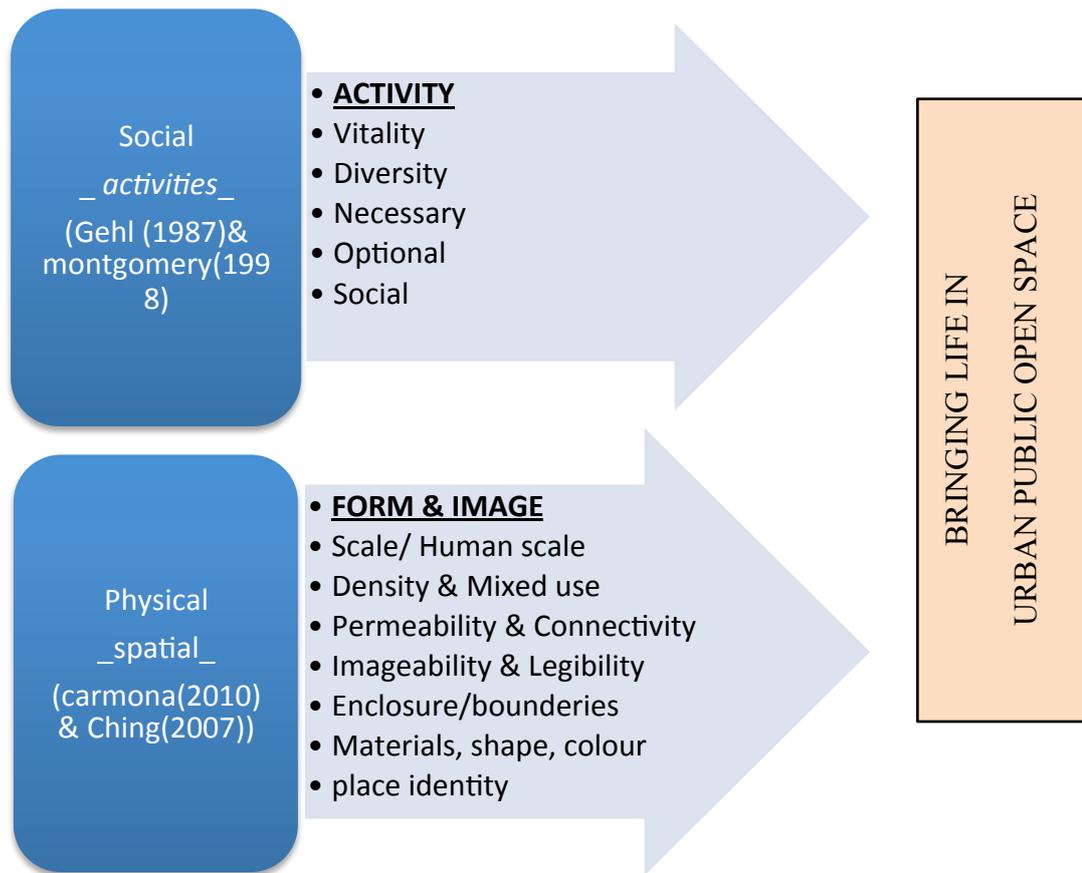


Figure 2.28: Conceptual framework.

Source: Author, 2017 Adapted from (Gehl, 1987; Montgomery, 1998; Carmona et al., 2010; Ching, 2007).

2.8 Conceptual model

The conceptual model for this research as illustrated in **Figure 2.29** looks at the independent and dependent variables for a liveable UPOS, that which is full of life. The independent variables comprise of both physical and social dimension of UPOS, whereas the dependent variables comprise of the liveability of UPOS in terms of its physical and social attributes.

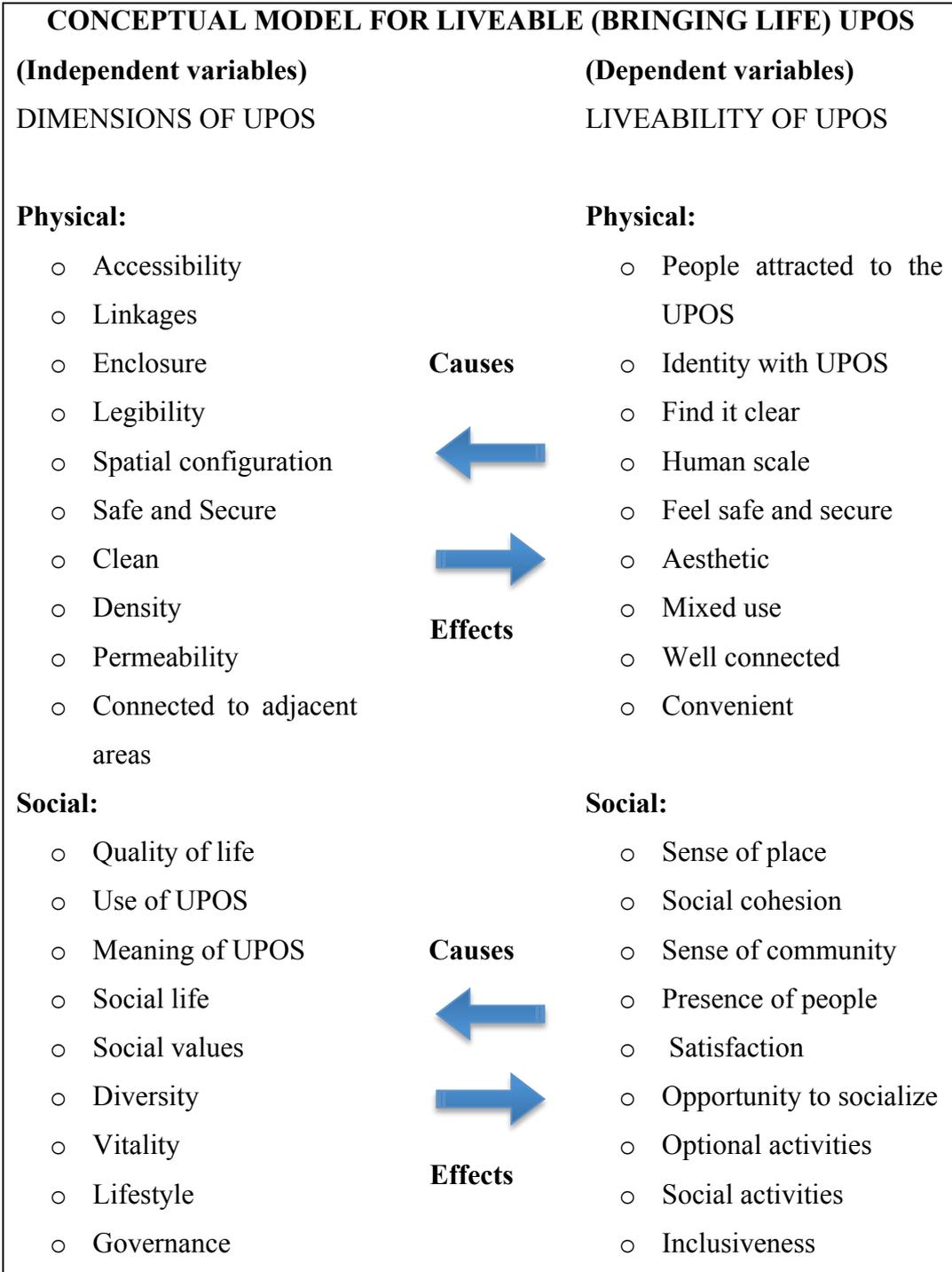


Figure 2.29: Conceptual model for liveable UPOS.

Source: Author Adapted from Gehl, 1987; Montgomery, 1998; Carmona, Tiesdell, Heath and OC, 2010; Ching, 2007.

2.9 Research analytical framework

The analytical framework for this study drew on the knowledge gained from the literature to identify concepts and criteria for measurement in the empirical work, classified around the three main components of UPOS namely; form, image and activity and interpreted them as products of the planning of UPOS, the use of space and culture respectively, as illustrated in **Figure 2.30**. This framework and its interpretation therefore directed the researcher to focus on how the physical form of UPOS impacted on the quality of life; derived from the social meaning that people make out of these spaces.

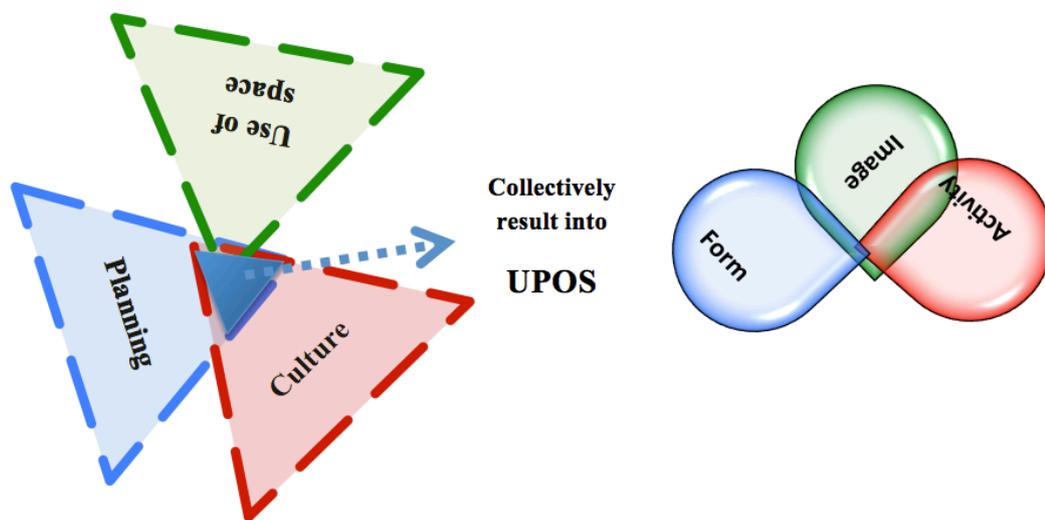


Figure 2.30: Research analytical framework.

Source: Author Adapted from Gehl, 1987; Montgomery, 1998; Carmona, Tiesdell, Heath and OC, 2010.

The users' identification with the space in turn influences their patterns of use and more importantly, the duration of stay.

Table 2.4 presents a matrix for the liveability of UPOS, detailing the key dimensions, references, the issues of focus as well as categories and subcategories of the same. This is further broken down into criteria for evaluation, stringing together the main elements, which are the focus for this study.

Table 2.4: Liveability of UPOS

Title	THE LIVEABILITY OF UPOS							
Key dimension	PHYSICAL				SOCIAL			
Reference	A physical site; with built (buildings/houses) and unbuilt (open courtyard) areas.				The social realm; the uses and users of space			
Issues/ Focus	How the physical environment impact the quality of life				The Social meaning and identification with space/place			
Category	Spatial	Place	Built	Environment	Uses	Users	Activities	Patterns
Sub-category	Spatial environment	Place making	Characteristics	Place keeping	Inclusiveness	Diversity	Engagement	Interaction
Criteria	Access and linkage Comfort and image Uses and activities Presence of people and sociability	Quality of Life Function	Location Form Size Structure	Management Maintenance Landscape	Safe Comfort Image	Age Gender Income	Necessary Optional Social	Orientation Linkages

Indicators	Design elements - Legibility - Attractiveness Visual features - View/vista	Accessibility Walkability Mobility Participation Relation with others	Urban form: Paths Edges Districts Landmarks Nodes	Micro climate - Shelter, ventilation Clean Funding Public realm Public space	Place justice Social interaction Social events Play area Sitting space Shaded area	Number of users Sense of belonging	Soft edges Food Drink Recreational Activities Vendors	Mixed use Network
5 liveable dimensions by PPS	Comfort: - Seating - Green space - Shelter	Access - Physical access - Visibility - Linkage	Function - Activity areas - Multiple offers - Facilities - Food and stores	Maintenance - Lighting - Cleanliness - Care - Security	Sociability - Presence of people - Social interaction - Diversity - Participation			

Source: Author, 2017 Adapted from (Gehl, 1980; Montgomery, 1998; Carmona et al, 2010; Ching, 2007; PPS, 2011)

The liveability matrix was further broken down into attributes that would be easy to measure in the field. The independent variables were classified into beneficial and harmful attributes, which the study would be able to easily pick out at the site during the field surveys as illustrated in **Table 2.5**.

Table 2.5: Operationalization of all independent variables.

LIVABLE DIMESNION		Beneficial attribute	Harmful attribute
PHYSICAL DIMENSION	Comfort	a) Benches b) Trees c) Grass d) Shelter	a) No appropriate seating b) No trees c) No grass d) No shelter
	Access	a) Safe crossing b) Traffic light c) No barriers d) Bus stop	a) No Safe crossing b) No Traffic light c) Fence and gate d) No public transport
	Function	a) Play ground or sports field b) Market c) Stores d) Public toilet	a) No Play ground or sports field b) No Market c) No Stores d) No Public toilet
	Maintenance	a) Proper lighting b) Garbage cans c) Signs for rules d) Nice, groomed ground	a) Improper lighting b) No Garbage cans c) No Signs for rules, visible vandalism d) Non-groomed ground
SOCIAL DIMENSION	Sociability	a) Individuals and groups of different age, gender, income b) Presence of people c) Social interaction d) Diversity e) Participation	a) No groups, or monolithic groups b) Absence of people c) No Social interaction d) No Diversity e) No Participation

Source: Author, 2018 Adapted from (PPS, 2011)

This framework therefore directed the researcher to formulate relevant enquiries for the analysis of UPOS in a contemporary urban neighborhood of Kigali.

For the physical dimension of UPOS, the study examined selected contemporary UPOS using the following interrogation;

- i. What was the physical form of the UPOS, based on Ching (2007).
- ii. What were the elements of the UPOS, based on Lynch (1960). How UPOS is organised and what features are present in it.
- iii. How the neighbouring structures have been clustered. The neighbourhood to determine if there were other UPOS or community buildings and how these related to the case study. The relation to the adjacent street or roads.
- iv. What was the provision for UPOS in terms of processes and policy?
- v. What modern interpretations and/or adjustments are visible, evident from the traditional public facilities?

For the social dimension of UPOS, the study examined selected contemporary UPOS using the following interrogation;

- i. What is the demographic character of the current population and what lifestyles differences exist between the contemporary and indigenous society.
- ii. How are UPOS used and what kind of activity occurs in them, based on Gehl (2001)
- iii. What kind of social events are organized in the UPOS, based on Gehl (2001). The levels of existing social interactions and how well people knew each other.
- iv. Was the physical space well integrated with the socio-cultural activities, based on Gehl 2001, Carmona 2010, Whyte 1980.
- v. Were there any community-based organizations in the neighbourhoods, and/or any other tools available for catalysing social networking.
- vi. Did people feel a sense of belonging in the UPOS, its neighbourhoods and could they identify with it.

CHAPTER THREE

3 RESEARCH METHODS

3.1 Introduction

This chapter presents the methodology used in conducting the research, and sets out to understand and evaluate the concept of *akarubanda* and extract lessons on the transformation of the physical and social conditions of public open space applicable to bringing life into contemporary urban settings.

3.2 Research design

The traditional qualitative case study research was used to connect the empirical data to the initial research questions and ultimately to help the study achieve its objectives. According to Flyvberg (2011), the main strength of the case studies is the depth, which translates to detail, richness, completeness and within-case variance. Research design helps to specify logical sequence for the study.

Three main processes were followed; the data collection process, the instrument development process (methods and techniques) and the sampling process (Bhattacharjee, 2012). The study used a combination of techniques; qualitative and quantitative data was used although there was a bias towards qualitative methods. This is because the goal was to collect adequate and diverse data, in order to generate the best insights and knowledge on the study (Bhattacharjee, 2012). The main point was not only the recognition of activities and physical form, but also the understanding of these places and how they affect activities occurring. Canter (1977), believes that to get the correct answer, one should find out what people think about a place (Canter, 1977). This approach results in a bias towards qualitative methods.

Learning from the different techniques applied in other similar studies, a few scholars have used interviews, questionnaires, observation and mapping (Gray & Julian, 2004) to yield good quality results, from data collected at the site. The study applied a mixed methods approach in order to unpack the interrelation between urban space and users activities, and specifically how the relationships impact on the quality of life in UPOS.

Given that the study analysed a combination of the physical and social aspects of urban public open space, the understating of how spatial components influence the quality and performance of UPOS was largely arrived at through observing and recording real life situations at the specific sites. This approach made the study rigorous and robust because it involved “triangulation”, which is defined as identifying something through varying perspectives. Triangulation, therefore allowed the study to test ideas, and it was profitable because one method covered up the weakness of the other (Gray & Julian, 2004).

Primary data from the site provided direct information about the experiences and challenges that residents have and face when using the UPOS. On the other hand, a review of existing relevant literature on the subject areas was important in filling any gaps that primary data may have left out. Therefore, through case studies, the research approach became inductive; whereby data collected through mixing a variety of methods and techniques generated theories (Denscombe, 2007). Further, as noted by (Varna & Tiesdell, 2010), the interpretation of policy makers intentions, users and non-users and their rootedness in interactions and contexts were critical in providing deeper understanding of the situation which in return was more beneficial to answering the study question.

The question of bringing life into public open space focused mainly on how and why rather than how many or how much; it focused on tracing the status of POS in both traditional and contemporary settings in relation to the physical and social processes

that produce it. First, it focused on how these POS are produced, used and perceived, capturing what they mean to their uses, what kinds of social activities and interactions occur and how this social environment is influenced by the physical settings of the POS. Secondly, it enquired why POS in the contemporary city largely remain empty, devoid of life, why there are no formal POS in Kigali and why the informal POS remain largely empty.

In order for this study to identify its position between the theoretical and practical worlds; the perceptions and logic, the study approach aimed at justifying and locating the research methodology adopted in this study. As illustrated in Error! Reference source not found., three elements of the process identified were the theoretical perspective, methodology and methods adapted from (Crotty, 1998)



Figure 3.1: The three elements in developing the research process.

Source: Author Adapted from Crotty, 1998

3.2.1 Case study approach

The case study approach was selected as the primary method of investigation because the approach would be useful in the analysis of contemporary phenomena of public open spaces, which are rather complex and display similarities and differences from the traditional public open spaces in Rwanda. According to Flyvberg (2011), case studies help a study to better understand context and process, hence achieving high conceptual validity, which in turn helps the study to unpack the causes of a phenomenon. This further helps research to link causes and outcomes, helpful in the fostering of new hypothesis and raising new research questions (Flyvberg, 2011). This made the case study methods to be most relevant to this study, especially given its pioneering role in the field. Flyvberg (2001) has argued that predictive theory has

less utility in social science since the context in which human activity is based seems to be more vital to understanding the phenomenon, than the human activity itself (Flyvberg, 2001). The concept of *Akarubanda* studied in this study, is a purely Rwandan concept and as such, the case study method, facilitated a deeper understanding of the context-specific knowledge of the same.

As per Yin's (2003) observation, research questions such as why and how are most appropriately answered through the case study method. Since this current study attempted to investigate how the urban development of Kigali has affected POS and how the concept of the traditional public space(*akarubanda*) can be applicable in bringing life into contemporary POS, the case study approach therefore become appropriate.

Yin (2003) also recommends the use of case study method when the boundaries between the phenomenon and the context are blurred at the beginning of the study, which is so true of the current study. In Rwanda, the phenomenon of the disappearance of POS is observable, in the context of a rapid urbanising city, and particularly the urban and peri-urban neighbourhoods.

Yin (2003), further recommends the use of the case study method when the research covers both a historical and a current period. Indeed, this current study, lies in both periods, whereby in the current period, the study relies on data collected through field visits and observations while at the same time it benefited from insights drawn from historical data and the reference data, which provides lessons for application, in contemporary POS.

Again, because this study was context-specific, set on the *akarubanda* in Rwanda, the case study method offered a positive opportunity for imparting expertise and values useful to society. According to Flyvbjerg (2004), context-dependent knowledge is at the very heart of the case study as a learning method. This study thus

attempted to understand the phenomenon within its real-life context in Rwanda, in order to attempt to extract lessons applicable in contemporary POS.

The selection of Rwanda as the setting of the study was primarily based on familiarity with the country, and experience with design studios on public space around the city of Kigali. These studio projects were the stimuli for this study and they progressively highlighted gaps in the domain of POS provision in the city, as well as making visible significant socio-cultural influences in the composition of contemporary UPOS in Kigali. The University of Rwanda's collaboration with the city of Kigali further placed the study in an advantaged position to create networks with urban planning officials and to understand both the planning and market dynamics surrounding public space.

Kigali is also one of the fastest growing cities in the East African region, and her urban vision of a leading city of excellence in Africa, created her labelling as 'the Singapore of Africa'. It is impossible to forget the unfortunate past of Rwanda where atrocities committed against humanity culminated in the 1994 genocide during which over one million Rwandans were killed, others fled the country and infrastructure was damaged. Rwanda is still viewed as a young economy but it is vibrantly rising from the ashes of this sad past. Due to the on-going rapid urbanisation, Kigali city is heavily characterised by informal settlements, hence there is a rich variety of different types of UPOS, exposing varying levels of opportunities and constraints.

Case studies allow the exploration of different phenomenon, populations and activities that the researcher has no control over, to determine data samples from specific locations (Bryman, 2008). The study structure illustrated in **figure 3.2**, considered the research problem as a suitable guide to govern how the criteria, methods and techniques are interlinked in order to make interpretations better understandable.

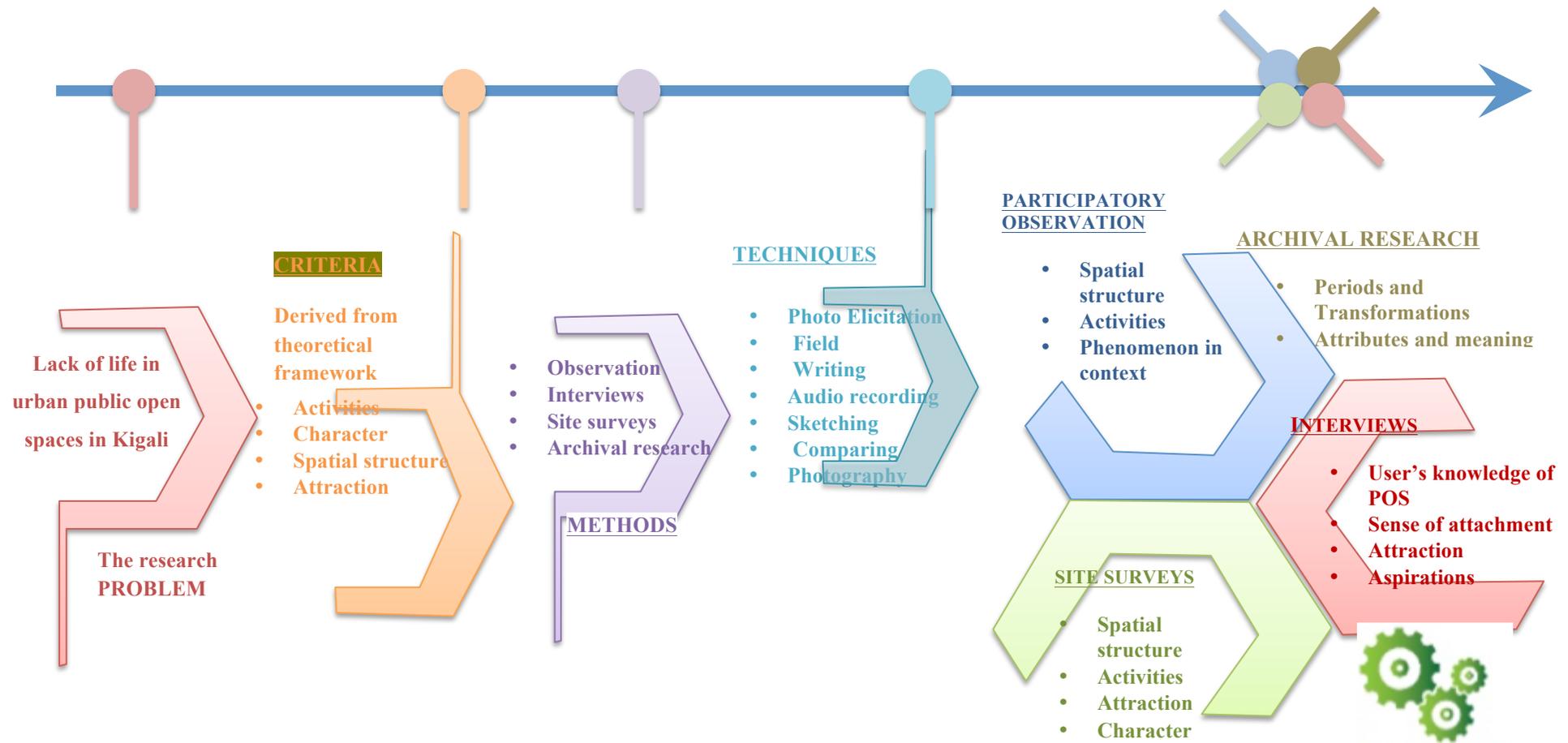


Figure 3.2: Research Structure.

Source: Author, 2017

3.3 Sampling the Units of Analysis

This section introduces the unit of analysis, which were urban courtyards. It further introduces the three case studies used as the research sites. The target population is also introduced in this section, alongside the samples and sampling techniques used. The section then introduces the adjacent population, critical in this kind of study, benefiting from the opportunity of listening to the opinions of people who did not, or normally do not, participate in case study activities.

3.3.1 The Unit of analysis

The main unit of analysis in this study was urban courtyards. Based on the main study question, the two dimensions of public open space; physical and social as illustrated in **Figure 3.3**: , made it possible for the unit of analysis to be identified and embedded within each case. The unit of analysis further facilitated the process of the research design, focusing on the nature of research data to be collected based on the empirical indicators in **Table 3.1**.

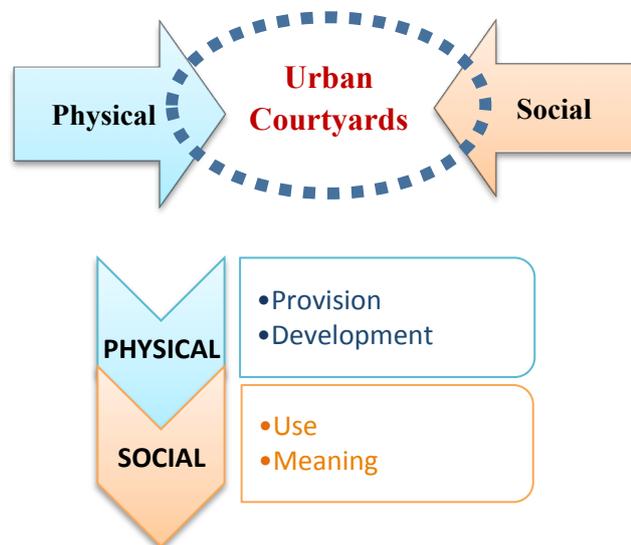


Figure 3.3: Dimensions and aspects of urban Courtyards.

Source: Author Adapted from Gehl, 1987; Carmona, Tiesdell, Heath, and OC, 2010.

Table 3.1: Unit of analysis' embedded components and their empirical indicators.

Dimension of public space	Unit of Analysis' embedded component	Empirical indicators
PHYSICAL	Provision of POS	<ul style="list-style-type: none"> • Morphology • Formation and configuration • Physical design features; location, size, orientation, layout • Physical elements present • Management; ownership, control, accessibility
	Development of POS	<ul style="list-style-type: none"> • Urban design guidelines • Policy and regulations
SOCIAL	Use of POS	<ul style="list-style-type: none"> • Pattern and frequency of use; daily, week/end, seasonal • Type of activities; necessary, optional, social • Location and timing of use
	Meaning of POS	<ul style="list-style-type: none"> • Understanding of purpose and significant of POS • Potential benefit of using it • Knowledge of neighbors • Social interaction • Sense of community

Source: Author, 2017

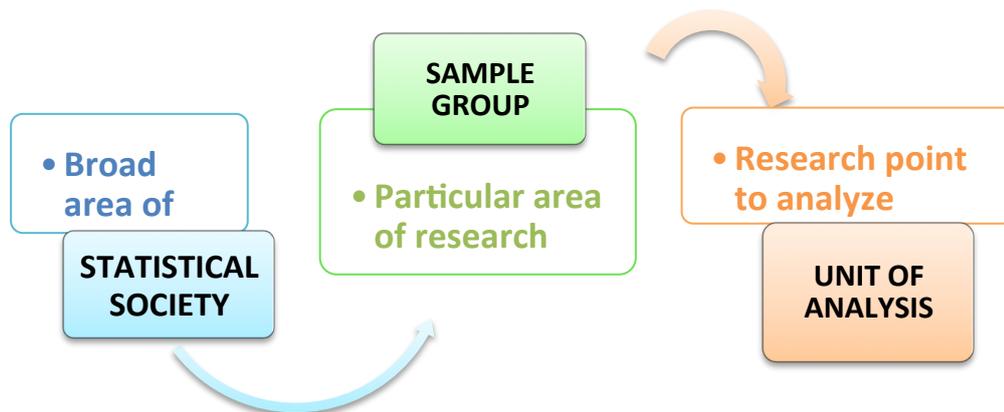


Figure 3.4: Research process.

Source: Author, 2017

3.3.2 *The Research Sites*

Traditional public spaces in Rwanda have almost disappeared. This is coupled by the gap indicated by the glaring absence of UPOS in the contemporary city. The current provision of contemporary settlements in Kigali was found to be not only varied in nature, but also transforming rapidly alongside urbanisation.

This trend evidently produced UPOS with similarities and differences, from the traditional setting. These differences were not only in the physical components but also the social environment and development approaches and hence heavily influenced the choice of a comparative analysis.

Three case studies were therefore chosen to represent the traditional setting, the transformative and contemporary settings at the micro and macro scales, as well as the formal and informal UPOS. The case studies rationale is as summarised in **figure 3.6** and **figure 3.7**.

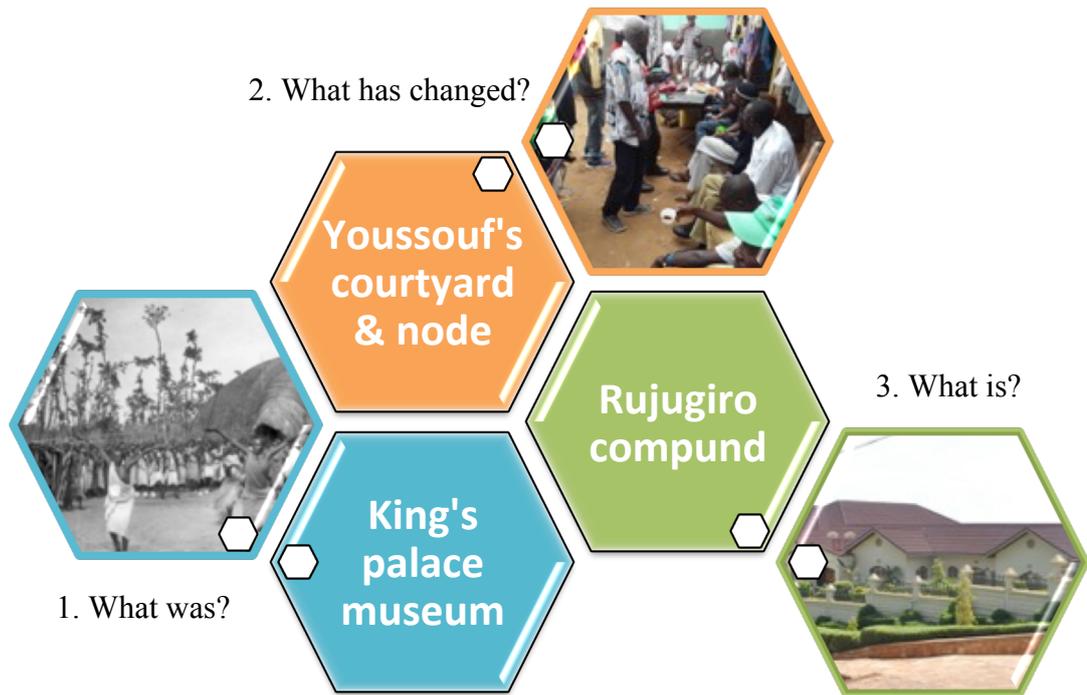


Figure 3.5: The three case studies of contemporary UPOS in Kigali.

Source: Author, 2017



Figure 3.6: Multi-case study design with the embedded components of the unit of analysis.

Source: Author Adapted from Yin, 2003

3.3.3 Justification of the choice of case studies

To achieve the recommended 3-4 number of case studies, (Rukwaro and Anyamba, Personal communication, June 27), the study identified the three case studies; a traditional one, a transformative one and a contemporary urban public open space.

Case study 01, the King's palace museum (KPM) in Nyanza is taken as a reference. This is because it is the only existing physical example of the Rwandan traditional settlement. Currently, it is used as a touristic museum whereby the physical configuration has been preserved, while the narratives of the indigenous social construction of the same, are presented to visitors by the tour guides

Case study 02, Youssouf's courtyard and Node (YCN) serves as an informal urban courtyard and urban node open to all, where the main activity is drinking coffee and chatting. It is chosen because it is the oldest existing urban courtyard in Biryogo sector, which is considered as the native neighbourhood for Kigali city. The close proximity of YCN and Kigali's CBD was also interesting for the study. This juxtaposition was as a result of colonialism whereby in order to settle the first German imperial president to Rwanda Richard Kandt, the Rwandans who initially lived in Muhima at the start of the 19th century were relocated to Biryogo sector.

In between the native neighbourhood of Biryogo and the Richard Kandt colonial quarters in Muhima was the camp Kigali military installation until 1997, when it was transformed into a technical university, now the College of Science and Technology of the University of Rwanda (Malonza, 2015). Indeed this connection between Biryogo and Kigali city helped the research to gain deeper insights, for instance; Mzee Ausi Madjutu, an elder, aged 104 years (in 2018) was one of the key interviewees in this study. He was a witness to this transition and now lives in Biryogo with his children, grandchildren and great grandchildren.

Indeed the popularity of Youssouf's courtyard brought to the surface a rich diversity of people and activities useful for the study. As the oldest existing urban courtyard in the native neighbourhood, it supposedly had a higher level of social consolidation than any other courtyard in Biryogo. The Swahili culture, borrowed from traders during the colonial era, made it possible for the study communication to be carried out in Kiswahili, which most of the adult residents speak. The nature of social cohesion over coffee '*ikahawa*' and tea '*ichayi*' also made it possible to easily locate and hold focus group discussions.

Case study 03, Rujugiro compound (RC), is owned by Mr. Rujugiro, who is considered one of Rwanda's rich persons (*umutware*), and his house –also referred to as palace- was constructed on the slopes of Juru hill. During the period of the research, the house had been transformed into a public facility referred to as Rebero inn hotel, which mainly hosted wedding receptions, bringing together local residents as well as visitors, mostly from rural Rwanda.

Since Rujugiro had wanted to live like a king, the house is arranged peripherally, leaving a courtyard in the middle that is used for social events. His compound hosts a swimming pool, servant quarters, big gardens and lawns. At the time of construction in 2006, it was the only permanent structure surrounded by greenery, but today, the house has been converted into an urban courtyard, which benefits immeasurably from the initial conceptual layout. The hotel further offers an additional package beyond renting the wedding space, to offer accommodation for the immediate relatives to the bride and groom, such as parents, uncles, aunts and grandparents who have the option to live in the palace, for a few days after the wedding. This in itself became an opportunity for the study to meet the elderly people that gave rich inputs into the study.

In summary, whereas the first case, the King's palace was the traditional and reference case study, the two other case studies selected, represented a transformative

and a contemporary UPOS in Kigali based on time, method of formation and scale of influence. Whereas RC was contemporary, formal and at macro scale had meaning and benefits for the city and country, YCN was transitional, informal and at micro scale had meaning and benefits for the family and neighbourhood.

The scale was emphasized because the study envisaged that at the macro-scale, it would answer questions regarding the physical and functional dimensions such as accessibility, ownership and activities. However, at the micro-scale, the study would answer the social questions of how the POS is perceived and consumed by users.

In Kigali today, several urban neighbourhoods and courtyards can be identified following the on-going rapid urbanisation. Informal housing settlements dot the entire city, and in most cases are juxtaposed against the more formal and affluent parts of the city, in an haphazard manner, forming a patchwork of heterogeneous settlements where specific differences can be only identified in the individual units; the houses (built) or courtyards (un-built). As a result, it would be difficult to select a neighbourhood as a case, since they all seem to contain similar characteristics. It is only until 2010 that housing estates started mushrooming; the new estates are located over 10KM away from the city centre, and thus seem to be geographically outside the peri-urban area of Kigali.

The study consequently adopted a multiple-case design following the logic of replication in which contrasting results are predicted for anticipatable reasons (Yin, 2009).

3.3.4 Description of case studies

3.3.4.1 KPM

It was constructed in 2008 as a replica of King Yuhi Musinga's residence. Musinga was the King of Rwanda between 1896 and 1931. Under the reign of King Yuhi V Musinga in 1899, Nyanza became the royal capital of Rwanda.

The study of the KPM as the reference case sought to answer questions such as;

- What were the overall spatial characteristics of Rwandan traditional POS-*akarubanda*?
- What were the overall social characteristics?
- How much of it was really public?
- What were the modes of accessing it?
- What features demarcated its boundaries?
- What activities happened there, when and how?
- What services were provided?
- What was the level of maintenance?
- What did it mean to the people?



Figure 3.7 a and b: The main entrance (a) and the King's house (b)

Source: Author 2017

3.3.4.2 YCN

Currently, Biryogo is one of the richest informal settlements with a high population density. Youssouf's house shown in **Figures 3.8a**, is the oldest standing house in Biryogo. It was constructed in 1920's by Youssouf's grandfather using mud, wattle and grass thatch. It was later changed to tin sheet roofing in 1940 following USA aid of cooking oil... the house sits peripheral to an open courtyard with other 5-6 units as illustrated in **Figures 3.8b**.



a

b

Figures 3.8 a and b: Yousseuf’s compound’s old house (a) and inner courtyard (b)

Source: Field survey, 2017.

During pilot studies, as illustrated **Figures 3.9 a and b**, the researcher could start interviews with 2-4 people and within 30minutes, there would be over 40 people in the courtyard, wanting to share information and experiences, with benefiting from the coffee offered as an incentive for data collection.



a

b

Figures 3.9 a and b: A key informant interview session at the start at 1230h (a) and at the end at 1400h (b)

Source: Field survey, 2017.

3.3.4.3 RC

As Illustrated in **Figures 3.10 a, b and c**, the entrance porch is characteristic of royal status, the luxurious limousine car is occasionally hired for weddings, during which Rujugiro’s former bedrooms, servant quarter and guesthouse serve to contain the visitors. The manicured gardens now serve as background scenes for photography during weddings ceremonies. Some ceremonies not necessarily held here may consider this compound just for the ‘photography’ session of their ceremony.



Figures 3.10 a, b and c: Rujugiro’s palace; entrance porch (a), car park (b) and gardens (c).

Source: Field survey, 2017.

The author’s pre-existing familiarity, of both cases which lie within her home to work path, was an added advantage as it made it easier to plan impromptu visits or to simplify fieldwork logistics. Additionally, the various studio modules conducted on the topic of public space in selected neighbourhoods of Kigali have offered the research with rich knowledge of the areas that is very useful in data collection and analysis.

3.3.5 The Target Population

Target population was mainly the people who attended various social activities in selected UPOS/*akarubanda* to understand the use of the space. The urban planners were also involved to provide an understanding of the rationale behind provision and development of UPOS.

Since this research is embedded on Qualitative methods of data collection, the meaning of reality in UPOS is socially generated by individuals and groups. Methods to engage both professionals and lay people, as providers and/or of space simultaneously, were therefore selected and analysed to emphasise the phenomena through individuals and groups' perceptions of either users of space (the lay people) or professionals.

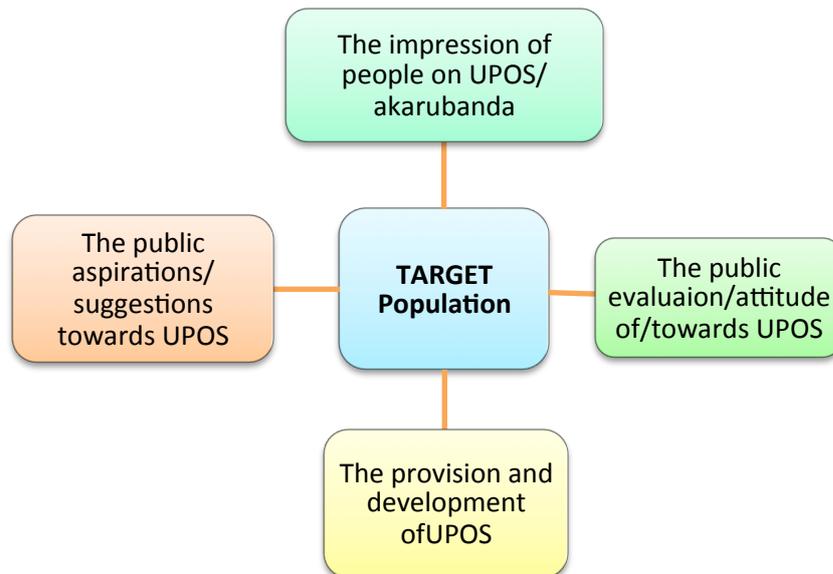


Figure 3.11: Main enquiries from the target population.

Source: Author, 2017

The Target data intended to represent the impression of the target population in the selected UPOS. Their public evaluation, attitude and suggestions towards the UPOS were a reflection of their degree of comfort and related with UPOS's physical and social dimensions as illustrated in **Figure 3.12**.

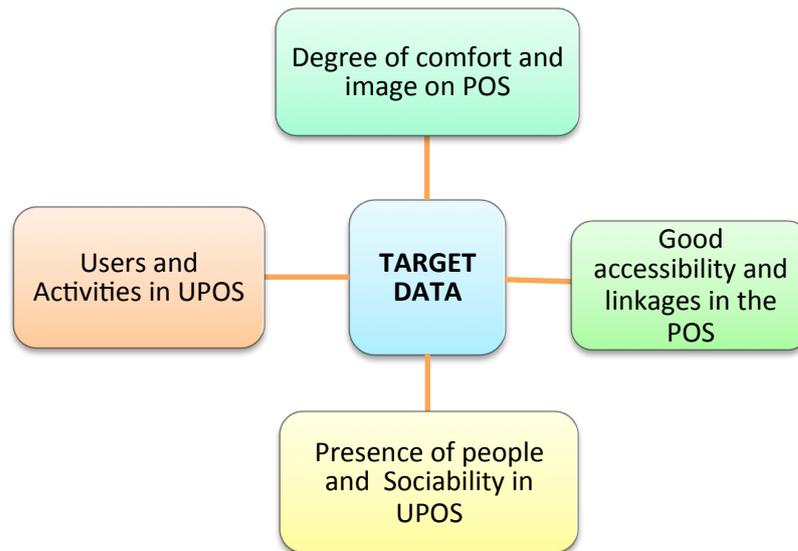


Figure 3.12: Main components of target data.

Source: Author, 2017

The target population’s scale of sense of place was evaluated in the likert scale of 1-6, using the description illustrated in Table 3.2.

Table 3.2: Scale of sense of place.

Scale of sense of place 1=Weak 6=Strong	Description
1. Can identify the UPOS	Knows the location, the different parts and what happens inside the place.
2. Wants to conduct activities inside the UPOS	Wishes to visit and do some basic activities inside the place
3. Has a casual participation in the events at the UPOS	Comes to major events held at the place once in a while
4. Wants to linger in the UPOS	Feels familiar with the status of the place and wishes to enjoy being there longer
5. Attached to several places in the UPOS	Has preference to specific or several areas within the place
6. Actively participates in the UPOS	Participates actively and wants to be part of the space frequently, joins multiple events in the space

Source: Author, 2017

3.3.6 The Sample Size

Considering that the study was social, and was relative and diverse in the sense that different people have different experiences and perceptions of UPOS; it became important for the study to pick sections of the population or UPOS areas to frame a study sample. According to Rukwaro (2016), sample size is a portion of a population chosen by some clearly defined set of procedures.

By zooming into the target population, the researcher settled on a sample, perceived as representative of the whole group for testing and analysis. In order to ensure the quality and effectiveness of the data, sampling was carried out carefully, following considerations such as gender, age, occupation and the educational level.

The researcher initially visited all urban courtyards in Biryogo and all accessible social spaces in the city of Kigali in order to select those that best fit the criteria for a study of urban life, as per the study objectives.

The pilot survey, settled on Youssouf's courtyard, not only because it was the longest courtyard existing in Biryogo, but also because it was a vibrant courtyard and later the node, and a rich base for the study. The pilot survey also enabled the study settle for the Rujugiro compound as an example of a contemporary UPOS whose size, configuration and use as wedding grounds qualified it as a satisfactory site of investigation, meeting the objectives of the study.

3.3.7 Sampling Techniques

Sampling is referred to as the act, process or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining the parameters or characteristics of the whole population (Mugenda and Mugenda, 2010) in (Rukwaro, 2016).

Due to the diversity of the issue to be studied, random sampling, being a probabilistic sampling method (Rukwaro, 2016), was applied in the study. It was not practically possible to get a defined list of users or participants of UPOS. The study therefore estimated numbers out of which the sample and sampling technique was determined. By speaking to parking attendants and security guards, managers and neighbours, it was possible to estimate the number of people that visited the UPOS, during certain times of the week, month or year.

Using Cochran's (1977) formula to calculate sample size (Bartlett, Kotrlik and Higgins, 2001), for instance for case study two, the study assumed that half of the Biryogo cell population visits Youssouf's courtyard giving a maximum variability of 0.5, the research further desired a 95 percent confidence level and at least 5 percent - minus or plus- precision. This gave a sample size of 29.7, which was approximated to 30 persons.

3.3.8 Adjacent Communities Sample

The neighbours, who lived within a radius of one kilometre km, for RC and half a kilometre for YCN were identified and further classified according to those that visited the UPOS and those that did not. The study elected to use a purposive sampling technique; because it fitted the bill recommended by Rukwaro (2016) as non-probabilistic, the idea was to understand the impact of the UPOS to the adjacent neighbourhoods. Ten participants were selected for the RC and five participants, including the executive secretary of the Biryogo cell, were selected for the YCN. A total of 15 members of the adjacent communities were thus selected from UPOS in Kigali.

3.4 Research Tools

This study was about bringing life into UPOS. It assessed the planning and urban design influences from the traditional *akarubanda* that can be applied in providing successful urban places in the contemporary city of Kigali. The nature of this topic

was therefore subjective given the different opinions held by individuals, albeit including an assessment of ‘objects’ or, in this case, UPOS. In this perspective, the reference case study of the king’s palace museum in Nyanza was used.

Through the iterative research approach explained above, mixed qualitative and quantitative methods were used for data collection and analysis. The selected methods were either qualitative, or quantitative in nature, or a combination of the two approaches, but all interlaced in order to fulfil the objectives of the study. They included; literature review; urban design audit and visual assessment of case study UPOS in Kigali city, providing both individual and professional perceptions.

They further included; observation and behavioural mapping of the case study, utilising a more ‘objective’ approach; administration of questionnaires to case study UPOS users, providing a quantitative/qualitative assessment of user perceptions and finally document review and semi-structured interviews with professionals, community representatives and policy-makers, providing perceptions of the various planning and urban design concepts.

Table 3.3 illustrates a summary matrix of the tools used, the data needs and sources as well as the variables assessed by using each of the research tools.

Table 3.3: Sample of data needs, resources and variables assesses

Research tool	Data needs	Data sources	Variables assesses
Participant observation/ urban ethnography	Physical layout of the place. Physical elements present. Evolution of place. Things that people are trying to achieve. Unfolding stories	Field and author Research assistants	Social actions, behaviors, Interactions, relationships, connections Daily life Number of users Effect of other

	Understand social life		contextual parameters mode of interaction with researcher Physical transformations
Questionnaires	User's demographics Activities that people carry out. The sequence or patterns of events. The emotions felt and expressed	Users of space Users of adjacent space Urban planners	Number of users Range of people involved. Types of activities. Durations of stay.
Interviews	User's knowledge about the UPOS Sense of attachment Uses and Meaning Perception User's aspirations	Users of space Users of adjacent space Urban planners University faculty	Planning policies Maintenance policies Methods and processes for access (formal UPOS) Uses User patterns Meaning of UPOS to users, visitors, The existing problems Respondents' reactions to the history of UPOS
Key Informant Interviews	User's knowledge about the UPOS. Historical and chronological evolution of UPOS. Unfolding stories	Elderly persons living in or around UPOS Urban planners University faculty	Evolution of UPOS Socio-cultural influences. User patterns Meaning of UPOS to users and visitors
Site surveys/ mapping	Conditions of UPOS How it affects use	Field photographs Satellite mages Walks or drive through	Size, location Ownership Uses, activities

		Observation in the field Emotions felt and expressed	Accessibility Functional and physical connectivity Value dots
Archival research	Nature of traditional public space. Transformation of public space	Historical archives Old photographs Old post cards Books on history	Periods Attributes Socio-cultural influences

Source: Adapted from Rukwaro, 2016, p. 37.

3.5 Data collection Methods

Data collection was carried through a series of site visits using the designed techniques illustrated in **Figure 3.13**, as well as a review of documents of similar studies.

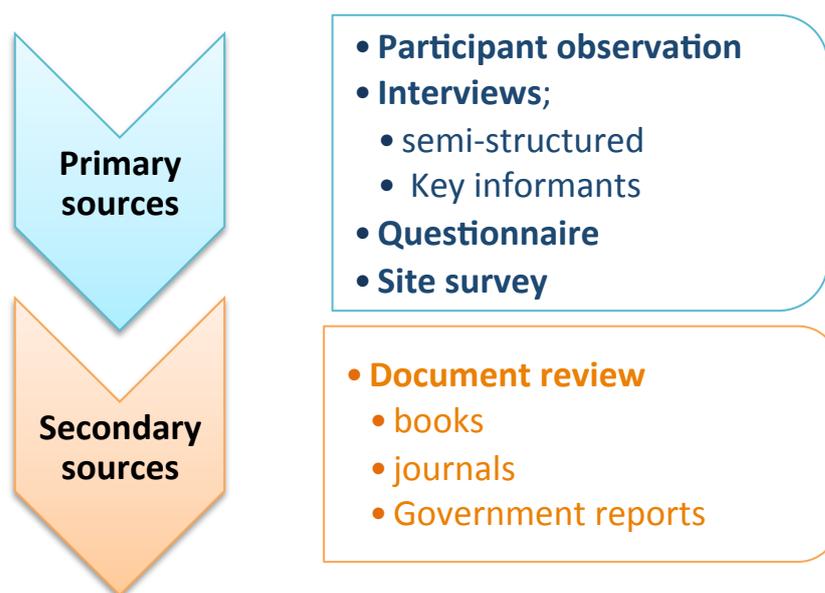


Figure 3.13: Methods of data collection.

Source: Author, 2017

Different methods and tools were utilized, and the chapter is structured around these methodologies. The researcher believed that evaluating a space by utilizing multiple techniques certainly tapped into the diverse strengths of each method and potentially created a strong evaluation framework which valued both the physical dimensions (character of the urban fabric) and the social dimensions (user responses to space), as well as the interrelationship between both.

First, a pilot study was conducted to test the questionnaire, interview structure and mapping. This consequently helped the researcher to sharpen its focus and revise questions to avoid duplication and redundancy. Using observation and behaviour mapping, the study illustrated the users' activities in the space in terms of how they use and interact with space and also among themselves.

Secondly, the assessment of the UPOS and its adjacent urban fabric for each case study, was conducted through interviews and mapping, focused on the relationship between space and its surrounding urban use. The study analysed the UPOS character, and specific tactics informed by not only the theoretical underpinnings but also the practical use of space. Mapping included 'urban design audit' and 'visual assessment' of the case study UPOS.

Thirdly, the study referred to document review to fill in data gaps especially on the evolution of UPOS, activity patterns and the process of UPOS provision. Government reports, books and journals were reviewed to provide an updated theoretical and analytical framework for the research.

The three main methods of data collection and the surrogates the researcher focused on are illustrated in Figure 3.14.

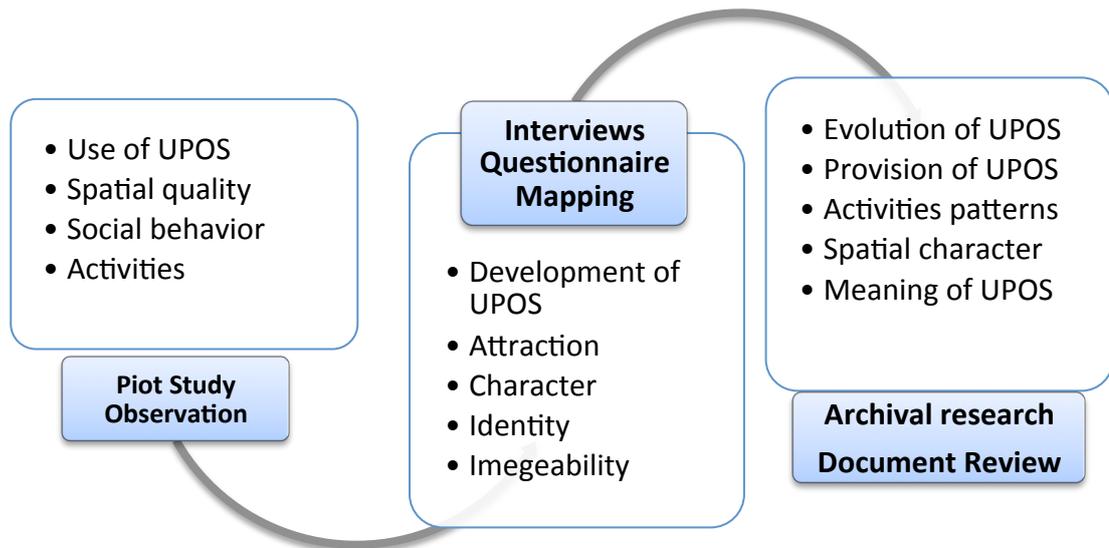


Figure 3.14: The three main methods of data collection.

Source: Author, 2017

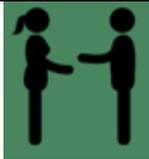
					
Mapping	Document review	Interviews	Key Informant Interviews	Symbolism discussion	Analysis and findings

Figure 3.15: Process of data collection and analysis.

Source: Author, 2017

3.5.1 Primary Data Collection Methods

This section elaborated the use of primary data collection methods used in this research namely; Pilot study, participant observation, interviews, photo elicitation, key informant interviews, adjacent community interviews, questionnaires and site survey as illustrated in Figure 3.16, Figure 3.17, Figure 3.18, Figure 3.19, Figure 3.20, Figure 3.21 and Figure 3.22 respectively.

3.5.1.1 Pilots Study - as a method.

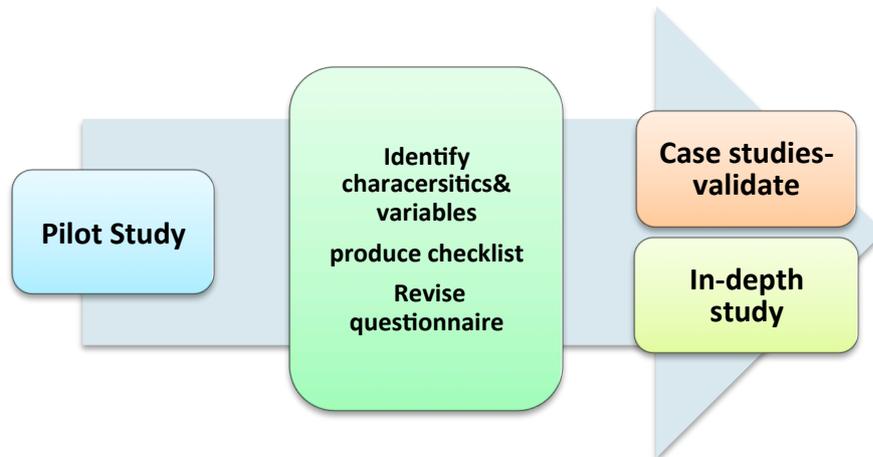


Figure 3.16: Pilots Study - as a method.

Source: Author, 2017

The pilot fieldwork conducted in Biryogo allowed the study to analyse the UPOS without any specific orientation, which became informative on how future fieldwork would be structured:

- i. The number of users and their categorisation (age, gender, income)
- ii. The patterns of social interaction (isolation/anonymity)
- iii. Forms of appropriation of space (murals, shading, painting)
- iv. Forms of participation (games/watching or active/passive)
- v. Maintenance of space (toilets/ pavements/painting, lighting)
- vi. Problems in the UPOS (rain/sun, walls and gate, parking, cleanliness)

3.5.1.2 Participant observation- as a method

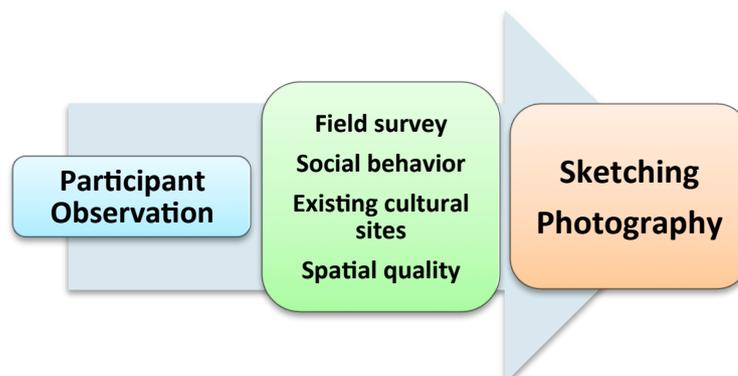


Figure 3.17: Participant observation- as a method.

Source: Author, 2017

Participant observation also referred to as Urban Ethnography was developed, based on the work of Gans (1962, 1967) and the goals were: to gain knowledge of an urban space, to analyse the nature of social networking in the space and to assess the existence or absence of community life in the city.

Urban ethnography is an interdisciplinary approach based on ethnographic work, which enables the researcher to conduct a detailed study of the social environment including physical spaces, including the culture and customs of the users. The use of participant observation, field notes, and traditional interview are the basic tools of ethnography (Creswell, 2008).

Ethnography consists of the observation and data collection over a period of several weeks and several hours a day. This current study, employed ethnographic observation, of selected UPOS in Kigali between February and December 2017. Initially, it was envisaged that the study would rely on simple tools in order to understand and explain the social environment in selected UPOS. However, the researcher engaged more in the fieldwork and lives of the users of UPOS in Kigali city, to an extent that the fieldwork sessions became lengthy and the engagement more complex with users, and especially with users expecting that the researcher would facilitate the in campus entry, seeking job opportunities or skills' training. The deep engagement with YCN for instance, led the study to grow an interest in visiting a Ugandan restaurant in this node, which then allowed time for frequent visits to gather more solid data.

The researcher attempted to stay focused and took specific and keen interest in the spatial organisation of the UPOS and the interaction between users. The study recorded such information in a field diary

Date:

Location:

Observations:

Time: morning/mid-day/ evening/ on weekday/weekend/special occasion

The observation points were selected to optimise visual coverage and from different spots. The study included recording the day, time, location and mapping where people were sitting, standing, walking, etc. and what they were doing. Whyte (1980) refers to a record of activities and the emerging patterns of the same as the '*Queue graph of a space*'. The drawn maps represent roughly the overall location of activities within the observation hour. This method was used to gain an understanding of the users' interaction in the space and the way they reacted within the built environment.

Hammersley (1995) has argued that a successful ethnographic study should have the following key features;

- i. A strong emphasis on exploring the nature of a particular social phenomenon, rather than setting out to test hypotheses about it.
- ii. A tendency to work primarily with "unstructured data" —that is, data that has not been coded at the point of data collection as a closed set of analytical categories.
- iii. Investigation of a small number of cases (perhaps even just one case) in detail.
- iv. Analysis of data that involves explicit interpretation of the meanings and functions of human actions; the product of this analysis primarily takes the form of verbal descriptions and explanations.

3.5.1.3 Interviews - as a method

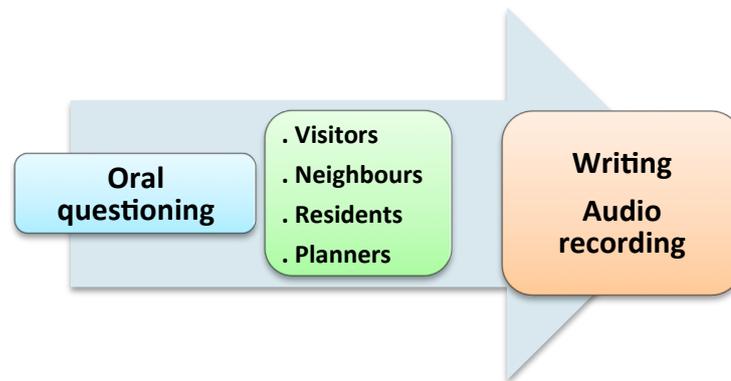


Figure 3.18: Interviews - as a method.

Source: Author, 2017

The fourth objective of this study was to explore the effectiveness of planning and urban design practice in providing liveable UPOS in Kigali. This required an in depth explanation from specialists in the field. This helped the study to explore the knowledge of professionals’; on good quality public open spaces and the influence of planning and urban design practice in developing such space in Kigali. Therefore, semi-structured interviews (Bryman, 2008; Frick, 2007), with city planners and urban designers, community leaders and architects was selected as a tool to achieve this objective, especially once the review of documents was complete. The perception of these experts on the effectiveness of the urban planning system, it was envisaged, would be useful in bringing life into the selected UPOS, an effect that would then be applied to other UPOS in Rwanda.

The questions were designed to cover certain issues of UPOS in Kigali from historical, contemporary understanding, importance, economic value, environmental value, political value, social value, urban design, planning practice and ending with general recommendations (see Appendix H). Questions were designed as open-ended and each interview expected to last around 30-45 minutes. Meeting arrangements were made in advance and a confidential letter sent out to each interviewee.

Also interviewed were users of each case study UPOS. In any interview session, about thirty people, aged between 20-55, were sampled from the users, each interview lasted about 30 minutes and some of the open-ended questions brought in debates that went on for another 30 minutes. The study occasionally offered tea or coffee to the users YCN in order to allow lengthy informal talk, which made it possible for the study to gather more information on the socio-spatial dynamics around UPOS in informal settlements.

When there was consent, interviews were audio recorded, making it easy to capture and transcribe the information later. In some cases, for instance when it came to community leaders, these were interviewed in a group to reach consensus on why people do not use a particular UPOS.

3.5.1.4 *Photo elicitation - as a method*

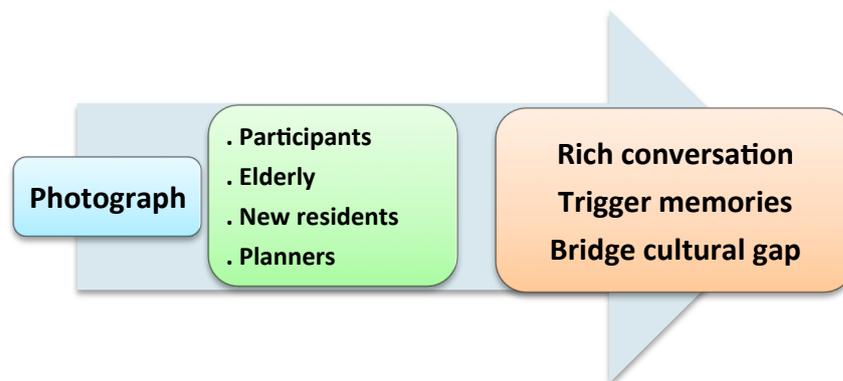


Figure 3.19: Photo elicitation - as a method.

Source: Author, 2017

The inclusion of Photo elicitation as a method in this study, was considered after it was justified as an adequate method for achieving the first objective of this study; finding out the status of traditional and contemporary UPOS in Rwanda. By using a set of photographs during interviews, the study triggered the memories of respondents, and stimulated active and richer responses, unveiling respondent's

attitudes, views and meanings (Harper, 2000) of the indigenous concept of public space of interest to the study.

This method helped to fill in a gap that could easily have been as a result of the age of key informants, who may not have been in a position to adequately recall events of over six decades ago. Methodologically, the study extended the role of participants beyond being just interviewees or research subjects, but to allow them more space in the study; offering them new ways of seeing their indigenous social worlds, which motivated them to share their memories and aspirations triggered by photographs of spaces that no longer exist in the current setting.

3.5.1.5 Key Informant Interviews - as a method

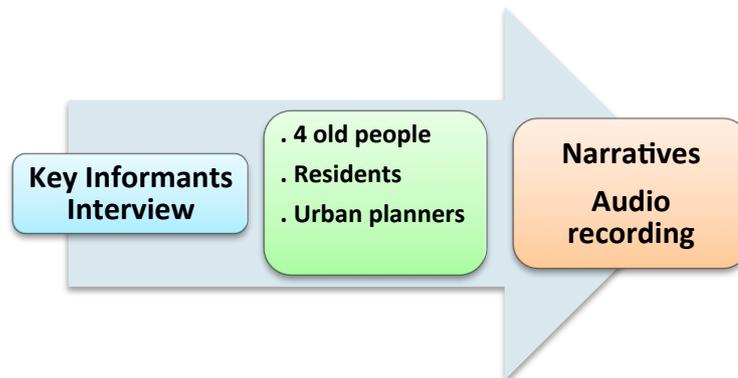


Figure 3.20: Key Informant Interviews - as a method.

Source: Author, 2017

Key informant interviews commenced at the same time as the participatory observation or urban ethnography. The study targeted urban planners and users of UPOS. The planners were interviewed in order to gain a better understanding of the process of the provision of UPOS. Among those interviewed was the coordinator of urban upgrading programme in the city of Kigali, who was involved in the coordination of an on-going informal settlement-upgrading project in Agatare cell, neighbouring Biryogo cell where YCN is located.

Six key informant interviews were conducted. One session interviewed Mzee Youssouf, alone. One session interviewed two of the key informants together, and during the third session, three of the four key informants were interviewed collectively.

Factors that create the image ‘*akarubanda*’ in Rwanda _ (interview Mzee Kanubi)

- i. Uniqueness of open public space
- ii. Presence of many people and different activities
- iii. Events and ceremonies held there
- iv. Thematic front and back yards
- v. Various art sculptures

3.5.1.6 *Adjacent Community Interviews - as a method*

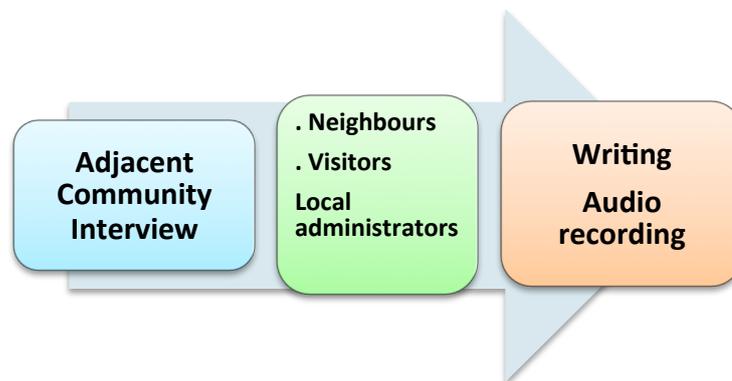


Figure 3.21: Adjacent Community Interviews - as a method.

Source: Author, 2017

The study extended to neighbours or visitors to the case study UPOS, with the aim of understanding the impact of the UPOS to the adjacent neighbourhoods. During one occasion, the researcher was fortunate in connecting with local administration leaders who had collected opinions of neighbours about the UPOS in a previous study.

The researcher sought the opinion of community leaders; village head and cell executive secretary, on the people who do not use the spaces as well as people who could be potential users.

3.5.1.7 Questionnaire - as a method

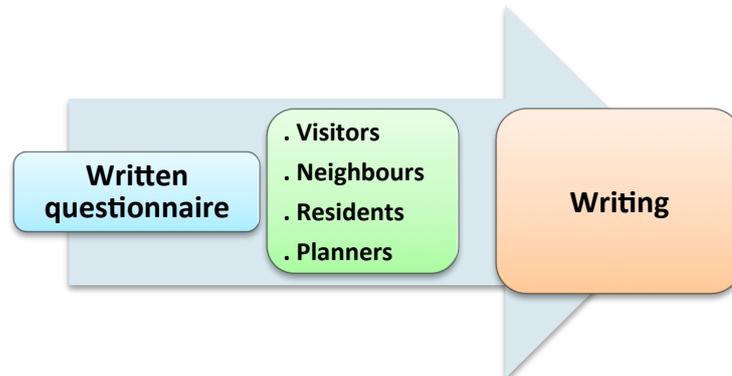


Figure 3.22: Questionnaire - as a method.

Source: Author, 2017

The questionnaire method was chosen for the empirical section, as part of engaging with users on the evaluation of the liveability of the UPOS case study, and specifically from a user's perspective.

The researcher designed the questionnaires using straightforward closed questions as detailed in the appendix, a face-to-face questionnaire was designed to explore an in-depth users' perspective of the UPOS. Where specific issues regarding users' requirements were explored; a few open-ended questions were added to the questionnaire. The study administered the questionnaires to 90 users, that is 30 in each case study UPOS.

The questions covered the respondent's visit, their evaluation of features linked to liveability of the space and their personal details (age, gender, nationality, etc.). The questionnaire was designed such that it left the personal questions to the very end in order to allow trust to build up between the researcher and the interviewees, and

create openness in answering critical personal questions such as the one related to their income (see Appendix F).

Thereafter, a random selection of users to be interviewed was achieved by approaching every fifth person entering the UPOS at a given point, after completion of the preceding interview. Priority was given to elderly people, who the study team physically assessed even before engaging them.

This part of data collection was intense, therefore in order to accelerate the data collection, the principal study leader and three students of architecture, drawn from The University of Rwanda took lead; with the students helping translate the *ikinyarwanda* to English and vice versa in order to increase the validity of the data collected, ensuring that respondents understood the questions and that the answer was correctly captured.

3.5.1.8 *Site survey - as a method*

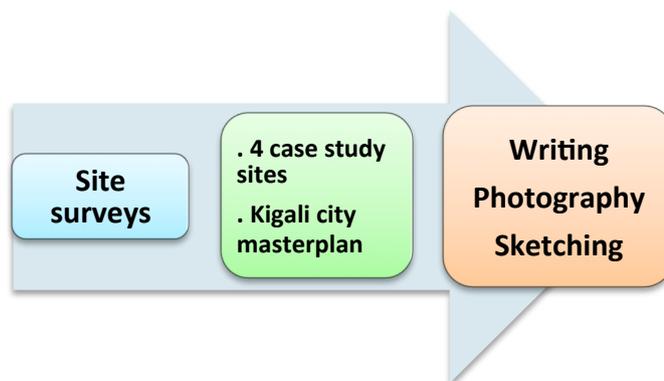


Figure 3.23: Site survey - as a method.

Source: Author, 2017

3.5.2 *Secondary Data Collection Methods*

This section elaborated the use of secondary data collection methods used in this research namely; Document review and archival research as illustrated in Figure 3.24 and Figure 3.25.

3.5.2.1 Document review as a method

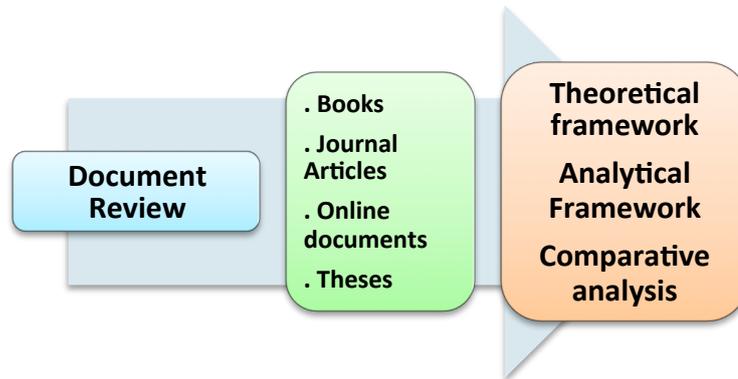


Figure 3.24: Document review as a method.

Source: Author, 2017

One of the objectives of this study was to investigate how UPOS have been studied, and to analyse and explore planning practice in Kigali, which is still in its infancy, and therefore not well established.

Therefore, reviewing documents such as archival material, official documents, government vision, strategies and reports about planning practice in Kigali was deemed important in drawing understanding on the process of producing POS in the contemporary city of Kigali.

3.5.2.2 Archival research as a method

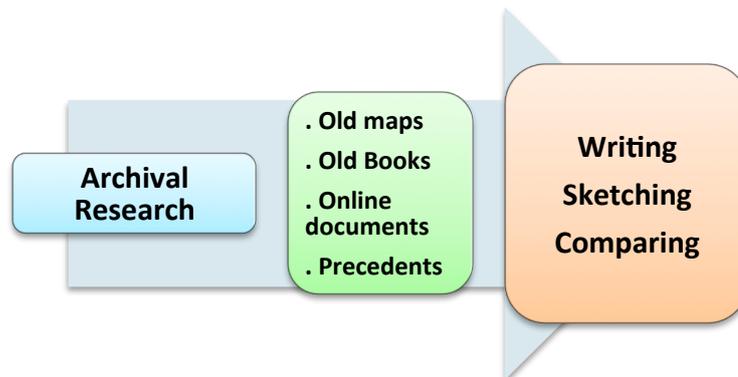


Figure 3.25: Archival research as a method.

Source: Author, 2017

At the preliminary stage of this study, literature review on the study topic was conducted, as a way of clarifying the research direction that the work would take, as well as determining the gaps in knowledge of UPOS to address. Both global and local theories and concepts were sought to help achieve an interpretation of the concept of *akarubanda*.

The study concentrated on locating old books, maps and old online documents, which were compared in order to draw similarities on the nature of traditional public open space in Rwanda.

In order to understand the evolution of UPOS in Rwanda since pre-colonial times, the study consulted photographic archives in museums, collections of historic Rwanda, which helped the researcher to gain in-depth knowledge on Rwanda's urbanisation process, most of it being what the researcher had not had an opportunity to witness.

This knowledge in turn clarified further the on the dynamic changes that have occurred in the conceptualisation of social space, the interruptions in the social composition of residents and cultural elements that are valuable and attractive to Rwandans and urban citizens.

3.5.3 Critical Methodological assessment

It had been envisaged that the methodology used would be a useful and suitable tool for data collection. However, during the pilot studies, the following constraints were noted;

- i. Access to official documents and reports on UPOS in Rwanda were difficult to obtain, partly because they either were non-existent or the authorities were not keen to share them.

- ii. City officials gave a very short time for interviews and some were not sure of the issues raised. Some requested ethical clearance letters and/or official letter from their institutions.
- iii. The nature of the topic, being a pioneer study in Rwanda did not have many reference literature sources.
- iv. Interviews in informal UPOS could not be easily structured as the residents had a different way of telling their story hence preferred open narratives.
- v. Rwandans are generally introverts; most of them prefer to talk less or not at all.
- vi. Since the research was happening around a period of expropriation and resettlement of informal housing, a considerable number of interviews sessions met suspicion and the interviewees, for various fears refused the recording of interviews.
- vii. Semi-structured interviews were more difficult to control, than the open-ended questions, whereas the interviews allowed the study to interact with respondents in a casual style. Indeed, while the interview method respondents more freedom to tell their stories about UPOS and related issues, it also made the study noisy in the sense that several ‘points of order’ interventions were required to bring the conversation back to the target topic. In the early days of fieldwork, all the discussion were so interesting that the researcher would take time to notice when the discussion had drifted away
- viii. Taking notes during interviews in informal UPOS or with the elderly looked ‘out of place’ and made people suspicious. At one point, some people in the crowd tried to influence the interviewees on the notion that that *‘the researcher was selling the information to the western world for financial gains and the interviewees would have nothing to benefit’*
- ix. Due to on-going urban changes in Kigali, the residents of Biryogo constantly live in fear that the informal settlement could be demolished. Anyone conducting fieldwork in this area thus, is viewed as one on a fact-finding mission towards demolition of the settlement. Due to a sensitive political

issue (The East African, 2013) around Mr. Rujugiro and the government of Rwanda, many workers at the hotel and some users of the space sought seclusion and privacy.

- x. Accessing the Rujugiro compound during a wedding ceremony was really difficult and time consuming due to heavy traffic, yet these are the moments that would benefit the study in terms of meeting different people of diverse backgrounds including the elderly.
- xi. Accessing Rujugiro compound during a wedding ceremony was so difficult and time consuming due to heavy traffic, yet these are the moments that would benefit the research in terms of meeting different people of diverse backgrounds and the elderly.

3.6 Data Analysis and Presentation Techniques

This section presents the analysis, and presentation of data. Given that a large amount of data was collected, it was important to reduce it into interpretations using summarization and categorisation. Data analysis was both qualitative and quantitative, in order to identify, describe and explore the relationship between the physical and social dimensions of UPOS

3.6.1 Data Processing

For quantitative data, the questionnaires used in this study were carefully sorted into location, time and respondent's category. The responses were coded and data entered into Microsoft excel files. This ensured that the data gathered was presented clearly, with the aid of tables, in order to generate percentages, pie charts and/or graphs, where possible.

3.6.2 Data Analysis

For qualitative data, responses were paraphrased and thematic areas created. The study used interpretive analysis not only for continuously interpreting the data, but

more importantly, to draw an understanding of the interrelationships between the physical and social dimensions of space. Users' perceptions and aspirations were drawn through narrative analysis, with data collected mainly from the three elderly men, who served as key informants.

Descriptive statistical analysis was used to identify frequencies and percentages, to answer all the questions in the questionnaire. Not all respondents answered all of the questions. Therefore, the percentages reported correspond to the total number of participants answering the individual questions.

The socio-demographic, socio-economic and socio-spatial characteristics of UPOS were presented through percentages, derived from the categorised data variables and the range for continuous data variables such as household incomes.

Frequency analysis was used to determine any similarities among the compositions of the data collected.

The patterns on the use of UPOS were derived from examining the relationships between the actual spatial features of the space and the types of activities happening. The analysis considered the frequency of activities in the UPOS related to the spatial features in the UPOS in order to answer 'how do the social dimensions (people's activities) and spatial features (physical dimension) inter-relate'. This analysis helped the study to understand how activities are influenced and encouraged by physical settings.

The observational results and the related analysis in this study were based on timing, activity type, level, location and spatial features.

An analysis therefore was based on available empirical observation data, considering the various activity types, durations and level as well as the number of people using the space in relationship to the physical setting as well as to each other.

To understand the spatial configuration of the activities, the data was analysed using ‘symbolology’ such as using multi-coloured dots to represent each type of activity and ‘frequency’ of activities, with the number of dots also determining the quantity of each activity in an area.

3.6.3 Data Presentation

The research used various tools and techniques to present the findings from the data analysed above. These included: maps, photographs, satellite images, graphs, charts, tables and narratives. Maps, photographs and satellite images were used to show the locations, configuration and patterns of use in UPOS. Graphs, charts and tables were used to show the relationship between quantities and statistics collected during the field survey. Narratives were used to summarise interviews especially from key informants.

3.7 Validity and Reliability of Study Instruments

In order to ensure that the data analysis was valid, meaning that a sample of the test items represented the content that the test is supposed to measure, the study discussed the data collection, analysis and presentation structure with the two supervisors who are both experts in urban design and research methodology, prior to commencement of fieldwork. The study then tested the tools of data collection, analysis and presentation, through a pilot study in February 2017, for another check and validation. The resulting amendments were then discussed with the supervisors for approval.

The two supervisors visited the case study UPOS in Kigali in December 2017, and jointly with the researcher, held interactive sessions with the users of space in the

various UPOS, during which the supervisors were free to ask additional questions and open-end insights that further helped the researcher develop the tools for data analysis.

Reliability is the measure of the extent to which the various research instruments give similar results consistently. During the pilot study, for example, a trial was carried out with a pre-test of the technique of mapping activities and recording patterns. Several fieldwork assistants tested the techniques on the same UPOS, on different days, before the techniques were applied to the actual fieldwork. This check helped the study to re-categorise activities to avoid redundant repetition and overlaps and/or to introduce new activities. For instance, at Rugugiro's compound a new peculiar activity of 'taking photographs' was also identified; this technique had not been carried out before in the Youssouf's courtyard, studied previously.

The researcher was also keen to find out what data inter-relationships existed. By analysing the relationship between social and physical dimensions of UPOS, the researcher sought to understand how the design features affect the activity types within a UPOS. Therefore, the type and frequency of activity types on weekdays, weekends and special days were mapped and analysed. The relationship between activity type and design features and/or location was also analysed. The study examined the frequency of activities during morning, midday and evening, during week days, weekends and special occasions. These data on inter-relationships were helpful in testing the validity of the data collected.

3.8 Ethical Considerations

Ethical principles are viewed as sensitive but fundamental considerations in producing social research such as the current study. They are concerned with what is or is not legitimate to do in a morally correct way while producing research, involving people. Previous similar research in this area has categorised ethical principles into four main steps (Bryman, 2008): firstly, ensuring that there is no

physical, mental or social harm to participants and researcher; secondly, checking whether there is a lack of informed consent; thirdly, ensuring there is no invasion of privacy; and fourthly, making sure that there is no element of deception (Bryman 2008).

With respect to causing no harm to participants, no pressure was imposed in any way on participants who formed part of the study. Rwanda is generally considered a safe country, but since the study involved spending long periods of time in public spaces, it was considered that there could be risk for the lead researcher, in terms of gender and their citizenship. The lead researcher, therefore made all visits to the case study UPOS, accompanied by a research assistant. In both interviews and questionnaires, sensitive issues that could cause potential complications were avoided. The lead researcher attempted to facilitate all conversations by sticking to the designed questions and quickly controlled discussion before they drifted off the course of the study purpose.

Regarding informed consent, participants' name or any personal question that may lead to their identity being disclosed were avoided in the questionnaire. Interviewees' personal identity was kept anonymous in both interview transcripts and recordings to avoid these data being accessed by anyone but the lead researcher. Regarding ensuring there is no element of deception to participants in this research, all participants were informed of the lead researcher's position as a PhD candidate, and a member of faculty at The University of Rwanda. Each participant was briefed on the topic and the purpose of their participation in the study, as well as the value of their expected contribution.

Interviewees received a letter from the lead researcher, explaining their contribution. In order to ensure there was no invasion of privacy, the interview transcripts and recordings were coded using numbers or pseudonyms when referred to in the data analysis and reporting.

3.9 Conceptual and Operational definition of variables

This chapter presents an analytical framework, based on the main planning and urban design concepts of providing liveable public open spaces. The variables from both global and local experiences are drawn in order to make their application to the empirical cases studied in this current study possible.

Table 3.4 defines the variables of the study, stemming from the research objectives and the conceptual framework formulated for the study. The combination of dependent and independent variables helped the study achieve its objective, in providing insights on how the Rwandan *akarubanda* concept could be applicable in bringing life into UPOS. The table further presents how the various variables were measured in this study.

Table 3.4: Conceptual and Operational definition of variables.

Research Objective	Category	Variable	Indicators	Data collection tools	Data analysis technique
1. To establish the status of traditional and contemporary public open spaces in Rwanda.	Physical dimension of UPOS	Independent	Good Accessibility: -Vehicular circulation -Pedestrian movement - Public transport Good linkages: Boundaries –walls Location- convenience	Participant Observation Photography Mapping	Descriptive Correlation
		Independent	Environment: Clean and safe Users- demographics (children elderly, women)		
	Dependent	Presence of people: -Activities			

	Liveability of UPOS		<ul style="list-style-type: none"> -Social activities -Special attraction -Sociability <p>Comfort:</p> <ul style="list-style-type: none"> -Sitting areas -Shade <p>Maintenance: Management/Governance</p> <p>Image :</p> <ul style="list-style-type: none"> - safety -Health <p>Affordability Adjacent areas</p>	<p>Mapping</p> <p>Observation</p> <p>Questionnaires (open-ended)</p> <p>Interviews (open -ended)</p>	<p>Urban Design</p> <p>Audit</p> <p>Descriptive Correlation</p> <p>SPSS</p>
2. To develop an analytical framework for studying public open space in Rwanda.	Physical Social	Dependent Dependent	<p>Spatial analysis:</p> <ul style="list-style-type: none"> -Location -Urban form -Size -Shape -Configuration -Place making <p>Activity analysis:</p> <ul style="list-style-type: none"> -Social meaning -Identification with space -Inclusiveness -Diversity -Engagement 		<p>Interpretive</p> <p>Descriptive Correlation</p> <p>Urban Design</p> <p>Audit</p> <p>Descriptive Correlation</p>
3. To understand the factors and relationships of POS and	Physical	Dependent	<p>Relationship between spaces:</p> <p>Quality of urban space</p> <ul style="list-style-type: none"> -Attractive -Safe and Secure -Clean 	<p>Observation</p> <p>Structured interviews</p>	<p>Narrative</p> <p>Interpretive</p> <p>Descriptive Correlation</p>

CHAPTER FOUR:

4 RESEARCH FINDINGS

4.1 Introduction

This chapter provides the presentation, analysis and interpretation of the data collected for the study. The data was collected using methods and techniques designed in the study methodology chapter. The data collection methods included direct field observations, activity mapping, interviews, questionnaires and site surveying.

The initial reference case study of King's palace museum provided the design and activity principles informing the analytical framework. The study sought to determine these elements, or an interpretation of the elements, in contemporary case studies of YCN in Biryogo and RC in Rebero.

The chapter, presents an evaluation of both the built environment and social dimensions of the three case study UPOS using different techniques applied by scholars of urban and planning design, to assess the qualities and activities that would bring life into UPOS hence catalysing the liveability of the UPOS.

The variables for the physical dimension include good accessibility and linkages as well as degree of comfort and image. On the other hand, variables for the social dimension include users and activities as well as presence of people and sociability.

Table 4.1 presents the results of the four variables selected to measure the physical and social dimensions of UPOS, namely reliability of good accessibility and linkages, comfort and images, users and activities, and sociability dimensions.

Table 4.1: Variables and measures for physical and social dimensions of UPOS.

DIMENSION	VARIABLE	MEASURES
PHYSICAL	Good accessibility and linkages	Access Circulation Pedestrian system Public transport network Vehicular circulation
	Degree of comfort and image	Placing for sitting areas Safety and security Environment Maintenance
SOCIAL	Users and Activities	Users Social activities Physical activities Special attractions
	Presence of people and Sociability	Presence of people Opportunity to socialize Lively space, active Life in POS

Source: Author, 2017

Proper accessibility, linkages and good connections with the surrounding area can improve the social value of the environment of UPOS, enhancing the presence of people, their social cohesion and sociability. This study found that when there is good access and linkage, more people are attracted to the UPOS, which in turn boosts the demand on sociability. This in turn promotes the degree of users and activities in the UPOS. Comfort and image is another construct that promotes the number of users and activities in UPOS. From the analysis, the pedestrian system is the most significant factor in determining good accessibility and linkages. Lynch (1960) has indeed emphasized that paths are predominant elements in the image of a site.

The study examined the inter-relationship between the variables using the ‘Pearson product-moment correlation’. The relationship between the physical and social variables is illustrated in **Table 4.4.2**.

Table 4.4.2: Relationship between variables.

	Good accessibility and linkages	Degree of comfort and image	Users and Activities	Presence of people and Sociability					
Good accessibility and linkages									
Degree of comfort and image									
Users and Activities									
Presence of people and Sociability									
80	Very strong	75	Strong	70	Moderate	65	Weak	60	Very weak
0	Non-existing								

Source: Author, 2017

In addition, the ‘Good accessibility and linkages’ factor contributes to making users attracted to socialize in UPOS. It means that with good design layout, clear signage for direction and good facilities provided, there can be an enhancement of the social activities. When more users come to the UPOS, they in turn create more activities and an opportunity to either create new identity or image, or boost the existing image. The construct of ‘The degree of comfort and image’ further contributes to the success of the UPOS. Obviously users will feel more comfortable when they feel the place is safe. In this case, the safety factor result is evidently higher than the maintenance or site facilities. Users are also more comfortable when the UPOS has clear accessibility and linkages and has good proximity to their place or residence or work.

The study further examined the relationship between demographics and variables as illustrated in Figure 4.1. From the results, it was found that the three variables namely, Presence of people and Sociability, Users and Activities and Degree of comfort and image were more significant with gender. The female gender rated these variables higher. However, the variable of good accessibility and linkages was least significant with gender.

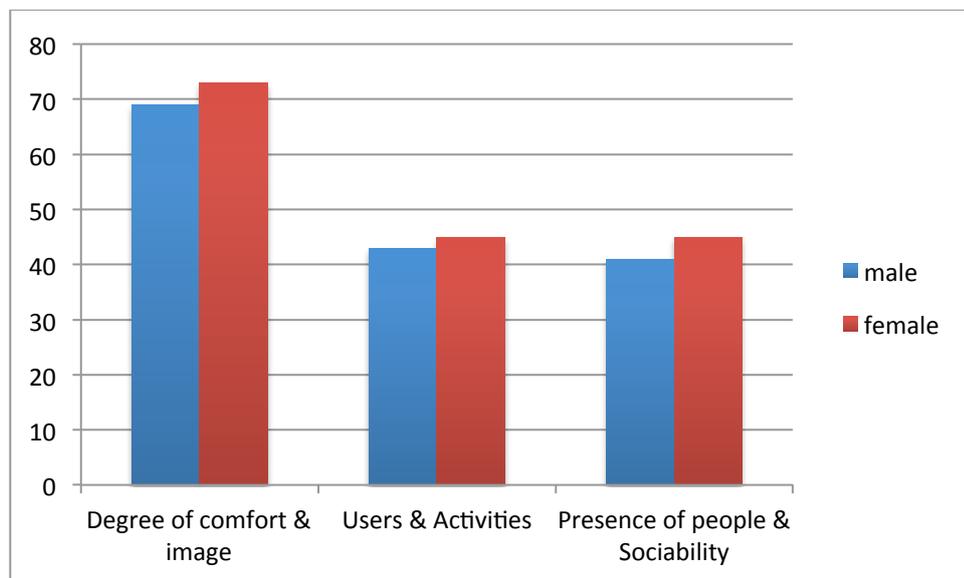


Figure 4.1: Relationship between variables and gender

Source: Author, 2017

4.2 Description and urban fabric of the study sites

Since the layout of urban structures influences the way people use them, it was important for the study to conduct an analysis of relationships between the case studies and their surrounding areas. Whyte (1980), Jacob (1961) and Gehl (2010) have emphasised that the urban fabric has to be designed in an artistic way in order for the public to feel welcome to use it.

Using aerial views, the researcher highlighted the essence of the diversity of surrounding land uses, road patterns, pedestrian networks, human scale of the space, descriptions, etc.

4.2.1 *King's palace museum, Nyanza. (KPM)*

King's Palace Museum (KPM) is an enormous domed structure made out of grass thatch, located in Nyanza district, in the southern province of Rwanda. The king's residence -*ibwami* was built on a hill. The royal compound comprised of thatched houses, ringed by a circular reed fence, with an emphasis of public open space for social interaction as illustrated in Figure 4.4.



Figure 4.2: King's palace museum. Location.

Source: Google earth modified by Author, 2017

The compound contained three main structures, a house for the king and two smaller huts for storing beer and milk.



Figure 4.3: King's palace museum and surrounding land use.

Source: (Nduwayezu, 2008)



Figure 4.4: Rwandan traditional royal compound.

Source: Kanimba and Van Pee, 2008.



Figure 4.5: King's palace museum's site plan.

Source: Author (2017)

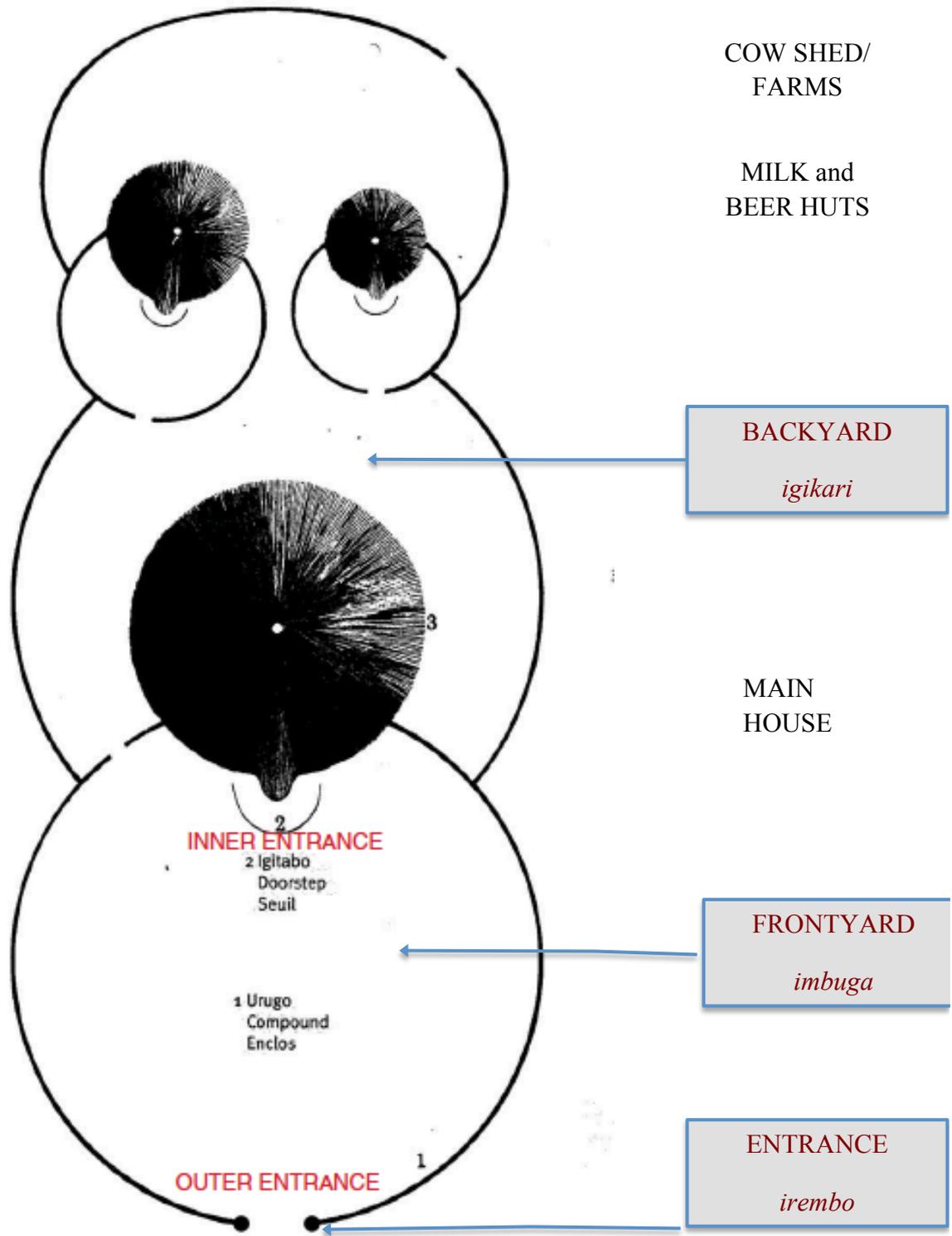


Figure 4.6: King's palace museum. Layout.

Source: Author, 2017 after Kanimba & Van Pee (2008)

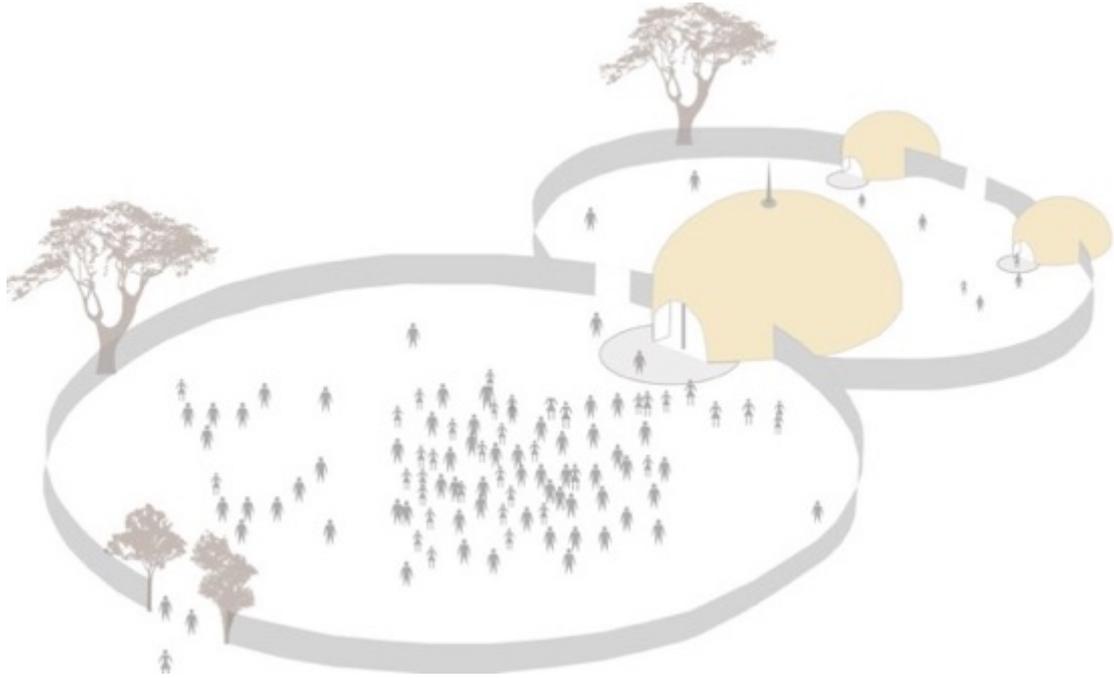


Figure 4.7: Illustration of the composition of KPM.

Source: Author, 2017

4.2.1.1 *The entrance*

The two trees at the entrance were symbolic. *Umuko* (wattle tree), which was planted to symbolise ‘Protection’ against witches and sorcerers and *umuvumo* (fig tree), which was planted to symbolise ‘victory’ in the king’s residence. Across the region, fig trees would be planted during wars to mark the conquered territories. (A. Madjutu, personal communication, February 14, 2017; D. Ingabire, personal communication, December 3, 2016).

A fence made of wattle and reed formed a circular enclosure around the compound subdividing it into a front and backyard.

The guards would screen all visitors before meeting the king. It is reported that some people had to wait for up to three days to secure an appointment with the king. Most of the complaints that people made to the king would be related to land, cattle or family issues (Tumwebaze, 2008).



Figure 4.8: The KPM's entrance.

Source: Author, 2017



Figure 4.9: The KPM's front yard.

Source: Author, 2017

As illustrated in Figure 4.9, the frontyard was a large public space, which would occasionally hold varied social activities such as dancing, celebrations and rehearsals.

The royal compound was around 90 meters in diameter and looked like a huge maze of interconnected huts and granaries. Only one entrance ushered people into the large public square, also called the *akarubanda* (Coquery-Vidrovitch, 2006).

4.2.1.2 The King's house

As illustrated in **Figure 4.10**, the entrance to the king's house was designed to encourage people to show respect to the king by bowing. People entering the house were required to leave their shoes at the entrance, before stepping on to the entrance lobby or *agatabo*, painted in red.

Only the king was allowed to place three spikes or horns on his house. The two horns represented the two horns of the king's traditional cattle, whereas the third was a symbol of kingship. Ordinary houses would have just two horns atop the roof.

At the entrance was a stool for the king and only invited people could enter. Tumwezabe (2008) reports that the King would normally come out of the hut and sit on a stool, right at the entrance to listen to the problems laid out by his subjects and pass a judgement on them case by case. Death sentences were also passed at this point. A pole divided the entrance to the king's house into two parts, and it was a determinant of what judgement one would get; touching it would result to immediate pardoning for any judgement already passed including death (Tumwebaze, 2008).

The King's house was carpeted with mats and there was a clay hearth in the centre for the king, his wife, and entourage



Figure 4.10: The King's house doorstep.

Source: Author, 2017



Figure 4.11: The KPM's back yard.

Source: Author, 2017

4.2.1.3 *The adjacent area*

The KPM is currently a touristic area displaying Rwanda's indigenous human settlements typology.

Next to the site of the KPM is the modern royal palace constructed by the Belgians in 1932 for King Rudahigwa Mutara III, who lived there from 1932 to 1959 when he died. It is a western style palace, comprising spacious rooms and balconies, and painted white as illustrated in Figure 4.12.

The palace was mainly built on the hilltop, whereas typical Rwanda dwellings or *rugo* dotted the hillsides around the palace. *Rugo* were independent social units and their layout largely depended on the occupation of the family, either farming or livestock keeping, as discussed in chapter two.



Figure 4.12: Rwandan ‘modern’ royal palace of 1932.

Source: Author, 2017

4.2.2 *Youssof’s courtyard and node (YCN)*

The YCN node is formed by the intersection of two roads, KN 115 ST and KN 126 ST as illustrated in Figure 4.13 and **Figure 4.15**. Youssof’s courtyard is an informal urban courtyard. Youssof’s grandfather’s house as highlighted in Figure 4.15 is the oldest existing structure in the native city of Biryogo. It was built in 1920 from wattle and had daub walls and a grass-thatched roof. In the 1940’s, the roof was modified to tin sheeting when Rwanda received food donation from the USA including cooking oil in 10-litre tins. The recycled oil tins were flattened and joined together to form newer roofing sheets, a material considered to be more aesthetic at the time.

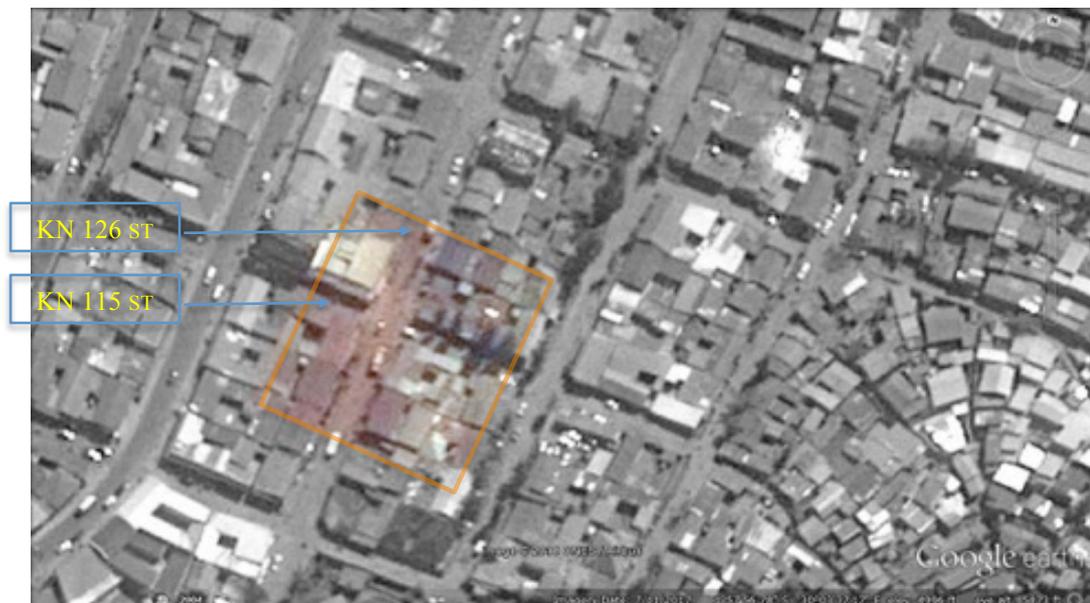


Figure 4.13: The YCN’s location.

Source: Google earth modified by Author, 2017



Figure 4.14: The YCN and land use of surrounding urban fabric.

Source: Nduwayezu, 2018

4.2.2.1 The historical evolution

The settlement started as a family home with a front yard to the path and a backyard and the rear. The backyard transformed with time into an Islamic prayer square in 1980's and more recently it opened up to all. It is currently a public open space with a cafeteria and seating space for social interaction.

4.2.2.2 The use

The courtyard space is currently used more as an outdoor coffee place, rather than, family space as illustrated in Figure 4.17. A mixed-use urban fabric, whereby the buildings are mainly on one level, surrounds the UPOS. The structures within the UPOS include; restaurants, coffee and tea cafeterias, retail shops, and spots for outdoor recreation, mainly, traditional games.



Figure 4.15: The YCN's site plan.

Source: Google earth modified by Author, 2017

4.2.2.3 *The urban structure*

The courtyard and node dimensions are approximately 30x20 meters with around 50 percent being open and 50 percent being built areas. The node ratio is close to what was described as the ideal good proportion in the literature review. The node can be considered as being within the recommended size in respect of the human scale. Although the courtyard ratio is much smaller than that recommended for 'Small urban spaces', the UPOS is able to attract vibrant urban life as illustrated in Figure 4.18. Very few new high-rise buildings can be spotted around the node.



Figure 4.16: The YCN's site Plan.

Source: Author, 2017



Figure 4.17: The YCN's courtyard and activities.

Source: Field survey, 2017

Pedestrians feel welcome to the node, which has transformed continuously, with newer restaurants and coffee shops being opened, through renovation and rehabilitation of existing ones. Very few new high-rise buildings can be spotted around the node

4.2.2.4 *The adjacent area*

Surrounding urban fabric is mixed use with a combination of commercial, office and residential land use. Historic and cultural elements are still visible such as playing traditional games such as *igisoro* as illustrated in Figure 4.17 drinking and eating together, and a vibrant social life.



Figure 4.18: The YCN's adjacent street and urban life

Source: Field survey, 2017



Figure 4.19 The YCN’s adjacent street and traditional games.

Source: Field survey, 2017

4.2.3 Rujugiro’s compound (RC)

4.2.3.1 The historical evolution

RC was originally a residential palace and hence it is located in a residential area as illustrated in Figure 4.20. Rujugiro first constructed a residential estate in the year 2000 made of one hundred 3-bedroom prototype houses, and then later in 2014 constructed a palace for his family at the topmost habitable part of hill during its construction. The prestigious site enjoys great views and vista of up to 270 degrees view of Kigali.

The buildings inside the RC are constructed with modern materials and new techniques, which make it elegant and above average aesthetics at the time of construction. Apart from Rugugiro’s own housing estate below the palace, the rest of the surrounding urban fabric does not seem to match that of the POS as illustrated in Figure 4.21.



Figure 4.20: RC's location.

Source: Google earth modified by Author, 2017

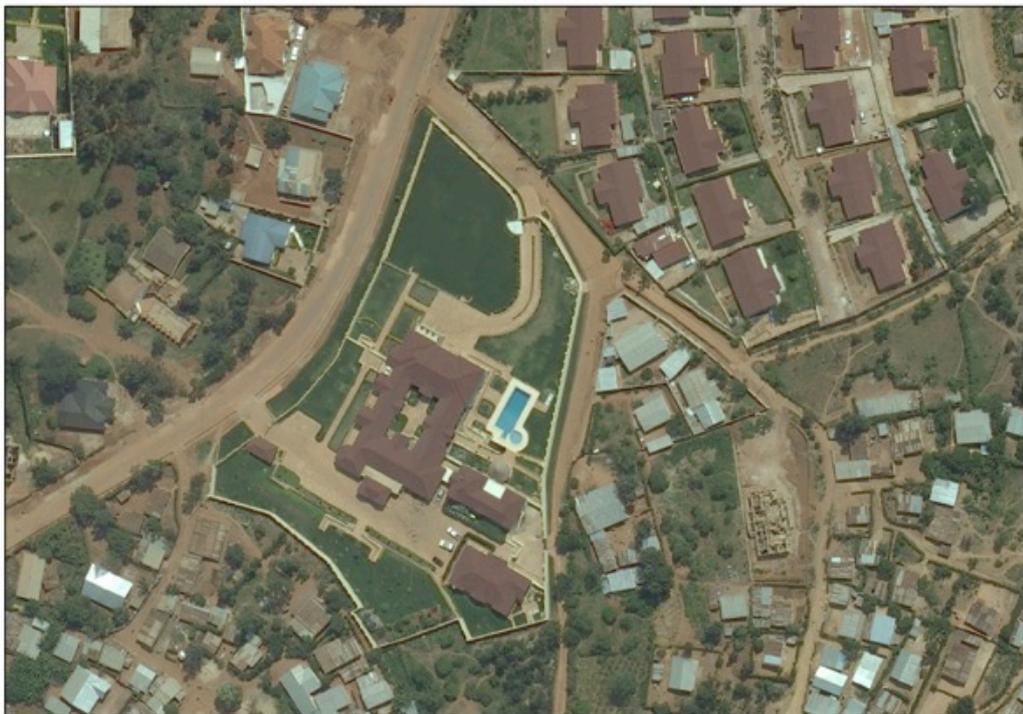


Figure 4.21: The RC and land use of surrounding urban fabric.

Source: Nduwayezu, 2018

4.2.3.2 The use

YC is comprised of main house, which was a family house, a servant quarter, a guest wing with four self-contained bedrooms, a swimming pool and large gardens as illustrated in Figure 4.22.

Since the original use was a palace for a rich person (*umutware*), the compound was conceptualised as a venue for royal reception of VIPs, which follows ceremonial protocols, this required a large enough space for car park, entertainment, performances, parties, meetings, etc. The transformation of the RC into an urban courtyard seems to benefit from these same characteristics.

The fees for renting the RC for a wedding ceremony was as high as 500,000Frw for the day, equivalent to 580\$. When guests chose to stay longer in the compound, the cost of a room per night was 85,000Frw, equivalent to 100 USD.



Figure 4.22: RC, Site Plan.

Source: Author, 2017

Figure 4.23 shows people arriving for a wedding ceremony on Saturday the 24th February 2018. It was an Islamic wedding and evidently a bigger percentage of the users of the UPOS that day were Muslim.



Figure 4.23: The RC's users and activities.

Source: Author, 2017

4.2.3.3 The urban structure

The big palace occupies an area of approximately 13,000 square meters and has a courtyard layout in the middle, surrounded by lounges and family bedrooms. The RC is relatively large size and dominating compared to the small residential units as illustrated in Figure 4.24.



Figure 4.24: The RC's site urban structure.

Source: Author, 2017

4.2.3.4 *Adjacent area*

The road passing in front of the palace is cobblestone and there is a walkway on only one side, and an open drain on the side touching the plot. There is a 3meter tall and solid perimeter fence with metallic spikes at the top as illustrated in **Figure 4.25**. The wall makes the neighbouring community feel uninvited to the space. During the period of the study, children were occasionally spotted climbing over the fence to gain access to the compound. This makes it not well integrated with the surrounding area.

The size of the palace and the compound is not in proper proportion with the surrounding buildings. The surrounding urban fabric is composed of much smaller structures, mainly for residential use.



Figure 4.25: The RC's boundary fence.

Source: Author, 2017

Between the solid fence and the road is a buffer area, of green gardens, approximately three meters wide. The gardens are well manicured but not accessible to the public, framed with thick hedge as illustrated in **Figure 4.26** which further causes a physical barrier. The open drain, off the road, does not improve the accessibility of the RC as it has proved dangerous not only for pedestrians but also vehicles. For these reasons, there is no active walkway or frontage on the roadside touching the compound.



Figure 4.26: The RC's set back gardens.

Source: Author, 2017

There are schools (pre-school, primary and secondary) located immediately above the compound and child related traffic is evident as illustrated in Error! Reference source not found.. The lack of a proper sidewalk network makes the palace uninviting to pedestrians. During the timespan of this study, there were several car accidents with vehicles veering off the road and into the open drains. Pedestrians evidently restricted themselves to using only the right side of the road, as this is where a safe walkway has been provided. RC is to the left of the stone road.



Figure 4.27: The RC's adjacent street and activities.

Source: Author, 2017

The Anglican Church across the POS is more visual permeability and enjoys an accessible sidewalk as illustrated in **Figure 4.28**.

There exists an Anglican Church across the RC POS. The study found that though there was a fence and a gate to the church compound, people feel more welcome to this side of the road than to the RC. The boundary fence of the church was visually permeable as illustrated in **Figure 4.28**. The study also found that new wedding gardens are opening up in the neighbourhood, especially along the main road to Juru hill.



Figure 4.28: St. Peter's Anglican church adjacent to RC.

Source: Author, 2017

With a better synergy and juxtaposition of these two spaces, it would be possible to establish a mutual relationship where weddings can spill into the church on Saturdays and church activities can spill into RC on Sundays. This relationship does not seem to exist currently.

It can be argued that the size, configuration and boundary of the UPOS makes it unconnected with the surrounding urban fabric. The solid walls, especially on the front sides reduce both visual and spatial permeability. The sidewalk is narrow, about 1.5 metres and the pavement material used is rough. Along the case study, there is no sidewalk and the open drain is not safe for pedestrians. The cobble-stoned road clearly gave priority to cars and thus was viewed as a pedestrian-unfriendly space, despite the number of people expected to attend functions in this UPOS.

These disconnects limited the integration of the compound with the surrounding activities e.g. parking space at the church which could be utilised as extra parking during big weddings. Indeed, there were occasions when cars parked on the roadsides causing traffic snarl-ups for people transiting through this area. Most often, the weddings took place on Saturdays when the church compound was free.

4.2.3.5 Comparing KPM and RC

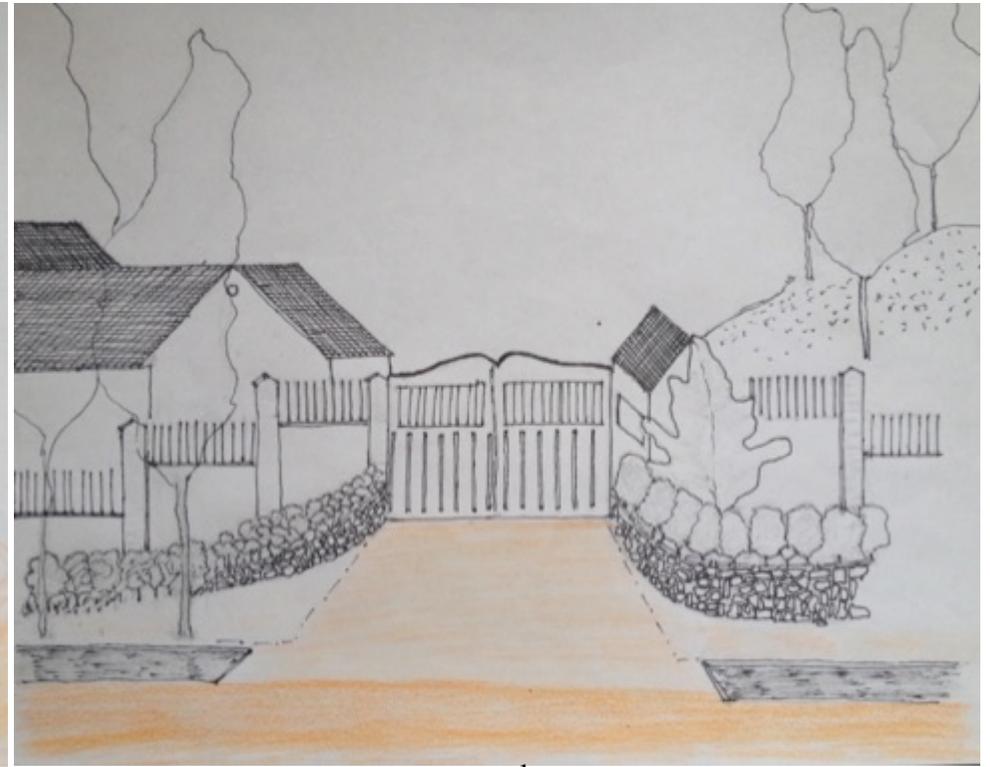
RC compares well to the reference case study King's palace Museum - that composed of one big house for the king and two smaller huts storing milk and beer. Indigenous Rwandans believed that milk was food and a source of multi nourishment, whereas today, servants are hired to prepare food for the family. Indigenous Rwandans also regarded beer as important refreshment item and a catalyst for social interaction. Today, in most families, entertainment of visitors and guests, and beer are regarded as important pillars of social life

Despite the similarity in the configuration of UPOS, the study found a significant difference in the use of YC, compared to KPM, based on the entrance gate and boundary fence. Whereas there was no gate at the entrance to the KPM, at RC, there is a solid gate and security guards man the entrance. The continuity of space at KPM created a welcoming experience, unlike in the RC where the gate, security guards and open drains were viewed as deterrents to access of the UPOS, as illustrated in **Figures 4.29 a and b.**

Whereas boundary fences of both UPOS are approximately the same, as illustrated in, the materials of the same are different. KPM fence made of reeds is friendlier than RC fence made of stones and steel bars at the top.



a



b

Figures 4.29 a and b: KPM Entrance. (a) and RC Entrance (b).

Source: Author, 2018

4.3 Demographic and Socio-Economic characteristics of Respondents

This section discusses the age structure of respondents, their gender, education background, occupation and income. It further examines the users' company when they visit case study POS as well as users' visual perception of the UPOS.

4.3.1 Age Structure

According to the current census, Rwanda's population is dominated by the youth, with rare traces of elderly people ,aged over 70 years as illustrated in **Figure 4.30**.

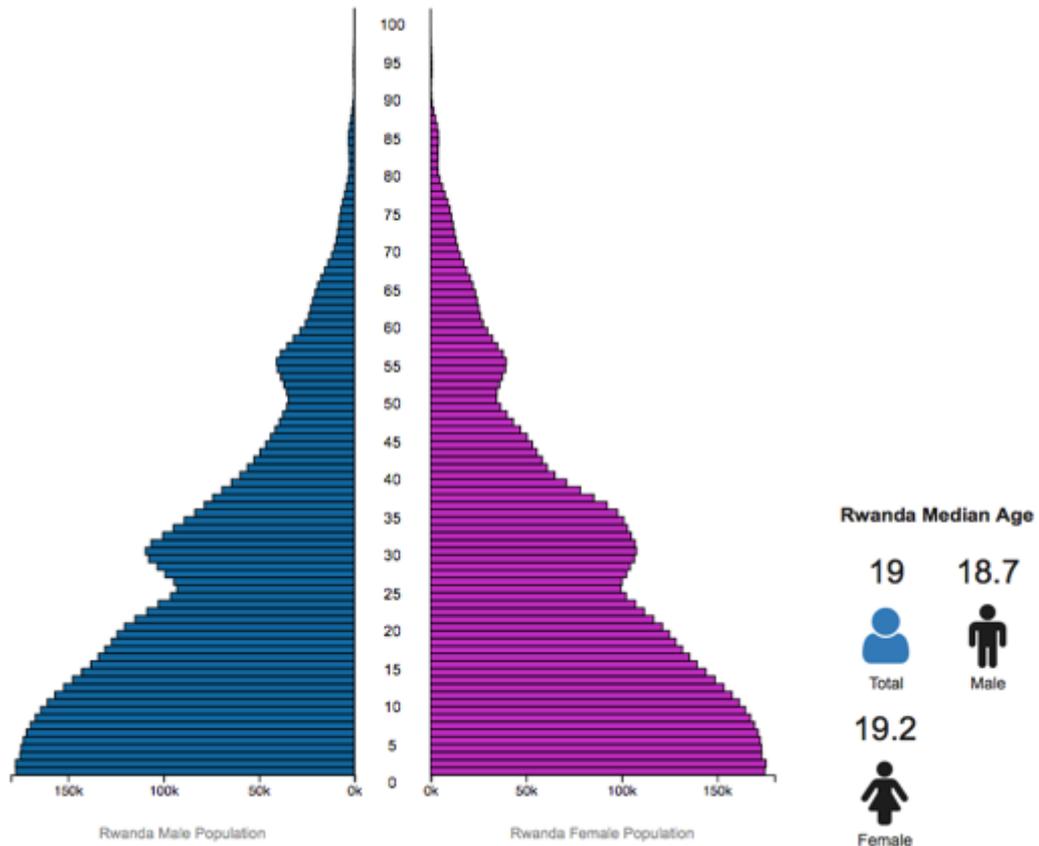


Figure 4.30: Rwanda's male and female population and median age.

Source: World Population Review, accessed 24.03.2018

As illustrated in Table 4.4 and Figure 4.31, RC has a wider range of age groups than YCN. The former is located within a residential neighbourhood in a peri-urban area, about 8km from the city centre. Weddings are a social activity, to which many families are invited. In fact, children participation in wedding responsibilities is core

as they take up responsibilities such as flower girls and pageboys. However, more youth dominate YCN, with sighting of few elderly people and very few children, towards the market street.

Table 4.3: Respondents' age structure.

	Age structure in YEARS					Sample
	Under 15	15-29	30-49	50-69	Over 70	
COUNT						
YCN	3	17	15	10	5	50
RC	15	20	20	30	15	100

Source: Author, 2017

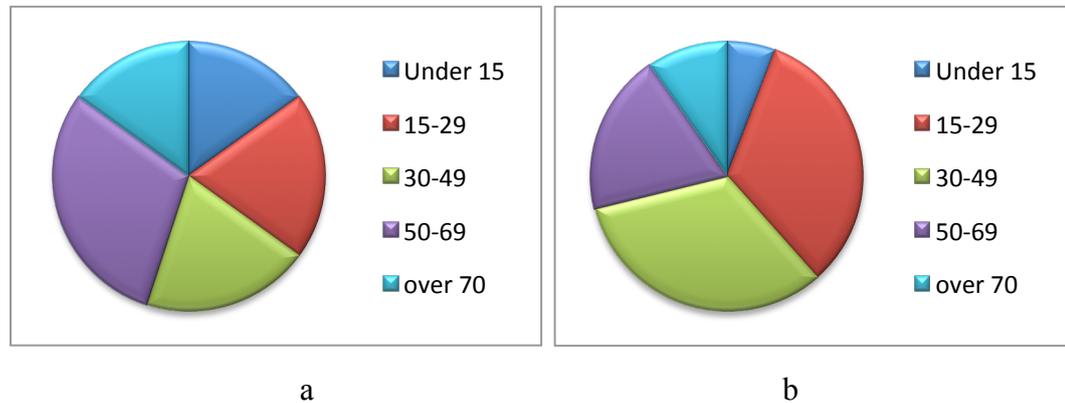


Figure 4.31 a and b: Respondents' age structure at RC (a) and YCN (b).

Source: Author, 2018

4.3.2 Gender

The population of Rwanda is composed of more women, 50.96 percent than men 49.04 percent as illustrated in **Table 4.4** and **Figure 4.32**. However, the field data collected in YCN indicated that male users of the case study spaces were higher than the female users. In all data collected, the male respondents exceeded the female respondents and there is a big gap in the participants of the two genders. In RC

however, the number of female users exceeded that of male users, even in the case of an Islamic wedding held in February 2018.

The differences in gender are evident in the space and activities therein, as illustrated in Table 4.4. Whereas in YCN men eat in public places, women eat at home. In RC in a ceremony where all members of the families related to the bride and groom were invited, it was women who took a special role in the wedding activity. This predominance of women in the process of marriage is evident not only in Rwanda, but also in other cultures in Africa.

Table 4.4: Respondents' gender.

<i>GENDER</i>	<i>YCN</i>	<i>RC</i>
<i>Male</i>	42	20
<i>Female</i>	8	30

Source: Author, 2017

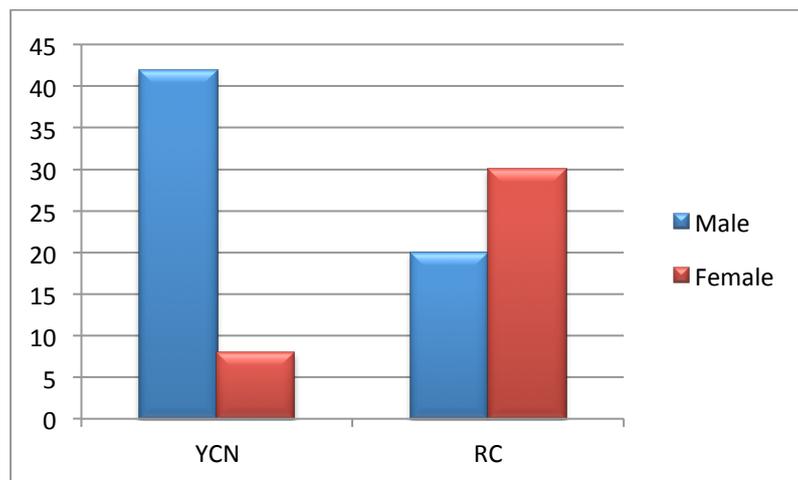


Figure 4.32: Respondents' gender structure at RC and YCN.

Source: Author, 2017

4.3.3 Education qualification

A full day of data on education background was collected, from 70 people on Y-Courtyard, 100 people on Y-node and 150 people on RC

As shown in Table 4.4.5 and Figure 4.33, users at Y courtyard were mostly high school leavers and also those with ‘below high school’ qualifications. The Y node had a similar distribution of education levels, with further expansion in the university graduates qualification group. Occasionally, a few master’s degree holders were found especially in the Mirembe mix restaurant.

Biryogo is a traditional residential area, and a wide range of users with a variety of qualifications had access to the space. Being close to the city allowed office workers and lecturers from the nearby university college (with high education qualifications) to visit the area, especially for lunch. The node has increasingly become a destination for many people, no matter their educational level.

Users of RC were university graduates and above, rather than high school and high school qualifications. The UPOS is not in a mixed-use area and is far from the city centre, 8km away; so users generally need a car to use it, and need to make a deliberate decision to use it for specific activities, in this case weddings. Weddings in Rwanda can be luxury events. A wedding hosted at Rujugiro compound, which is already an affluent area, will be mainly enjoyed by the middle-income bracket; as it is accessed mainly by car or hired vans and is by invitation. Of course, close relatives to the bride and groom have a mandatory participatory role and are invited as well. For these groups, special buses are hired from the rural areas where they will often have family roots.

Table 4.4.5: Respondents’ education qualifications.

EDUCATION QUALIFICATIONS			
	YC	YN	RC

<i>Below high school</i>	20	30	15
<i>High school</i>	48	40	50
<i>College andUniversity</i>	2	20	65
<i>Postgraduate</i>	0	10	20

Source: Author, 2017

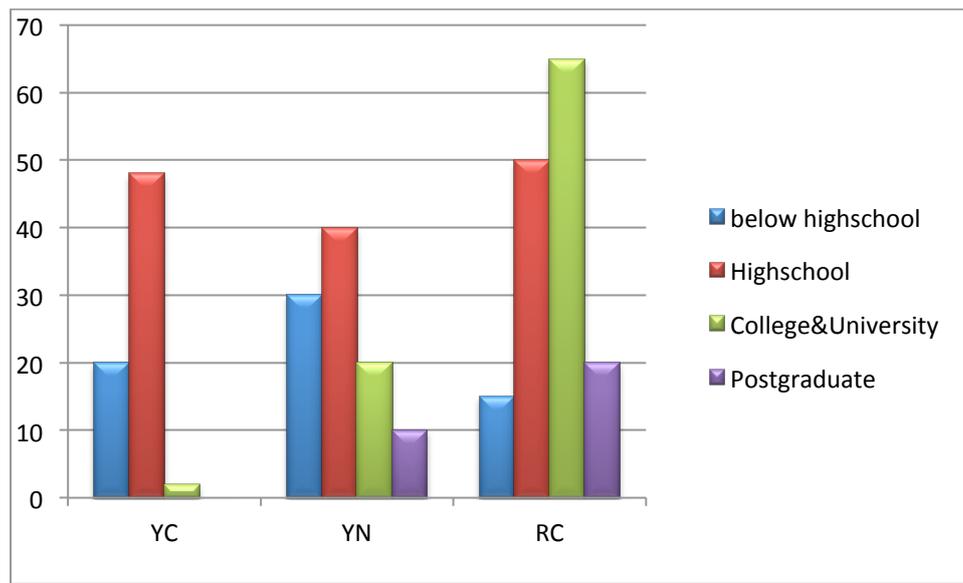


Figure 4.33: Respondents' educational qualifications at Yousouf's courtyard (YC), Yousouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.3.4 Occupation

Out of a sample of 50 users per UPOS was used. According to the data collected, different users in terms of their occupation visited all case studies. As indicated in Table 4.6 and **Figure 4.34**, students, self-employed and unemployed were the most common users in Yousouf's courtyard. The self-employed cluster dominated Yousouf's node whereas government employees dominated Rujugiro compound. However, there is an absence of private sector workers' users in Y-Courtyard and very few students at the Y-node, compared to other UPOS.

Table 4.6: Respondents' occupation.

OCCUPATION	YC	YN	RC
<i>Student</i>	15	5	10
<i>Government employee</i>	5	10	15
<i>Private sector</i>	0	10	10
<i>Self employed</i>	15	20	10
<i>Unemployed</i>	15	5	5

Source: Author, 2017

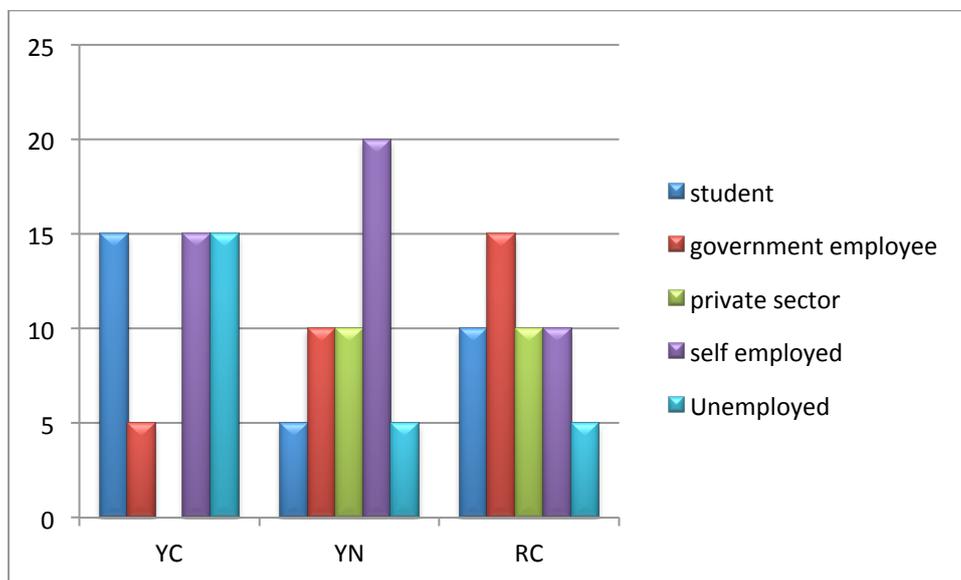


Figure 4.34: Respondents' occupation at Youssouf's courtyard (YC), Youssouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.3.5 Income

During interviews, the question of user's income was left to the very end of the survey, in order to ensure that the researcher and the interviewee have built a rapport and trust, which would consequently allow easy and honest response. The researcher also explained briefly to the participants, the importance of an honest answer to the study. As indicated in **Figure 4.34**, the study accomplished a satisfactory amount of

responses with only 10 percent of the participants electing not to answer. These were mainly youth, who either did not have their own income and were uncertain about their family income or just preferred to be understood as job seekers.

The survey indicated that various income groups used the case studies. Around 40 percent of case studies' users were in the less than 100,000 Rwf (118 USD) monthly income bracket, 35 percent were in the income 100,000-300,000 Rwf (118-352 USD) income bracket, and only 15 percent were in the more than 300,000 Rwf (352 USD) monthly income bracket.

In Biryogo, low-income users were the greatest group in the courtyard, followed by middle-income user groups and the least users, were the high-income groups. In the node however, middle-income users were the greatest group, followed by low-income user groups and least were the high-income user groups. In Rujugiro compound, middle-income users were the greatest group, followed by high-income user groups and least were the low-income user groups as illustrated in Table 4.7 and Figure 4.35.

Table 4.7: Respondents' income.

Source: Author, 2017

INCOME	YC	YN	RC
<i>Less than 100,000Frw</i>	14	5	10
<i>100,000-300,000Frw</i>	5	10	15
<i>Over 300,000Frw</i>	1	10	10

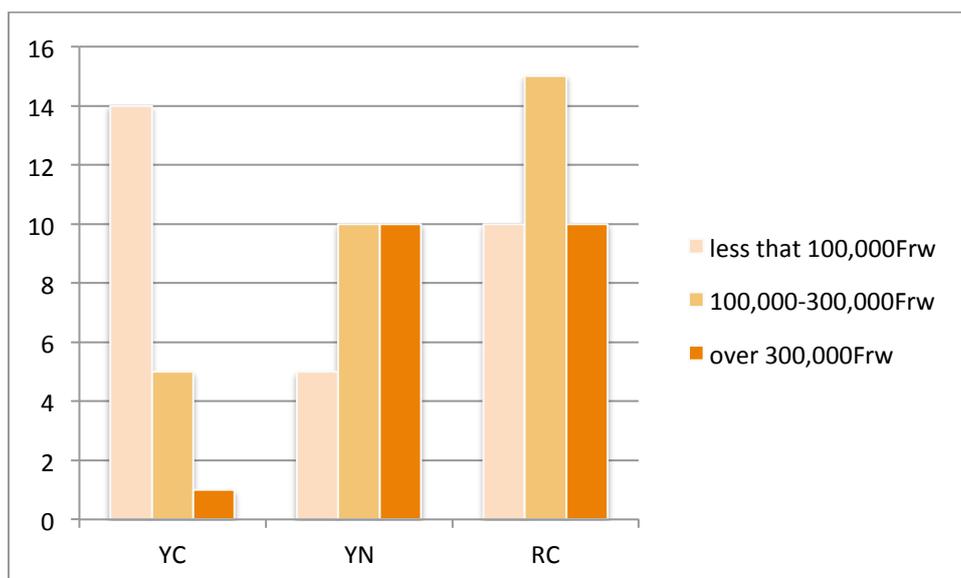


Figure 4.35: Respondents' income at Youssouf's courtyard (YC), Youssouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.3.6 Users' company

As shown in Table 4.8 and Figure 4.36, the study found that more than 50 percent of the respondents, in all UPOS case studies, reported that they usually visited the places accompanied by others, and over 25 percent visited either accompanied or individually. Only less than 25 percent visited alone.

Whereas lone visitors were found in Biryogo Y-C and Y-N, there were no lone visitors in Rujugiro compound. This is largely due to the fact that fieldwork was carried out on wedding days, which are largely social events, whereas in Biryogo, fieldwork was carried out on ordinary days, during the week and weekends.

Table 4.8 Respondents' user company.

USER COMPANY			
	YC	YN	RC
<i>Accompanied</i>	25	35	55

<i>Either accompanied or individually</i>	15	15	15
<i>Individually.</i>	5	10	0

Source: Author, 2017

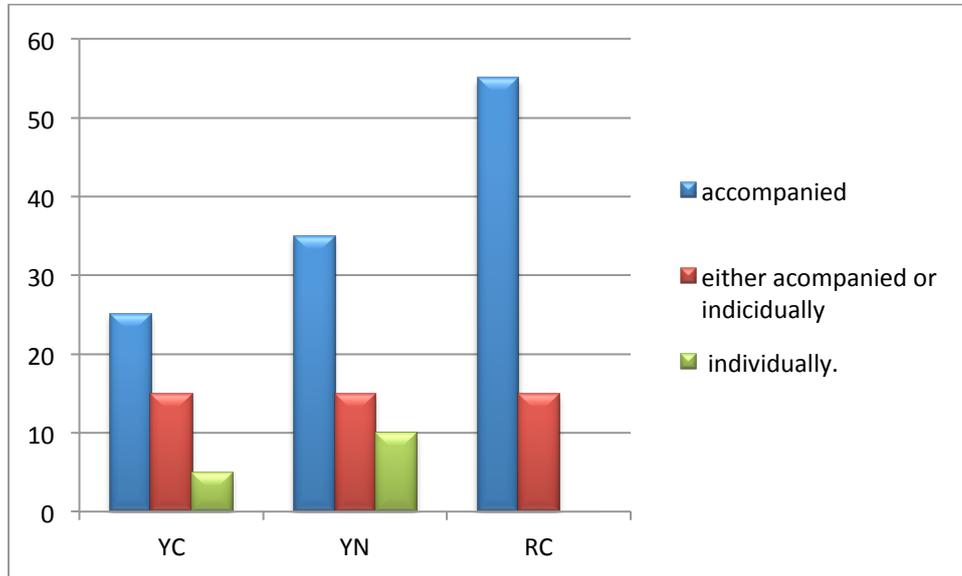


Figure 4.36: Users' company at Youssouf's courtyard (YC), Youssouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2017

4.3.7 Users' visual perception

The study gathered data on visual perception by zooming into the four restaurants around the node in Biryogo. The restaurants were categorised into four typologies. Typology A- *kwa* Issa restaurant, Typology B- *café resto*, Typology C –mountain coffee and Typology D- *kwa* Youssouf.

4.3.7.1 Typology A

As illustrated in Figure 4.37, there are no barriers or screens at all so people just walk in. There are always many people present and a broad diversity in activities; playing games, eating food, fruit salad, drinking coffee, tea, milk. The researcher found that users stayed longer.

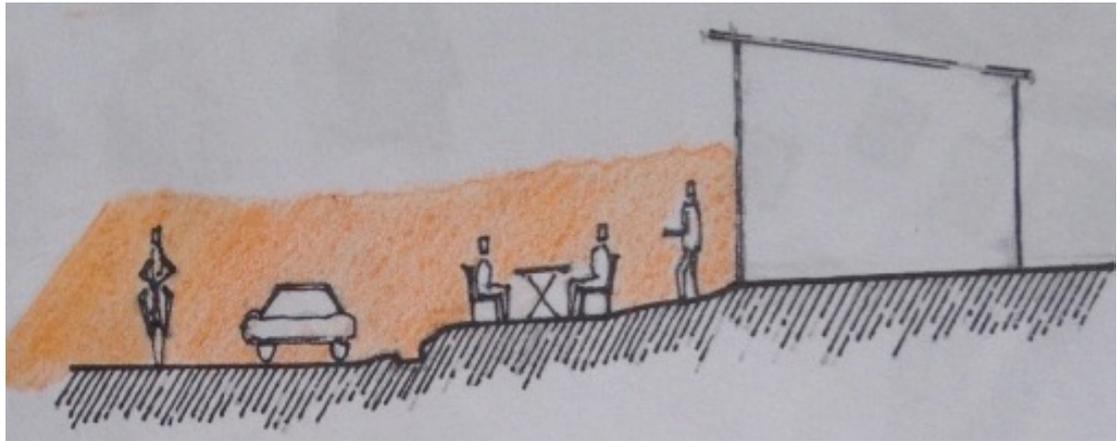


Figure 4.37: *kwa Issa* Restaurant. Typology A

Source: Author, 2017

4.3.7.2 *Typology B*

As illustrated in Figure 4.38, there are 0.6-meter tall porous screens of steel bars. These screens act as physical barriers even though the restaurant is visually porous. The study found that there are fewer people in the compound as compared to those in A. Over lunch hour, the space in front of the restaurant becomes a motorbike park as illustrated in Figure 4.39.

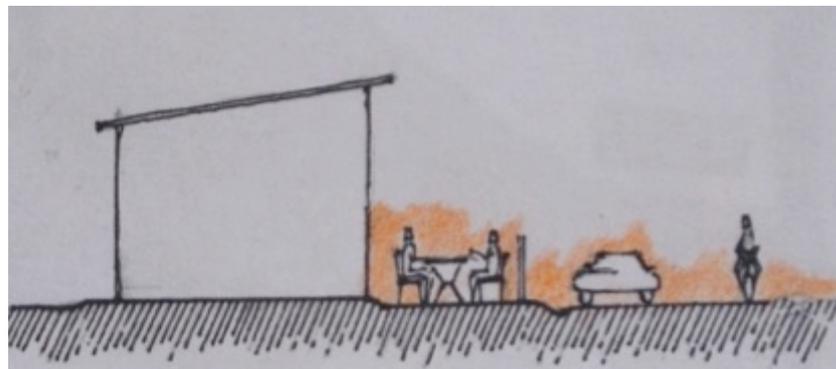


Figure 4.38: *Café Resto* Restaurant. Typology B

Source: Author, 2017



Figure 4.39: Motobyke parking at Youssouf's node.

Source: Author, 2017

In Typology C, as illustrated in Figure 4.40, there is a 0.9 meter tall solid screen and overhead hang down screen, leaving only a 0.6 meter visual window. There are relatively fewer people in the courtyard, compared to those found in A and B. People sit on high stools in order to watch street activities as they drink coffee. The study found that the solid wall acts as a barrier for the flow of activities to the street.

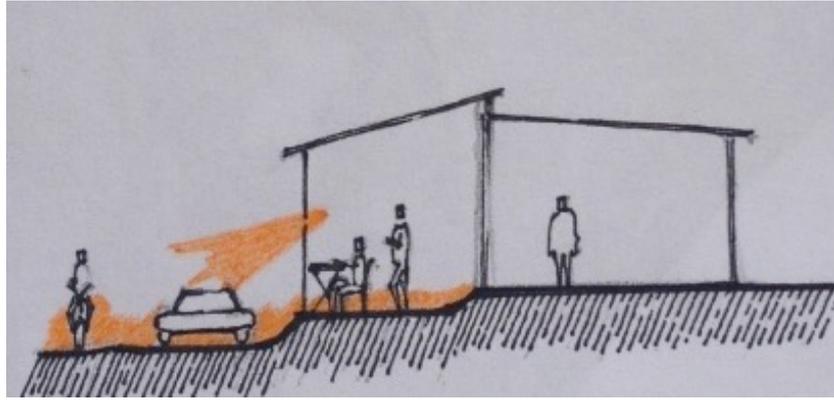


Figure 4.40: Mountain coffee Restaurant. Typology C

Source: Author, 2017

In Typology D, as illustrated in Figure 4.41 , the restaurant is inside the courtyard and invisible from the street. The study found that due to its fame and familiarity over the years, many people, especially the youth, regard it as a favourite haunt. People mainly drink coffee, green tea, eat food or none. People stay for long to chat and play games; traditional (*igisoro*) and contemporary games (poker).

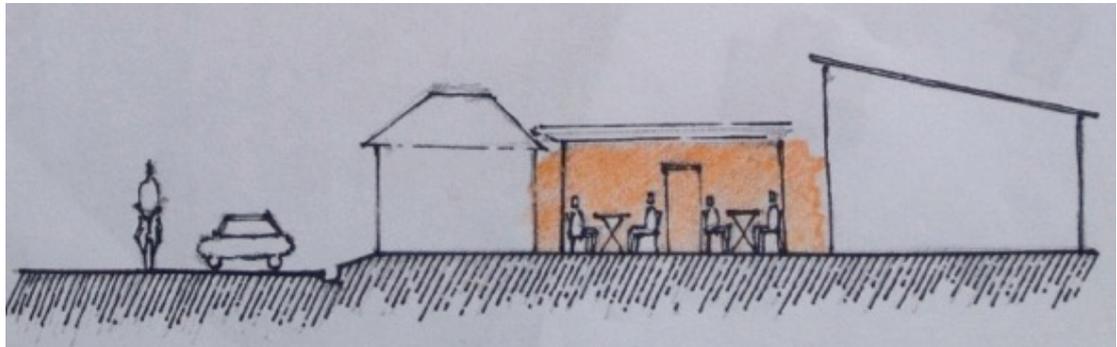


Figure 4.41: kwa Youssouf Restaurant. Typology D

Source: Author, 2017

Using the scale of semantic differential illustrated in Table 4.9, the participants were interviewed and provided rating examples, that estimated how they visually perceived each of the four restaurants around the node.

Table 4.9: Scale of semantic differential in visual perception.

Monotonous	-2	-2	0	1	2	Dynamic
Repulsive	-2	-2	0	1	2	Attractive
Disarranged	-2	-2	0	1	2	Arranged
Artificial	-2	-2	0	1	2	Natural
Boring	-2	-2	0	1	2	Interesting
Disrupting	-2	-2	0	1	2	Comforting
Disharmonized	-2	-2	0	1	2	Harmonious
Dysfunctional	-2	-2	0	1	2	Functional
Intense	-2	-2	0	1	2	Relaxed
Unsocial	-2	-2	0	1	2	Social
Unattractive	-2	-2	0	1	2	Attractive
Cold	-2	-2	0	1	2	Warm
Uninspiring	-2	-2	0	1	2	Inspiring
Poor	-2	-2	0	1	2	Diverse
Uncertain	-2	-2	0	1	2	Certain
Unavailable	-2	-2	0	1	2	Available

Source: Author, 2017

The POS semantic differential in visual perception of the four restaurants was therefore captured in Table 4.10, which as illustrated in Figure 4.42 confirmed that *kwa* Issa restaurant and *Kwa* Youssouf's restaurant scored the highest in user perception, which was also reflected by the number of users and frequency of use.

Table 4.10: Semantic differential in visual perception of the four restaurants at the node.

	Typology A (<i>kwa</i> Issa)	Typology B (<i>café resto</i>)	Typology C (Mountain coffee)	Typology D (<i>Kwa</i> Youssouf)
Monotonous - Dynamic	2	0	1	1
Repulsive - Attractive	2	0	0	-2
Disarranged - Arranged	1	2	2	1
Artificial - Natural	0	-1	-2	1
Boring - Interesting	2	0	1	2

Disrupting - Comforting	0	0	1	2
Disharmonized - Harmonious	-1	1	1	1
Dysfunctional - Functional	2	1	1	2
Intense - Relaxed	2	-1	0	2
Unsocial - Social	2	2	2	2
Unattractive - Attractive	2	1	1	-1
Cold - Warm	2	0	1	2
Uninspiring - Inspiring	2	0	0	1
Poor - Diverse	2	1	1	1
Uncertain - Certain	1	1	1	1
Unavailable - Available	2	1	2	1

Source: Author, 2017

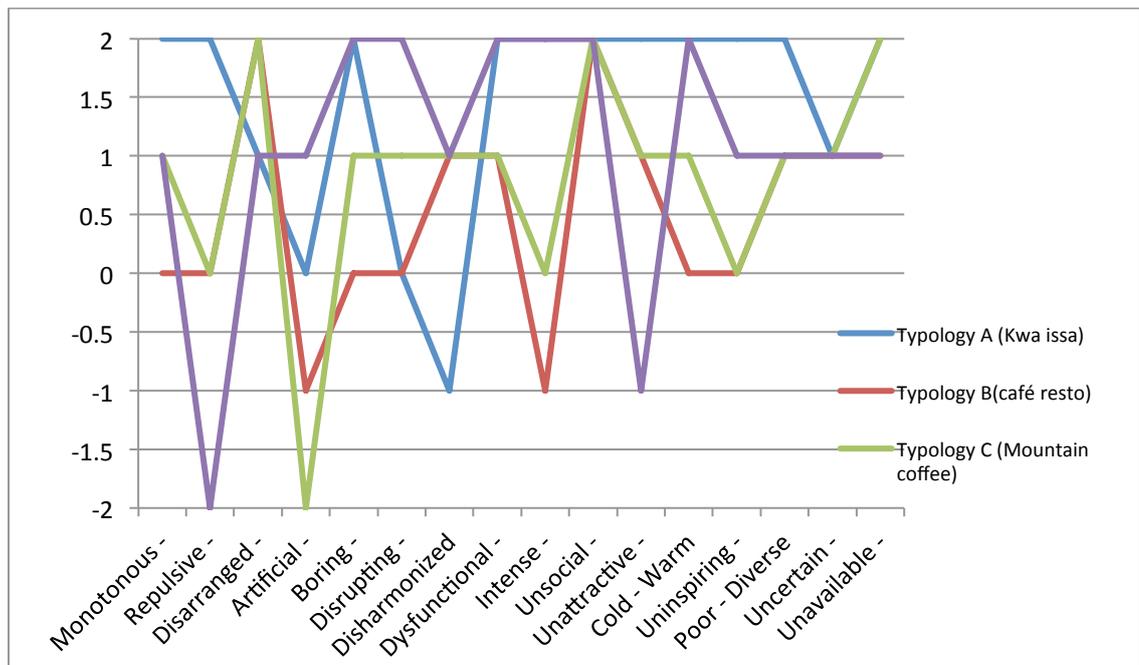


Figure 4.42: Semantic differential in visual perception of the four restaurants at the node.

Source: Author, 2018

4.4 Spatial and Socio-Economic Characteristics of UPOS

This section discusses the accessibility, identity and urban character of UPOS and the economic, environmental quality, safety, maintenance, users' activities as well as the users' requirements.

4.4.1 UPOS accessibility

The majority of the participants in Courtyard and YCN node in Birogo case studies felt that the spaces were more accessible and easier to reach. On the other hand RC was not easily accessible and easy to reach, as one needed a car or bus to reach there. People were not comfortable to ride on a motorbike to attend a ceremonial event like a wedding. The 'reception' event was also happening in the evening, following a morning church service, which mostly happened far away; in most times at least eight kilometers away.

As shown in Table 4.11 and Figure 4.43, in YCN, people use more diverse travel means compared to RC. The users of this UPOS could either walk, use a motorbike, a bicycle, car, and public bus. Interestingly, the research found out that the *Mirembe mix* restaurant within the node offers free transport (from and back to work) to clients who come in groups of at least five people.

The research used both travel means and journey time experiences to analyse the UPOS accessibility.

4.4.1.1 Travel means

Table 4.11: UPOS travel means.

TRAVEL MEANS	YC	YN	RC
<i>On foot</i>	20	30	0
<i>Bicycle and motto cycle</i>	18	20	5
<i>Taxi and Private car</i>	2	15	35
<i>Public bus</i>	0	5	30

Source: Author, 2017

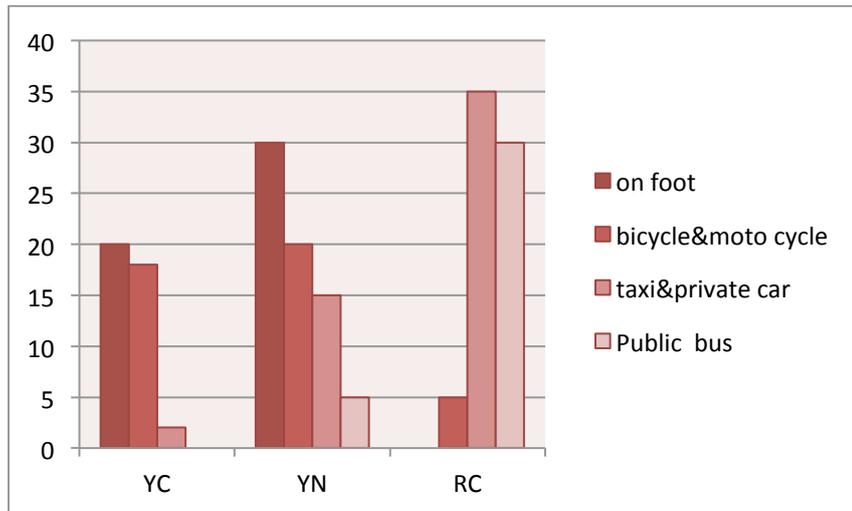


Figure 4.43: Users' travel means to Youssouf's courtyard (YC), Youssouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.4.1.2 Journey time experiences

The study examined the journey time experiences of the respondents; which were captured in four categories; under five minutes, five to fifteen minutes, fifteen to thirty minutes and over thirty minutes. This was determined by points of origin or travel from home and/or work.

As indicated in Table 4.12 and Figure 4.44, for YCN, majority of the users reach the UPOS within fifteen minutes, whereas at RC, majority of the users travel for over thirty minutes to arrive at the UPOS

Table 4.12: UPOS Journey time experiences.

TRAVEL TIME	YC	YN	RC
<i>Under 5min</i>	15	10	0
<i>5-15min</i>	15	30	5

<i>15-30min</i>	15	20	25
<i>Over 30min</i>	5	10	40

Source: Author, 2017

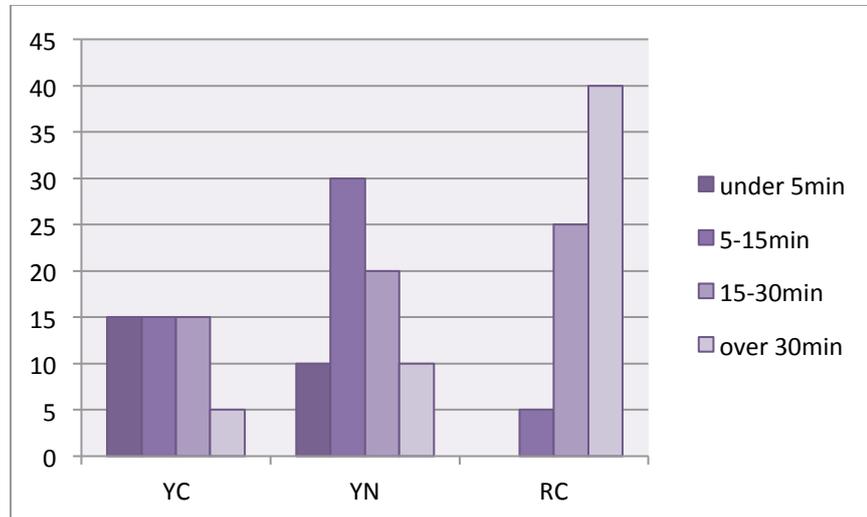


Figure 4.44: Users' travel times to Youssouf's courtyard (YC), Youssouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.4.2 UPOS identity and urban character

Over 70 percent of the participants expressed the view that all the case studies represent a good characterisation of Kigali's identity and character. Majority of the participants in Biryogo thought that the two UPOS case studies do have a distinctive local character and vibrancy in social life that is good for the city. As indicated in Table 4.13 and Figures 4.45 a, b and c, the older Y courtyard had a higher rate of space identity than the node, which has experienced relatively new transformation in the last two years.

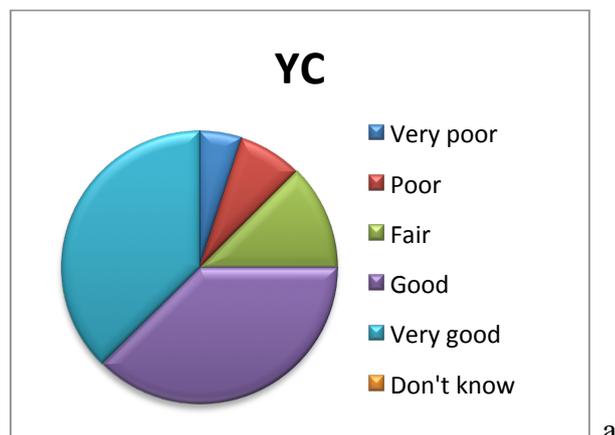
RC is a recognised a landmark in the city, even though it is located eight kilometers away from the CBD. Respondents represented it as an aesthetic palace with not only

good appearance and design but also with similarities to the traditional courtyard system therefore loyal to the Rwandan historic context.

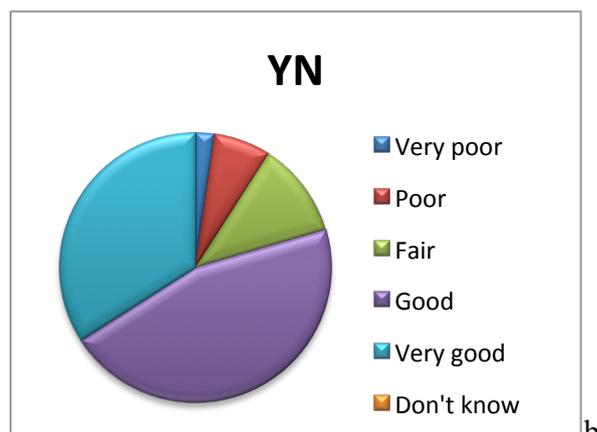
Table 4.13: UPOS identity and urban character.

UPOS identity and urban character					
	YC		YN		RC
<i>Very poor</i>	2		1		0
<i>Poor</i>	3		3		0
<i>Fair</i>	5		5		5
<i>Good</i>	15		20		30
<i>Very good</i>	15		15		25
<i>Don't know</i>	0		0		2

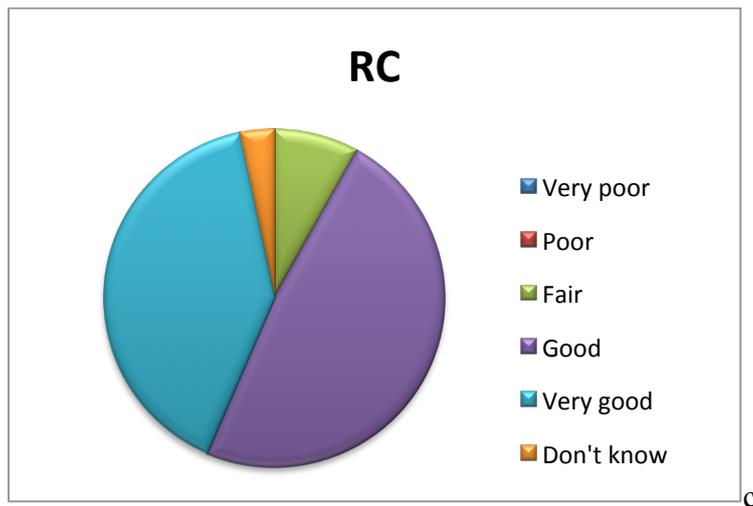
Source: Author, 2017



a



b



Figures 4.45 a, b and c: The UPOS identity and urban character at Youssouf’s courtyard (a), Youssouf’s node (b) and Rujugiro’s compound (c).

Source: Author, 2018

4.4.3 UPOS economy

Literature review highlighted a relationship between good design and economic significance. Participants were asked their opinion on the impact of the existing UPOS (design and activities) and its contribution to the economy. However, the results indicated that despite the high ratings given to the design and appearance of the case studies above, unexpectedly the responses demonstrate a perception of significant weakness in the economic contribution of these spaces.

Table 4.14 indicates the relationship between visitor facilities and the contribution of the space to economic activity. The results indicate that over 60 percent of respondents in all the UPOS case studies thought that UPOS had no effect on commercial activities in the surrounding area.

From the responses, it is clear that if the contribution of UPOS to commercial activities in the surrounding area, is to be realised, then the design of UPOS needs to be reinforced with facilities which in turn attract other businesses.

Table 4.14 : UPOS Economy.

Availability of visitor facilities	Contribution to commercial activities around					
	Very poor	Poor	Fair	Good	Very good	Don't know
Very poor	51%	13	16	10	6.5	3.2
Poor	5	22	21	35	17	0
Fair	10	21	29	25	14	0
Good	5	14	40	36	4.5	0
Very good	12.5	12.5	32	12.5	31.3	0

Source: Author, 2017

4.4.4 UPOS environmental quality

Kigali is located two degrees south of the Equator, a tropical setting where eastern sun is accepted but western sun is harsh and avoided especially during the dry season; with only two rain seasons. Evidently, in Biryogo's grid, planned neighbourhoods' activities seem to take patterns according to the sun's position and the availability of shade.

The research used consideration for local climate in the design as well as preferred visit times to measure the environmental quality of the UPOS. The weather in Kigali is generally pleasant and most fieldwork was carried out between October 2017 and February 2018, a period which is largely warm and dry. Even when there are rains, they generally last a maximum of two hours and within an hour, the land dries up, and normal activities resume.

Therefore, these findings suggested that weather should not be viewed as a hindrance to the use of UPOS in Kigali. Indeed, weather only influences the pattern of activities. For instance, when the weather is fine, one notes the number of people seated, drinking coffee or playing games on the shaded part of the buildings or under the trees.

For the study, only 10 percent of respondents preferred warm weekday/Friday evenings

At the Biryogo courtyard and node, there was a noted presence of people at most times of the day, and thus impossible for the questionnaires to be filled in the mornings, noon, afternoons and evenings. Of course, the lunch hour was the most vibrant time to administer the questionnaire.

4.4.4.1 Consideration for local climate

Table 4.15 presents the results of the consideration for local climate in UPOS design. The results indicate that more than 50 percent of participants in Youssouf’s courtyard rated the environmental quality as either poor or fair, thus indicating that any attempts to improve the conditions that provide thermal comfort may encourage more users.

‘More trees’ and ‘Shade’ were frequently mentioned in responses to the question on what would encourage more people to use the space more often, or to stay for longer periods.

Table 4.15: UPOS Environmental quality.

Consideration for local climate in UPOS design			
	YC	YN	RC
<i>Very poor</i>	2	2	0
<i>Poor</i>	2	2	1
<i>Fair</i>	10	15	15
<i>Good</i>	10	20	20
<i>Very good</i>	5	15	20
<i>Don't know</i>	0	2	4

Source: Author, 2017

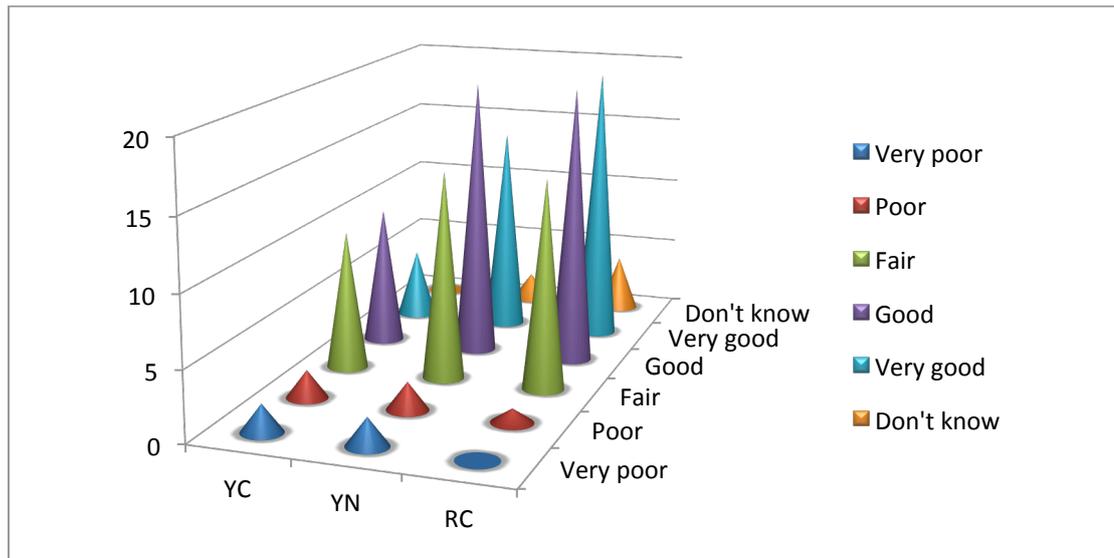


Figure 4.46: Consideration for local climate in UPOS design at Youssof's courtyard (YC), Youssof's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.4.4.2 Preferred visit times

Table 4.16 presents the results of the preferred visit times to the respective UPOS. The results indicate that most of the users of Y courtyard preferred to visit in the morning, which relates to breakfast and/or coffee hours, mostly for the youth. Further, results indicated that most users of the Y node preferred to visit at noon—which is the start of the lunch window, during which people flock the various restaurants within the node. For RC, the results indicate that most users preferred to visit in the afternoons, which coincided with the typical time slots of wedding ceremonies in Kigali.

Table 4.16: UPOS preferred visiting times.

Preferred visiting times UPOS design			
	YC	YN	RC
<i>Morning</i>	15	10	2
<i>Noon</i>	20	35	10
<i>Afternoon</i>	25	25	35
<i>Evening</i>	20	20	15

Source: Author, 2017

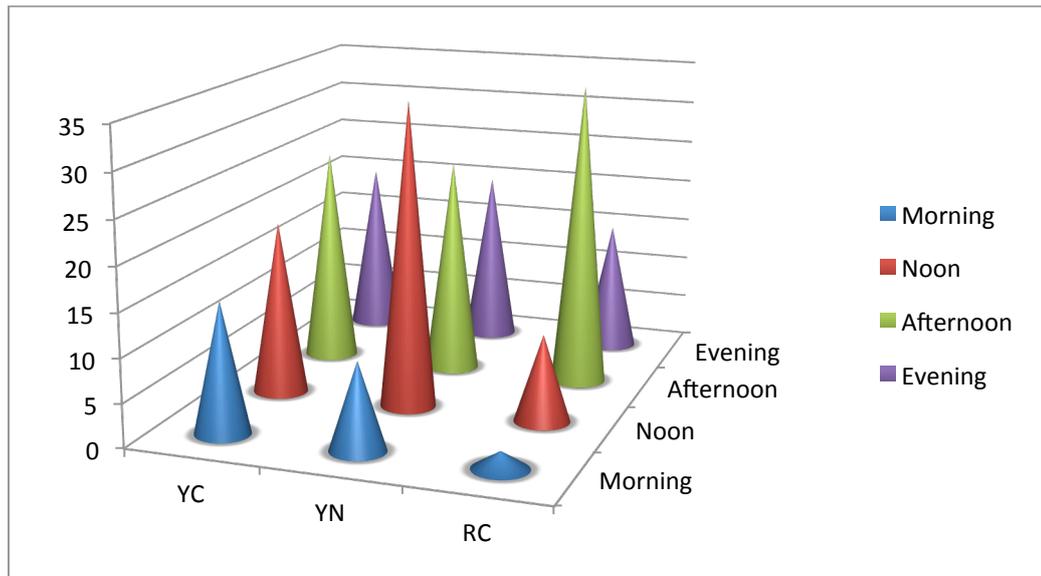


Figure 4.47: Preferred visiting times to Youssouf's courtyard (YC), Youssouf's node (YN) and Rujugiro's compound (RC).

Source: Author, 2018

4.4.5 UPOS safety

Safety is a crucial element in encouraging people to use open spaces. Participants in both Biryogo and Rujugiro indicated their satisfaction with safety of the two sites, as indicated in Table 4.17 and **Figure 4.48** For Biryogo, a majority of respondents found the node very safe and only a few found it safe. All women and children users, despite their few numbers, found the courtyard and node very safe.

However, at RC, 5 percent of the participants felt its safety was poor- though the predominant views expressed fair and good. The poor safety was mainly attributed to the road passing right in front of the gate, with some participants observing that crossing a road with many motorbikes and buses could be unsafe especially for their children. So, road related risks influenced the rating of safety of the compound; lack of zebra crossings, open drains etc., which could be easily addressed by proper road design, rather than the actual design of UPOS.

Since some participants were from the rural areas, they may have been influenced by a natural unawareness of the city, given their perspective that generally associates urban centres with insecurity. RC, which was studied mainly during wedding ceremonies, was perceived as unsafe by certain respondents, perhaps due to the large numbers of people and strangers around. Some elderly respondents, criticised the ‘anti-social’/ ‘anti-cultural’ behaviour exhibited in the way that youth dressed, chatted loudly and littered the gardens. To the elderly, the loud and contemporary music played, also affected their rating of the safety of UPOS.

Table 4.17: UPOS safety.

UPOS safety	YC	YN	RC
<i>Very poor</i>	0	2	0
<i>Poor</i>	2	2	0
<i>Fair</i>	10	15	20
<i>Good</i>	20	15	35
<i>Very good</i>	15	15	45
<i>Don't know</i>	0	5	10

Source: Author, 2017

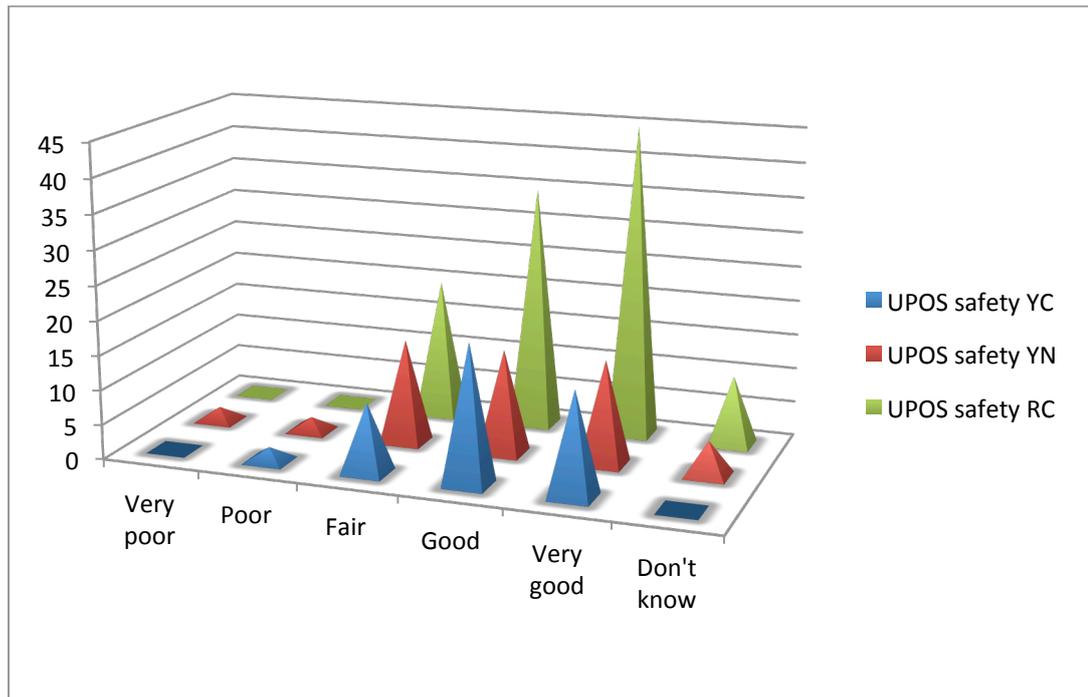


Figure 4.48: UPOS safety at Youssouf’s courtyard (YC), Youssouf’s node (YN) and Rujugiro’s compound (RC).

Source: Author, 2018

4.4.6 4.4.6 UPOS maintenance

The maintenance of any UPOS is a determining factor of its cleanliness, which in turn attracts people to it or motivates them to stay longer. Participants in YCN and RC responded on perception of the UPOS cleanliness and maintenance. For satisfaction with RC; respondents noted that the compound had well-manicured gardens, VIP rooms, bathrooms, guestroom and servant quarter designed for a rich man’s palace and hence of above average standards for most of the respondents.

At YNC, respondents noted that they were more satisfied of the *kwa* Issa restaurant, rather than with the Youssouf’s courtyard. For the latter, respondents were least satisfied noting the lack of proper lighting at night, lack of sun shading, lack of paved floors, and lack of good furniture as their main reasons. Additionally, cleanliness,

especially during the rainy season was not up to their expectations, although most of them felt that Youssouf’s sister worked hard to keep the place clean.

Table 4.18: UPOS maintenance.

UPOS Maintenance	YC	YN	RC
<i>Very poor</i>	0	2	0
<i>Poor</i>	4	2	0
<i>Fair</i>	10	15	25
<i>Good</i>	10	20	40
<i>Very good</i>	2	5	50
<i>Don't know</i>	0	5	10

Source: Author, 2017

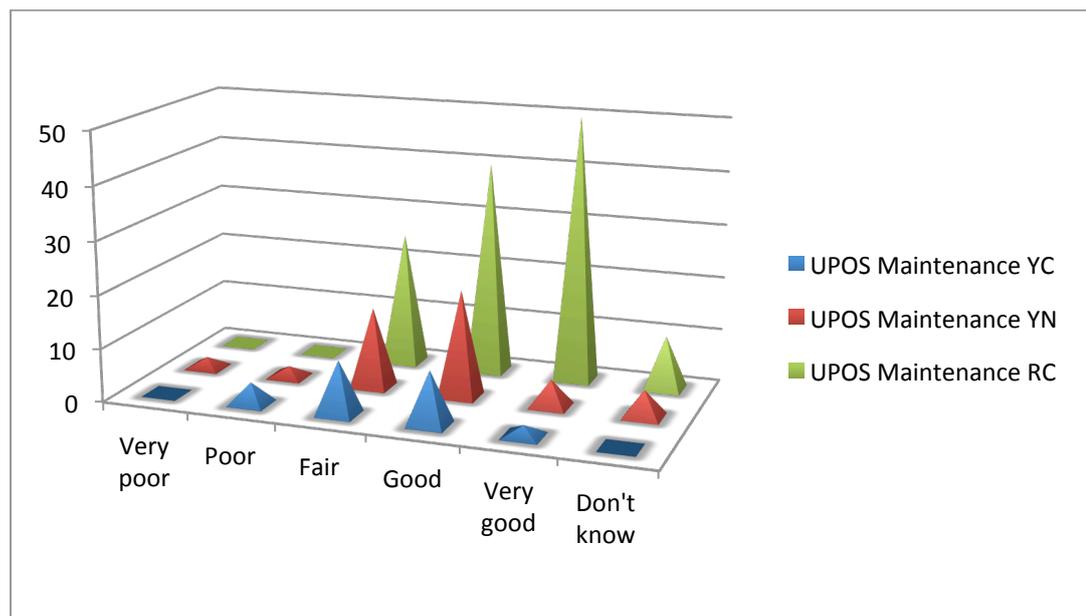


Figure 4.49: The standard of maintenance of UPOS at Youssouf’s courtyard (YC), Youssouf’s node (YN) and Rujugiro’s compound (RC).

Source: Author, 2018

4.4.7 UPOS Users' activities

Respondents were asked what activities they would normally do in the UPOS. As illustrated in Table 4.19 and Figure 4.50, the sequence of preferable activities varied between the case studies. In YCN, the most frequent responses were *'drink coffee'*, *'eat food/salad'*, *'play games'*, *'chat with friends'*, and *'meet someone'*.

At RC, besides the main function of invitation to attend the ceremony, the other most frequent responses were *'entertainment'*, *'take photos'*, *'eat and drink'*, *'enjoy being in the city'* and *'enjoy a beautiful place'*. Most respondents, over 90 percent, were not drawn from the Gikondo neighbourhood. Immediate neighbours to the compound did not feel welcome to visit. An example of this was the observation of wedding occasions, when children would be climbing over the walls or waiting at the entrance to force their way in, mainly for cake, soda or food. Some people from the neighbourhood would loiter around the venue, staring at the sight of the cars and the well-dressed people, especially ladies.

As discussed earlier, the users of Youssouf's courtyard were mainly the youth-whose spread of preferred activities was dominated by *chatting, meeting friends, food and drink*. At the node, there was a wider range of users by age. The users at RC were also mixed ages and the comparison was more urban vs. rural areas. Families met together and enjoyed meeting other families. The elderly, from either family, enjoyed meeting and chatting as well as practice of cultural activities such as dress, speeches and drinking traditional beer.

Table 4.19: Respondents' activities in each UPOS.

	ACTIVITY	Youssouf's courtyard	Biryogo Node	Rujugiro's compound
a	Enjoy beautiful place	3	10	19
b	To relax and refresh	10	8	5
c	To eat/drink	10	15	20
d	Attend event	5	2	20

e	Watch or play traditional games	10	17	0
f	Watch or play modern games	5	5	15
g	Children/ family outing	0	5	17
h	Meeting/ organized study	5	0	5
i	Pass through/ shortcut	3	12	0
j	Take photos	0	2	12
k	Shopping	0	5	0
	Any other

Source: Author, 2017

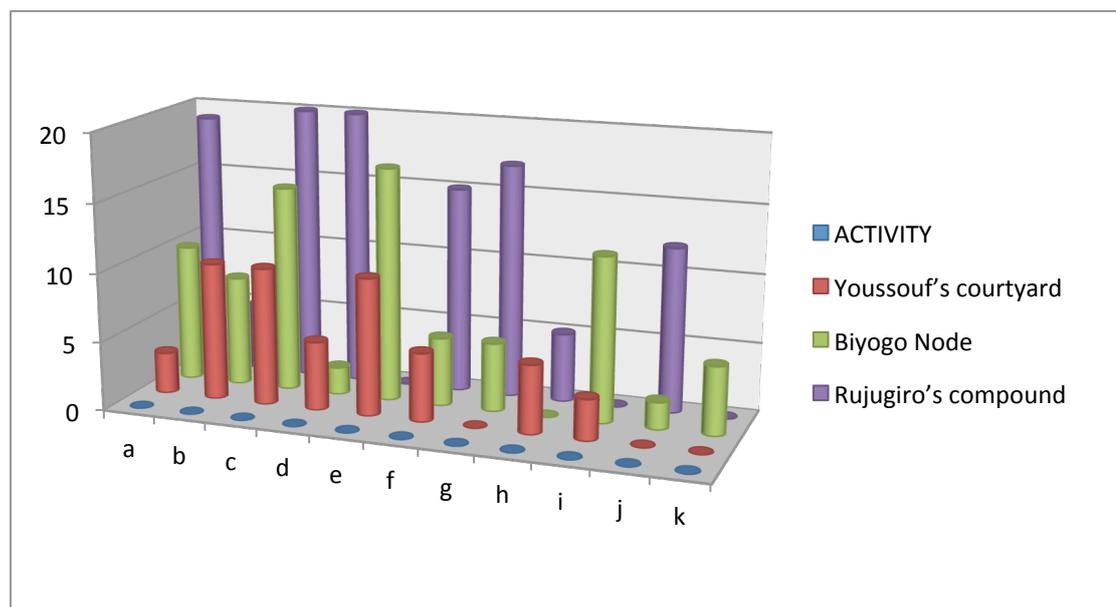
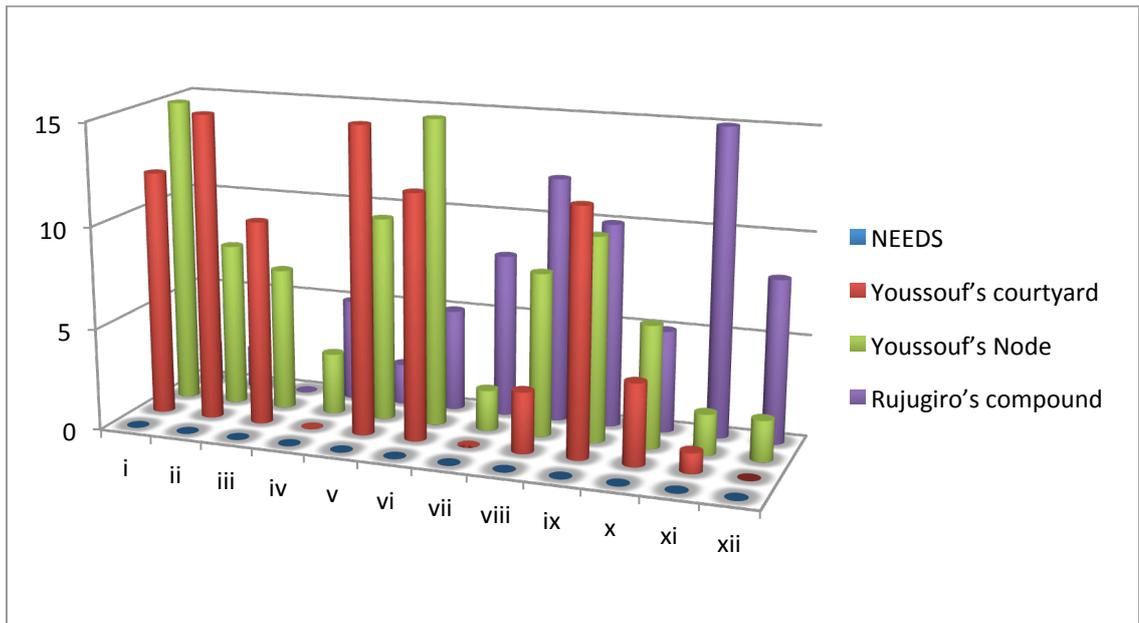


Figure 4.50: Respondents' activities in each case study UPOS:

Source: Author, 2018

4.4.8 UPOS Users' requirements

The researcher attempted to find out what would entice the users to visit more, stay longer and engage more actively with the UPOS. Respondents were asked to suggest what should be added or improved to make the experience of users memorable. As illustrated in Table 4.20 and



Figure

4.51

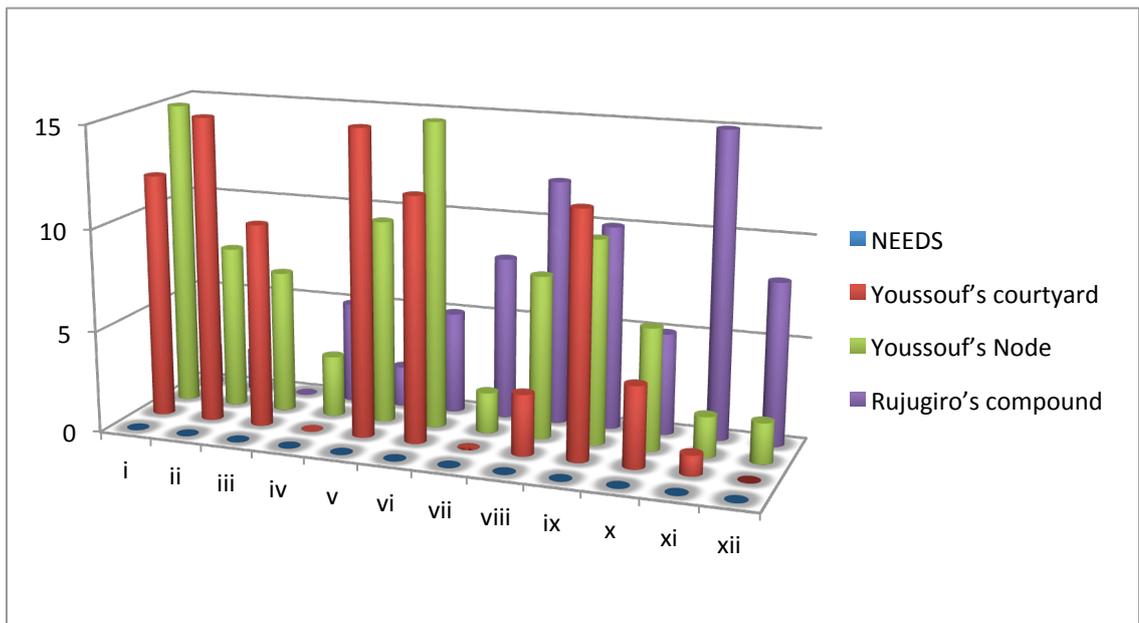


Figure 4.51, over 80 percent of respondents reported that basic services and amenities were fundamental. The addition of leisure activities, received mixed reactions, depending on the age group and occupation of respondents.

Table 4.20: Respondents' requirements in each UPOS.

		FREQUENCY		
	NEEDS	Youssef's	Youssef's	Rujugiro's

		courtyard	Node	compound
<i>i</i>	<i>Clean Toilets</i>	12	15	2
<i>ii</i>	<i>Better Seats</i>	15	8	2
<i>iii</i>	<i>Good Quality Restaurant/cafeteria</i>	10	7	0
<i>iv</i>	<i>Good Quality Shop</i>	0	3	5
<i>v</i>	<i>Better Shading</i>	15	10	2
<i>vi</i>	<i>Better Lighting</i>	12	15	5
<i>vii</i>	<i>Kids play area</i>	0	2	8
<i>viii</i>	<i>Safer Walkways</i>	3	8	12
<i>ix</i>	<i>Better Pavement/floor</i>	12	10	10
<i>x</i>	<i>Litter bins</i>	4	6	5
<i>xi</i>	<i>Arrangement/cost of venue for events</i>	1	2	15
<i>xii</i>	<i>More greenery</i>	0	2	8

Source: Author, 2017

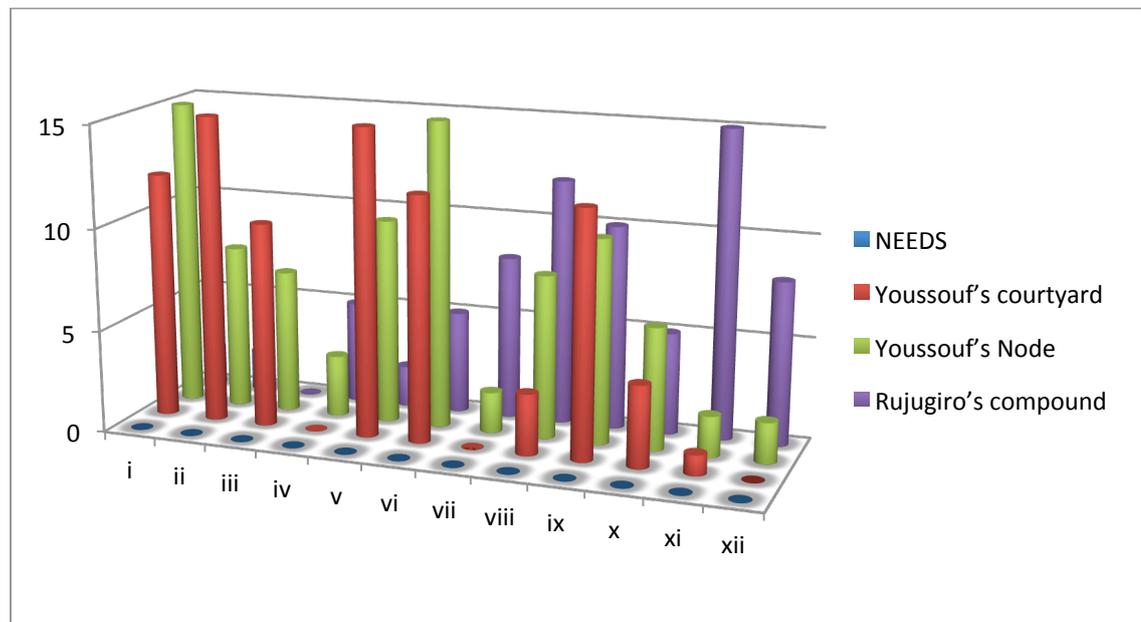


Figure 4.51: Respondents' needs and aspirations on case study UPOS:

Source: Author, 2018

4.5 Case study UPOS evaluation

4.5.1.1 This section presents the evaluation of UPOS with an emphasis on the physical composition of the reference case study KPM as illustrated in figure 4.53 and their interpretation as illustrated in Table 4.21 and An interpretation of the physical elements of traditional public space

Table 4.22. It further presents the evolution of the transformative case of YCN in order to highlight the various changes that have occurred over time. These changes consequently play a role in transforming the liveability of UPOS.

4.5.2 Physical composition of KPM

4.5.2.1 King's palace museum, Nyanza.

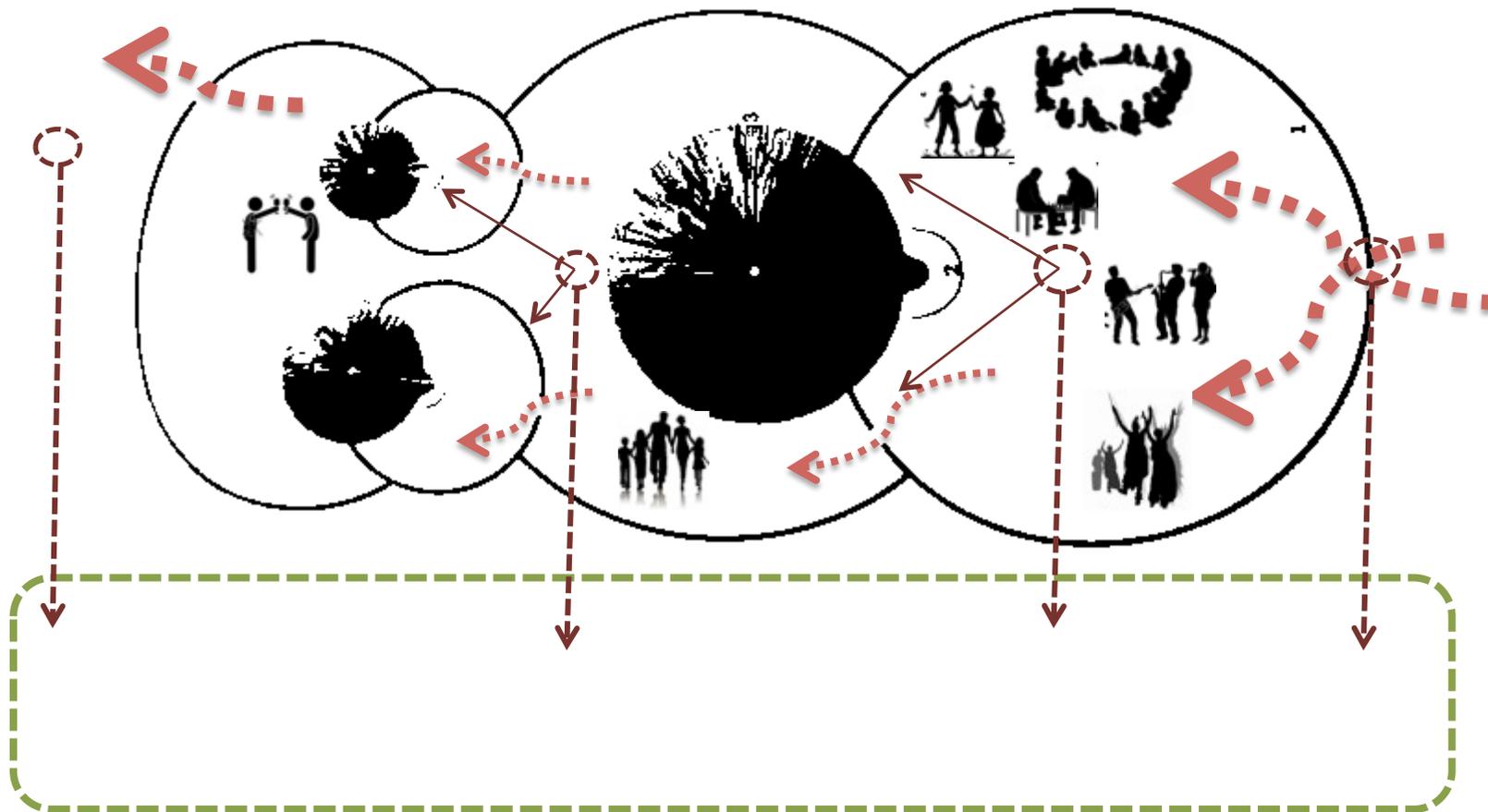
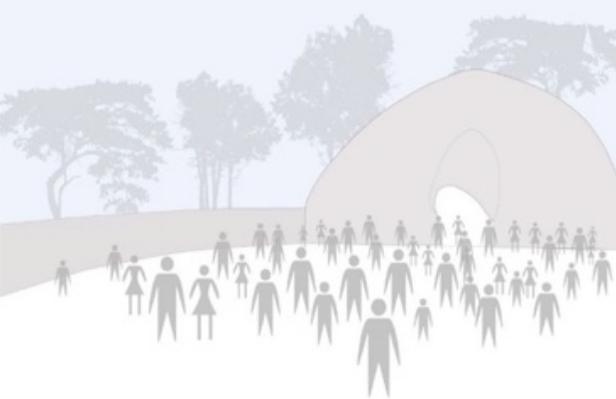
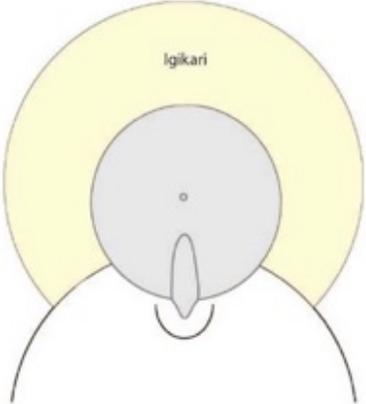


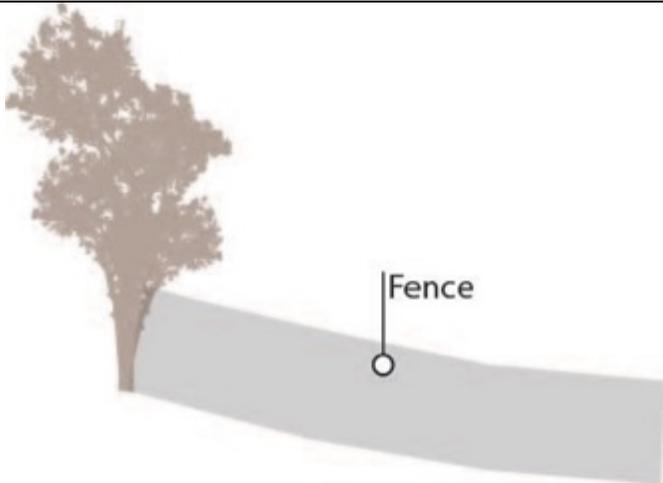
Figure 4.52: King's palace museum, Nyanza. Layout.

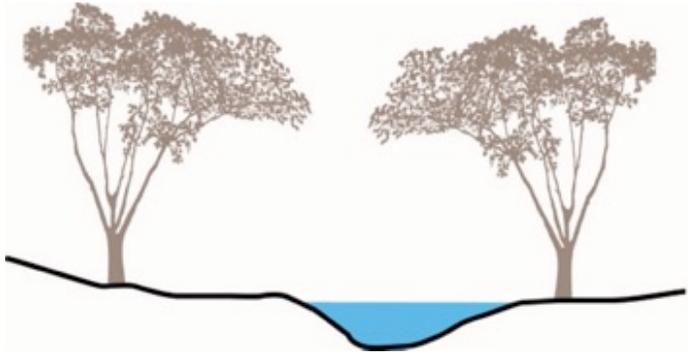
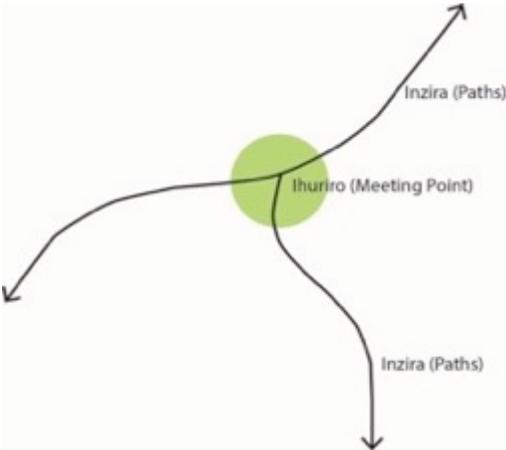
Source: Author, 2017 after (Kanimba & Van Pee, 2008)

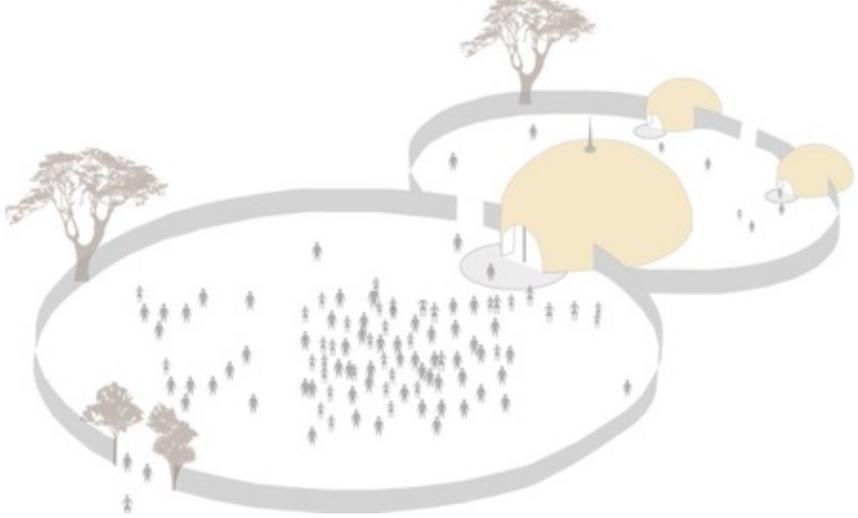
Table 4.21: Physical elements of Rwandan traditional public space and their meaning.

ELEMENT NAME - <i>Ikinyarwanda</i> - English	ILLUSTRATION/IMAGE	MEANING Element was seen as;
1) <i>Irembo</i> Entrance portal		<ul style="list-style-type: none"> ✓ -Entrance to home ✓ -Symbolic object in the society ✓ -Protection against ill health ✓ -Two trees as traditional medicine (umuko, umuvumu)
2) <i>Imbuga</i> Open space		<ul style="list-style-type: none"> ✓ -Public open spaces ✓ -Gathering of people ✓ -Celebration of different ceremonies

<p>3) <i>Umuriro</i> Fire</p>		<ul style="list-style-type: none"> ✓ -Fire was used for warming ✓ -Fire was also used for cooking ✓ It was symbolic for different things ✓ -Sport (Jumping over the fire in recent mark warrior race) ✓ Meeting ceremony ✓ -Used in judgment of different problems
<p>4) <i>Igikari</i> Back yard</p>		<ul style="list-style-type: none"> ✓ A backyard ✓ -Activities like cooking, laundry ✓ storage

<p>5) <i>igiti</i> Tree</p>		<ul style="list-style-type: none"> ✓ -Justice reconciliation ✓ -Source of food/medicine ✓ -Shade for sun ✓ -Symbolic (umunyinya)social aspect ✓ -Micro-climate(Environment) ✓ -Protection of wind, enemies ✓ -Create privacy
<p>6) <i>Igipangu</i> Fence</p> <p>Boundaries</p>		<ul style="list-style-type: none"> ✓ -Screen for their house ✓ -Visual permeability ✓ protection ✓ aesthetics ✓ Demarcation of land ✓ -Political /Visual

<p>7) <i>Iriba</i> Water well</p>		<ul style="list-style-type: none"> ✓ -Basic human needs/some or life ✓ -Cow watering ✓ -Used in agriculture for irrigation ✓ -used in construction ✓ -Micro-climate(environment)
<p>8) <i>Inzira</i> Circulation/ Walkways</p>		<ul style="list-style-type: none"> ✓ -Path ways ✓ -Interconnection of walk ways(meeting points)

<p>10) Vegetation related to land use</p>		<ul style="list-style-type: none"> ✓ -They used to plant bananas and sorghum ✓ Sometimes as fence to compound
<p>11) Structural types</p>		<ul style="list-style-type: none"> ✓ -King's hut/main house ✓ -Beer/milk house ✓ -Granaries

<p>12) Cluster arrangement</p>		<ul style="list-style-type: none"> ✓ Homestead arrangement ✓ Depends on if family is; <ul style="list-style-type: none"> ○ Rich or poor ○ Livestock farmers ○ Grain eaters ○ Plantain eaters ○ Topography
<p>14) Small scale element</p>		<ul style="list-style-type: none"> ✓ -Fence ✓ -Pots ✓ -Fire ✓ -Water ✓ Historical artifacts

Source: Author, 2016

4.5.2.2 An interpretation of the physical elements of traditional public space

Table 4.22: Interpreting physical elements of the Rwandan traditional POS.

Analysis of SPATIAL ORGANIZATION	Result
Elements in the buildings	Entrance, Corridor, Courtyard, rooms, fire, storage, roof
Spatial organization	Space arrangement, arrange around what, central courtyard, combinations of geometry, linear-radial, wind flow, sun movement, orientation,
Space sequence, choreography	Entrance, Open, closed, semi-open spaces, private vs. public space, interior and exterior,
Functional areas	Entrance, open spaces, buildings, services,
Circulation system	Connections between spaces, public for all and space for king/guests, central courtyard
Behavioral patterns	Living, eating, sleeping, Merry making and ceremonies, Receiving guests, Receiving sinners/ pardoning Milk stores, beer stores, Granaries or cattle kraal- type of farming
Analysis of PHYSICAL STRUCTURE	
Climatic features	Hot and dry vs. cold and wet seasons
Building Configurations	Round, square rectangle? Built and non-built areas, inside and outside spaces
Ventilation and lighting	Wind flow, facades, central courtyard, openings, natural cooling, natural ventilation, fireplace, screens,
Ornaments and decorations	Local art – <i>imigongo</i> ’, decorative prints, doors-wooden, entrance door decorations with meaning, shutters, mats
Proportions and scale	Height of houses, height of entrance door- humble oneself, central courtyard round or square, back courtyards smaller,
Materials, textures and colours	Local materials; wattle, daub, grass thatch Black or Brown mud, ... grass thatch,
Non-visual qualities	Rainwater harvesting, mobile toilets, etc.

Source: Author, 2016

4.5.3 The evolution of YCN

4.5.3.1 YCN, Biryogo.

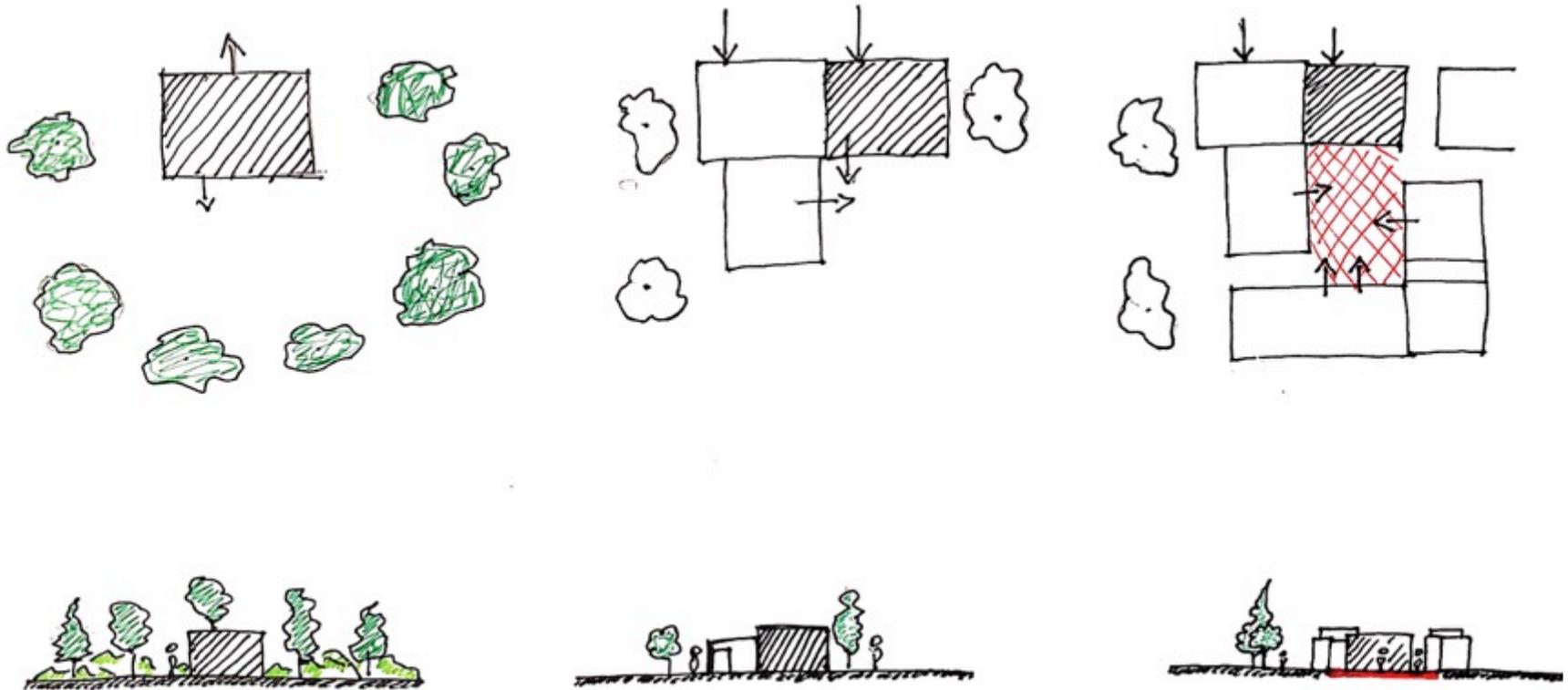


Figure 4.53 a, b and c: Evolution of Youssouf's courtyard; 1920's (a), 1940's (b) and 2007 (c).

Source: Author, 2017

4.5.3.2 *The evolution of YCN*

The evolution of the courtyard from 1920's from a domestic backyard, to a religious courtyard in 1940's, and later to the current urban courtyard is illustrated in Figure 4.54 **a, b and c**. Table 4.23 further illustrates the detailed transformative process considering both the physical and social dimensions.

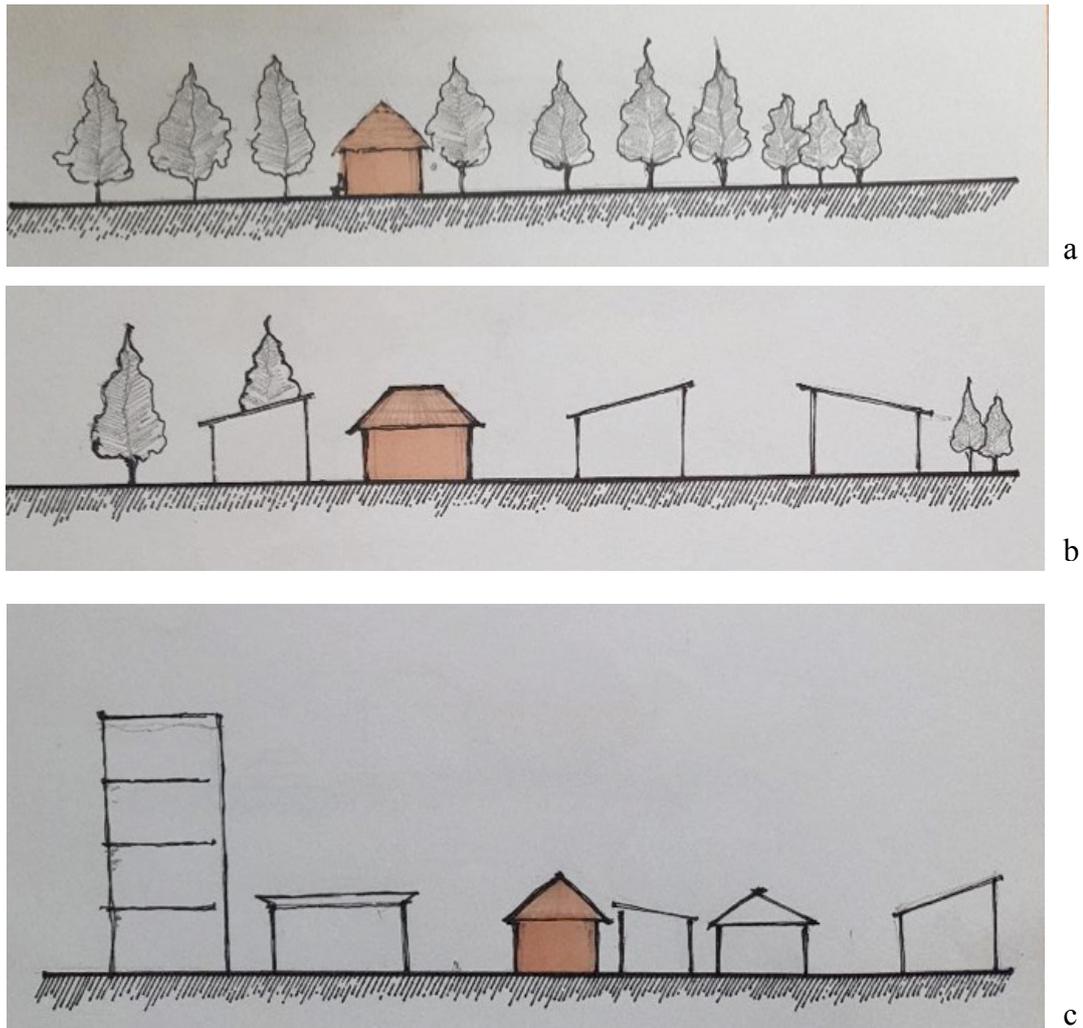
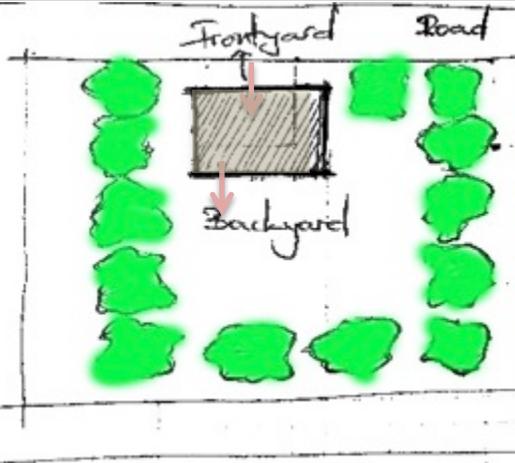
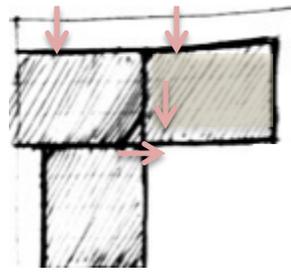
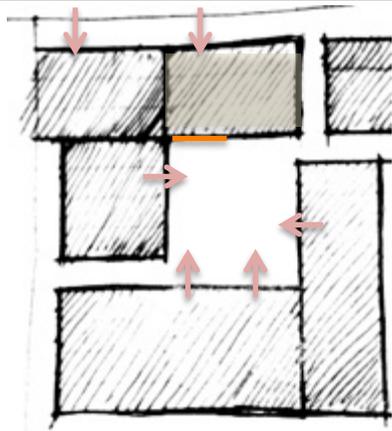
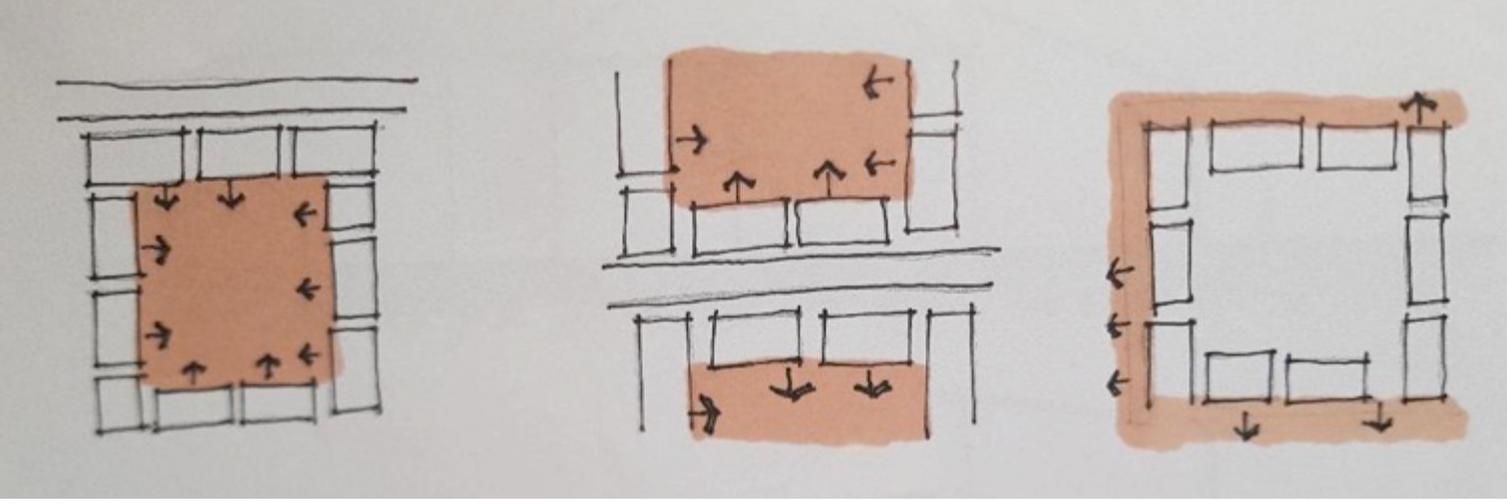


Figure 4.54 a, b and c: YCN Elevations in 1920's, 1940's and 2017.

Source: Author, 2017

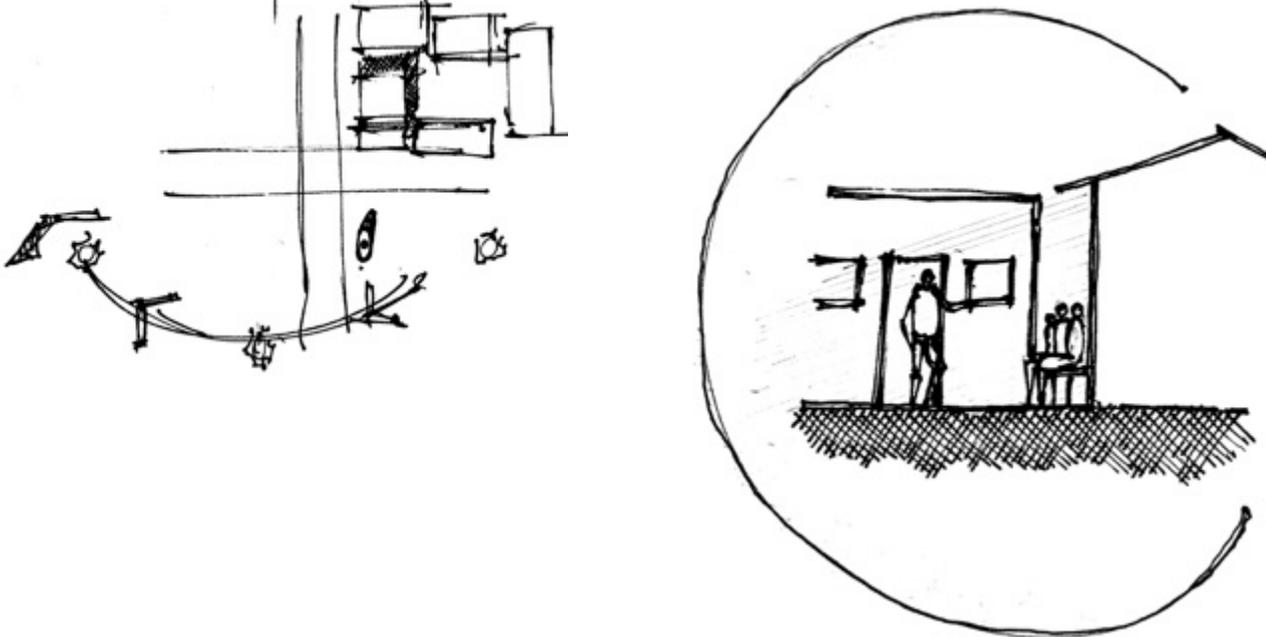
Table 4.23: Transformation of the YCN.

A critical review of transformative UPOS at YCN			
Parameter	What was?	What changed?	What is?
PHYSICAL DIMENSION			
Accessibility	 <p>1920's</p>	 <p>1960's</p>	 <p>2017</p>
	Discussion	<p>In the initial plan configuration, the front yard opened to the street hence public; while backyard was open at the rear providing private space for family activities. It was defined by edges of vegetation and trees growing around it. In the transformative phase, the backyard has been transformed into a semi-public courtyard and the addition of other buildings articulated its form even more clearly. The formerly main entrance to the backyard is no longer in use as the courtyard's configuration and use has transformed with time.</p>	

	<p>The quality of space at the node has been directly proportional to time and urban development around the area. Since the roads were tarmacked in November 2017, the overall spatial quality has improved tremendously to make it a good urban space. There is increasing presence of modern materials such as cement blocks, tiles, glass and decorations such as additional lighting and colorful painting that have been added to the facades. More design details such as paving/screeding the front-yards of the buildings or threshold spaces and connecting them better to the street, have really improved the spatial quality of the node.</p>
<p>Linkages</p>	
<p>Discussion</p>	<p>Initial planning, linkages were centralized; the central courtyard was the hotspot for all activities. With time, as the population increased and growth occurred, courtyards transformed to not only diverge inwards but also outwards. Some residential building in the layout began to transform and accommodate commercial activities, which targeted not only the families but the neighborhood and passersby. Today, except for Youssouf's courtyard and mirembe mix restaurant, the other courtyards around the node have their main activities as commercial and are arranged on the peripheries of the courtyard facing the streets. From a centrality to peripheral arrangement as a way of expanding typologies of urban public</p>

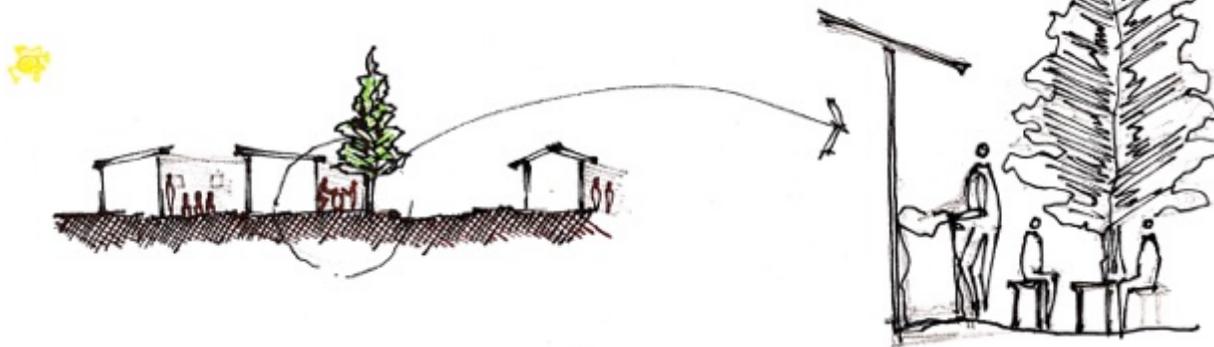
	open space.	
Image		 
Discussion	<p>The initial facades were made mud (torch) / wattle and daub for the walls and wood for windows and doors. With time, the façades and currently, most walls are made of stucco and plaster. Likewise, the materials of doors and windows have changed from wood to steel and glass. The façades have changed over time for ‘street beautification’ to align with the changing times as well as the need to attract more passersby to the commercial activities available in the neighborhood. Currently modifications are ongoing to decorate the façade with tiles and add lighting fixtures that make the space more attractive even during the night. The openings even to relatively smaller buildings facing the street are made of double doors typical to other commercial facilities in the city. In this sense, doors serve more as a label than their functionality.</p>	

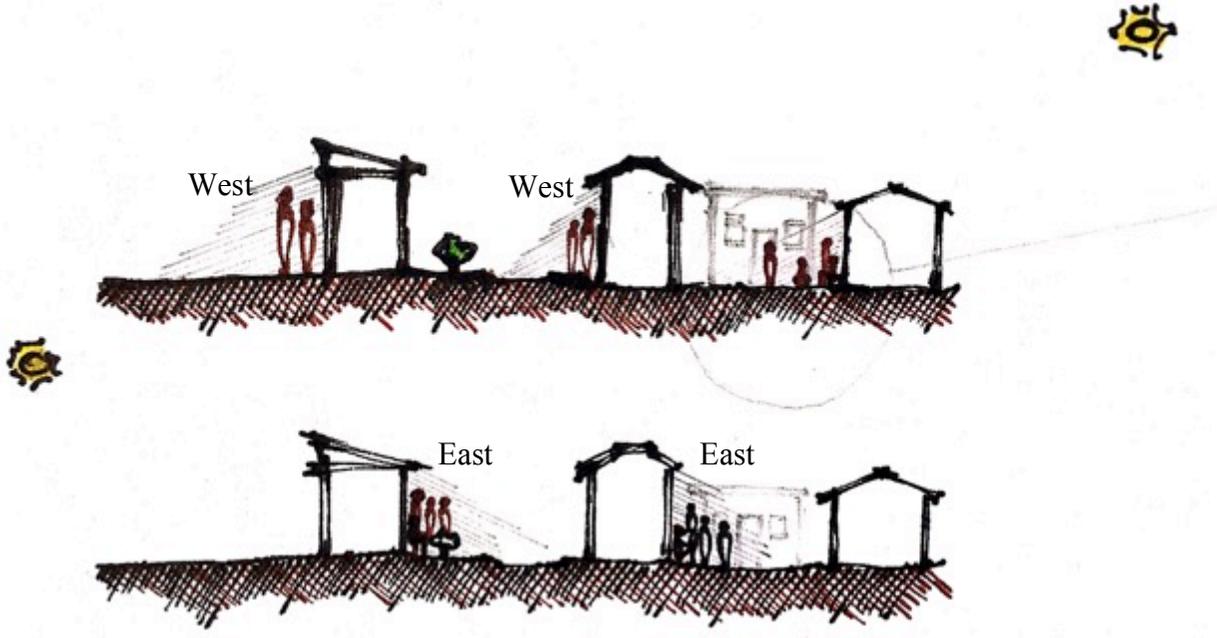
<p>Comfort</p>			
<p>Discussion</p>	<p>Even in traditional public space, paving of the entrance porch was important and significant. People do not like to step on muddy floors. In Rwanda, where there are rains almost throughout the year, a paved or cemented porch is attractive to the people as evident in the new 'kwa Issa' restaurant.</p>		

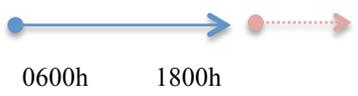
<p>Quality of Space</p>	
<p>Discussion</p>	<p>The quality of place in 1920's, when it was constructed was acceptable and 'modern' for that time, space and context. Youssouf's grandfather's house still stands as it was except for the roof that was changed to tin-sheet in 1940's. Physically, the quality of building materials of structures forming Youssouf's courtyard may be considered sub-standard compared to the materials used in current buildings such as cement blocks, bricks, steel, aluminum and glass. However, it is important to highlight that the adobe walls constructed in 1920's are still standing strong... which offers a good precedent to research on construction materials. There is no shelter above the courtyard, so rain and sun are not sheltered off. People sit according to the time of day to take advantage of shaded areas cast by the canopies of buildings around the courtyard. The open floor gets muddy after rainfall, but people still come, which suggests that the sense of place is still more powerful and consequently triumphs over the physical quality of the UPOS.</p>

Environment

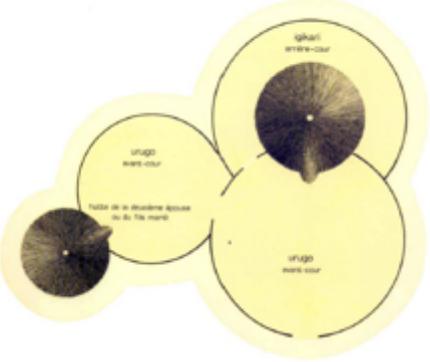
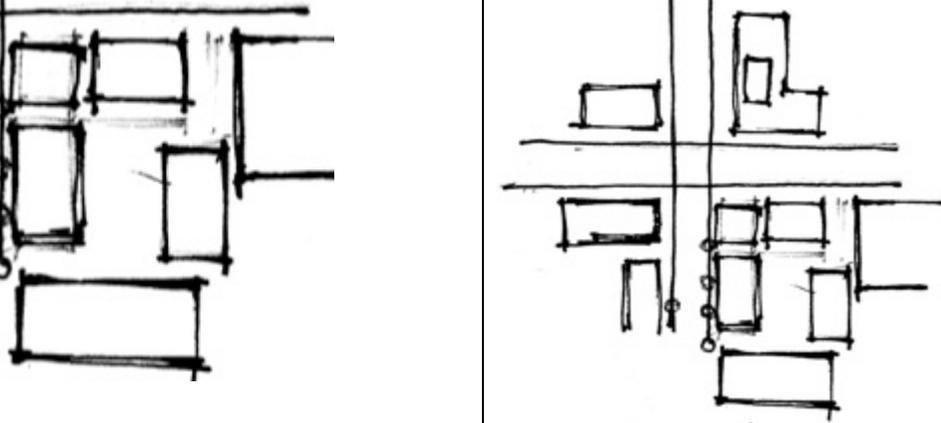
AM and PM



<p>Sun shading</p>	
<p>Discussion</p>	<p>OUTDOOR ACTIVITIES in relation to the environment. The study found out that people prefer to seat on the shaded part of the courtyard or node between 1000h-1700h. In the mid-morning, people sit in all parts of the courtyard as the sun is not too harsh. At around 1000h, people shift their chairs and tables to western facades shaded, and around 1500h they shift to the eastern facades that are shaded by the western sun. Therefore comfort of the outdoor spaces has a big influence on the nature and patterns on social activities.</p>
<p>SOCIAL DIMENSIONS</p>	

<p>Use</p>	 <p>0600h 1800h</p>	 <p>0400h -0600h -1800h -2200h</p>	
<p>Discussion</p>	<p>Initially, people would use the natural/biological clock and organise their activities around day-night timeframes accordingly. Sunlight and fire were the main sources of light and energy. With time, technology and other lighting alternatives have changed how people organise activities. Today, vibrant night life is one of the peculiar characteristics of Biryogo where most businesses operate till late night.</p>		
<p>Users</p>			
<p>Discussion</p>	<p>The Youssouf courtyard began as a domestic backyard for Youssouf's family. It was a bonding place for the family but not for the community. It later transformed into a religious courtyard where Islamic ceremonies would be held. With time, it has become universal and all members of the community and public feel welcome to the place for mainly drinking coffee and green tea. It is currently a social space for bonding of many diverse groups of people. Some people have developed an attachment to the place and come there daily e.g. 102 year-old Mzee Madjutu comes there each day at around 0800h. He enjoys meeting new people. Youth are very frequent in the courtyard as they also meet new people there. The place may not be aesthetically pleasant or catching to the physical eye, but people are still attracted to it through place attachment process that gets</p>		

	stronger with time and makes people feel like they belong there and want to return as frequently as they can and stay as long as they can.		
Activities			
Discussion	<p>The node was formed later in 1960's as a result of urban development where two roads intersect to form the junction. With time, the street has kept changing and newer commercial activities introduced to the area. The population density is also increasing and restaurants have been opened in the area. The two roads were tarmacked in November 2017, and the newest restaurant in the area 'kwa issa' is currently booming with business; they sell coffee, tea, fruit salad and bits such as peanuts. The node presents a peculiar sense of place in respect to urban development; newer social interaction spaces have emerged and competition among them has also caused more rehabilitations. <i>Kwa issa</i> restaurant has paved their outdoor sitting area and cleared the vegetation screen existing before to have no barriers and ensure both visual and physical permeability to the street. Pavement is highly valued in Rwanda even in the traditional setting. Owners of other commercial facilities on the same street have tried various modification strategies such as plastering, painting or tiling in order to improve their spatial quality to meet the 'modern' standards. The façade of youssouf's compound facing street to the south, has been painted with a socially thematic mural. This effect coupled with trees that also shade the space attracts a lot of people to play traditional games, others watch the play, others chat and others just sit to watch street life unveil.</p>		
Discussion	<p>The spatial layout of the indigenous Youssouf's family home in 1990's was indeed a reflection of the Rwandan traditional dwelling. Along with its construction materials; grass thatch roof and mud/ wattle and daub (<i>torchis</i>) walls and mud/earth floor. With time, there was both religious and</p>		

	<p>commercial influence on the spatial layout originally influenced by Rwandan traditional culture. Introduction of the semi-public courtyard where there was the family backyard opened up the space to the neighbourhood and public. The spatial- courtyards were also typical in Islamic culture as well as the social- drinking green tea and coffee. The cultural practices become good business ideas and currently tea and coffee is not only a catalyst of social interaction but also a source of income for several families and business people who do not necessarily live in Biryogo. Typical to Islamic culture, the predominance of men to women is still visible in Biryogo. E.g. when female visitors come to youssouf’s courtyard, they have to sit indoors inside youssouf’s sister’s house ‘<i>mama Mwajuma</i>’.</p>	
<p>Sociability</p>		
<p>Discussion</p>	<p>The predominant cultural element visible in the spatial arrangement of the POS makes it more sociable. The buildings were arranged according to a typical Rwandan traditional dwelling and later the introduction of the Islamic culture complemented it as it also prescribed to the concept of social life within courtyards. The spatial arrangement of the node therefore confirms that urban open space is an integral part of the urban tissue.</p>	

Author, 2017

4.5.4 Analysis of YCN

YCN is a vibrant node and most of its activities flow into the streets, which become an attraction to people to further support life in the UPOS. As illustrated in Figure 4.55, all building entrances become important elements in catalysing the liveability of the UPOS.

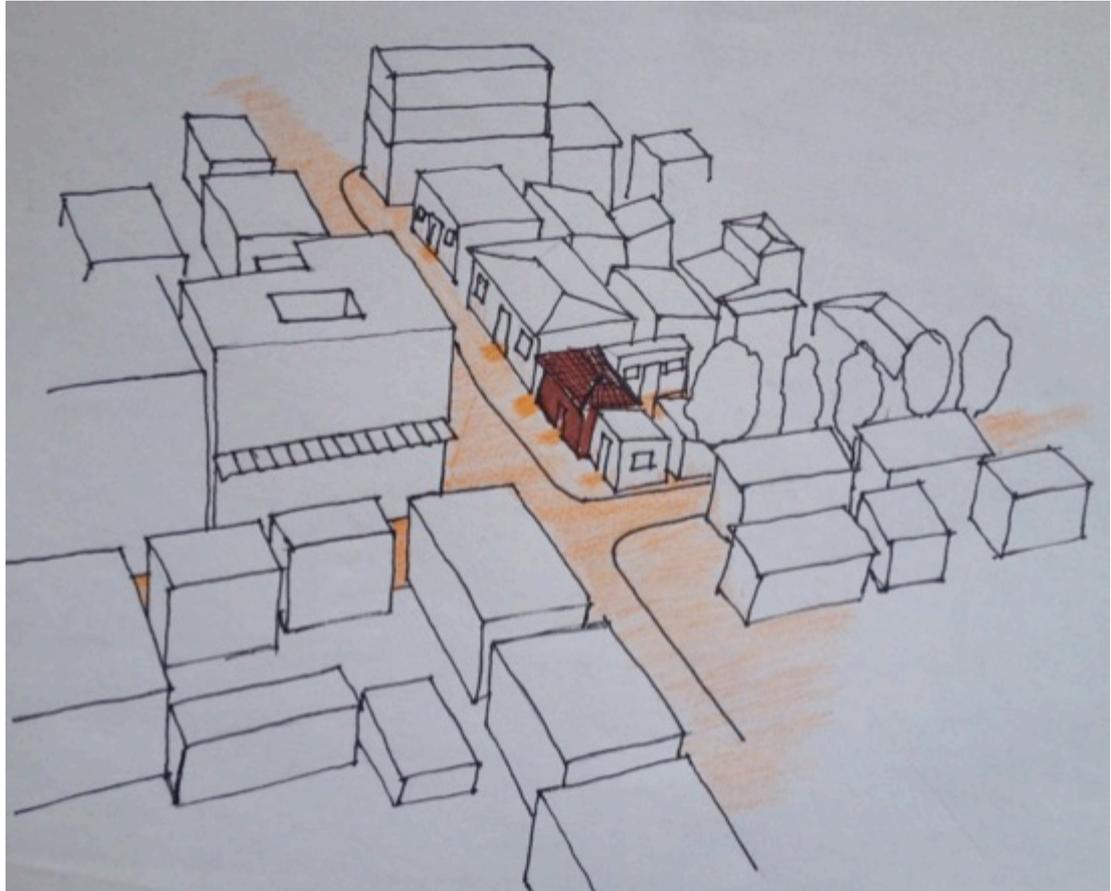


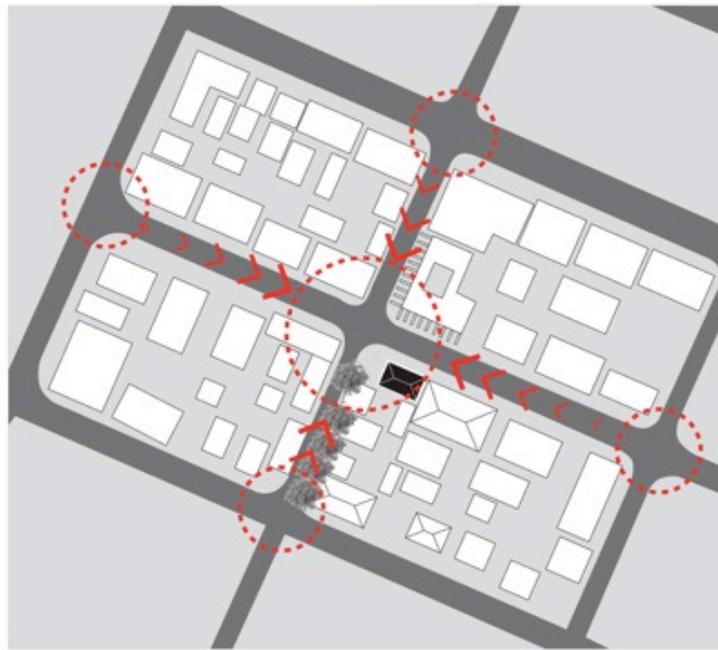
Figure 4.55: YCN UPOS

Source: Author, 2017

4.5.4.1 Connectivity, accessibility and activities at YCN

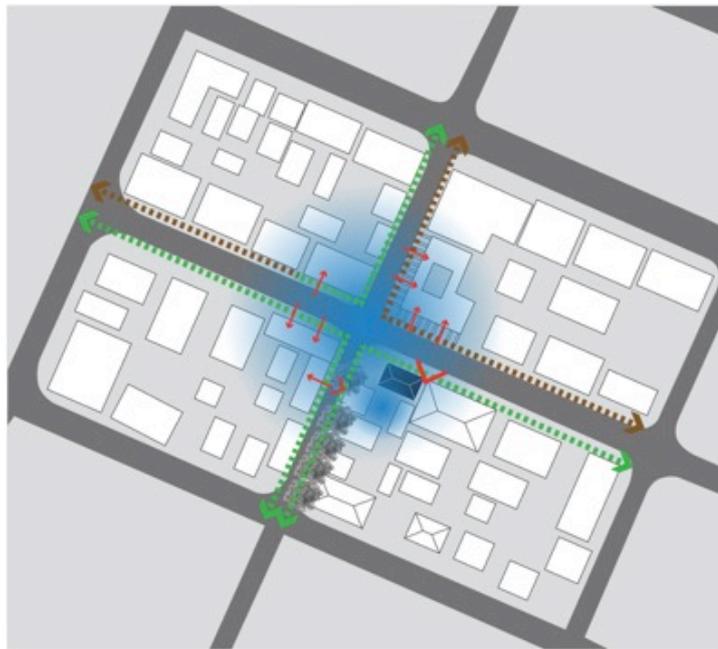
Figure 4.56 illustrates the connectivity and accessibility of the case study UPOS.

Figure 4.57 illustrates the main activities taking place in the UPOS and its adjacent areas such as restaurants, hawking and food vendors, car and motorbike parking, salons and betting shops



- KEY**
-  Nodes
 -  Attraction

NODES CONECTION

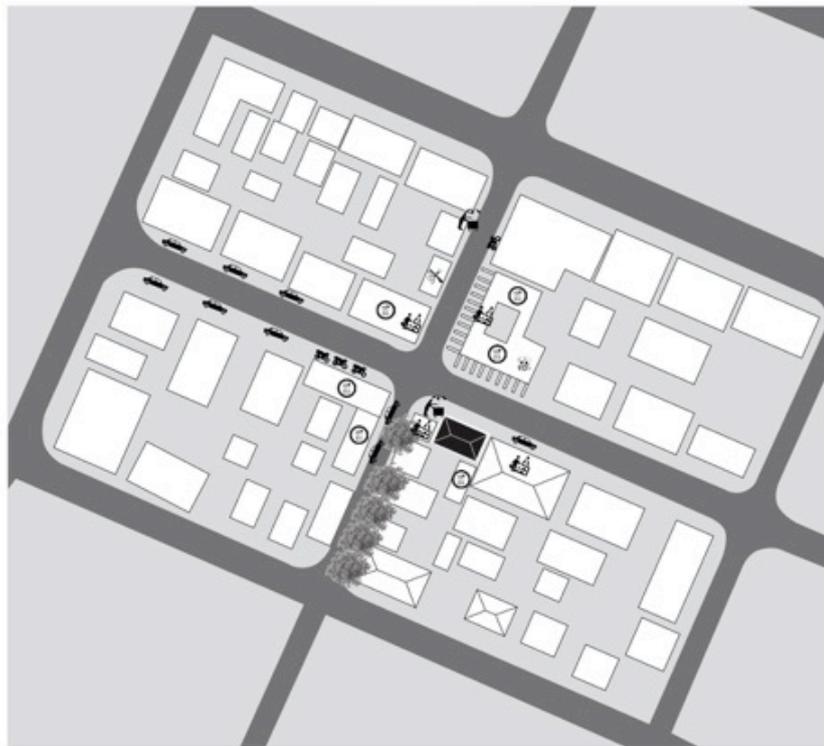


- KEY**
-  Node
 -  Main Entrance
 -  Building Entrance
 -  Area with Blocked Sidewalk
 -  Area with Accessible Sidewalk

ACCESSIBILITY

Figure 4.56: YCN’s Connectivity and Accessibility.

Source: Author, 2017



- KEY**
-  Restaurant
 -  Betting Shop
 -  Moto Parking
 -  Car Parking
 -  Saloon
 -  Hawkers
 -  Food Selling

ACTIVITIES

Figure 4.57: YCN’s Activities.

Source: Author, 2017

4.5.4.2 Views and urban composition of YCN

Figure 4.58 is a key map of RC showing the labelling of views 01, 02 and 03. View 01 is illustrated in **Figure 4.59**, view 02 in **Figure 4.60** and view 03 in **Figure 4.61**.



Figure 4.58: YCN’s Views key map.

Source: Author, 2017



Figure 4.59: YCN's View 01.

Source: Author, 2018

The views illustrated that Biryogo is still characterised by informality with compact neighbourhoods. The grid layout established in the colonial era is still visible and newer development are aspiring vertical growth with the most recent development near the YCN being a four storey commercial building.



Figure 4.60: YCN's View 02.

Source: Author, 2018



Figure 4.61: YCN's View 03.

Source: Author, 2018

4.5.5 Analysis of RC

RC is located in a residential neighbourhood

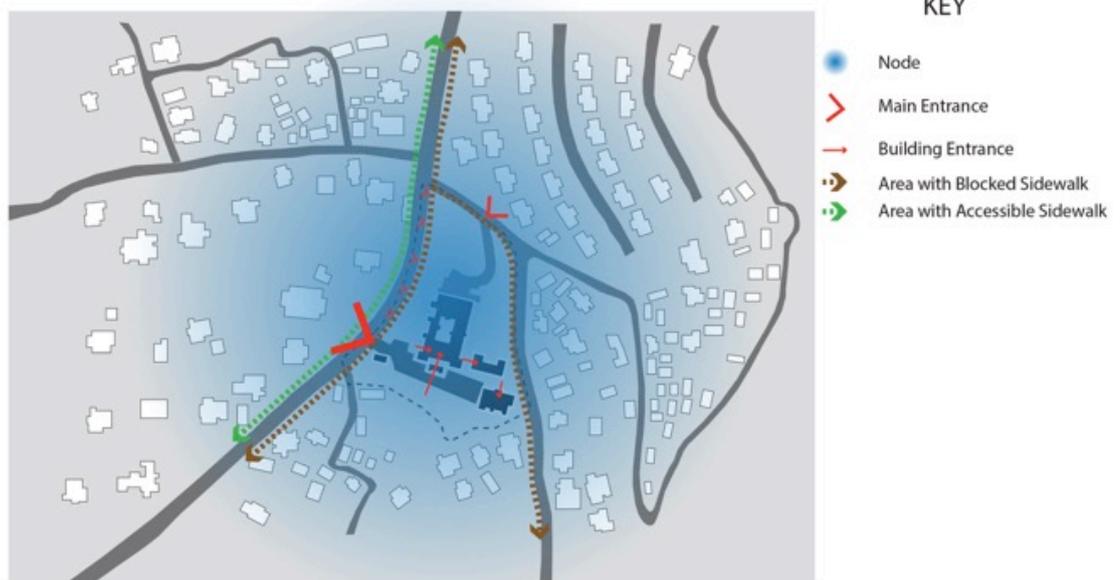
4.5.5.1 Connectivity, accessibility and activities at RC

Figure 4.62 illustrates the connectivity and accessibility of the case study POS.

Figure 4.63 illustrates the main activities taking place in the place and its adjacent areas such as restaurants, car and motorbike parking, hawking and food vendors.



NODES CONECTION



ACCESSIBILITY

Figure 4.62: RC's Connectivity and Accessibility.

Source: Author, 2018

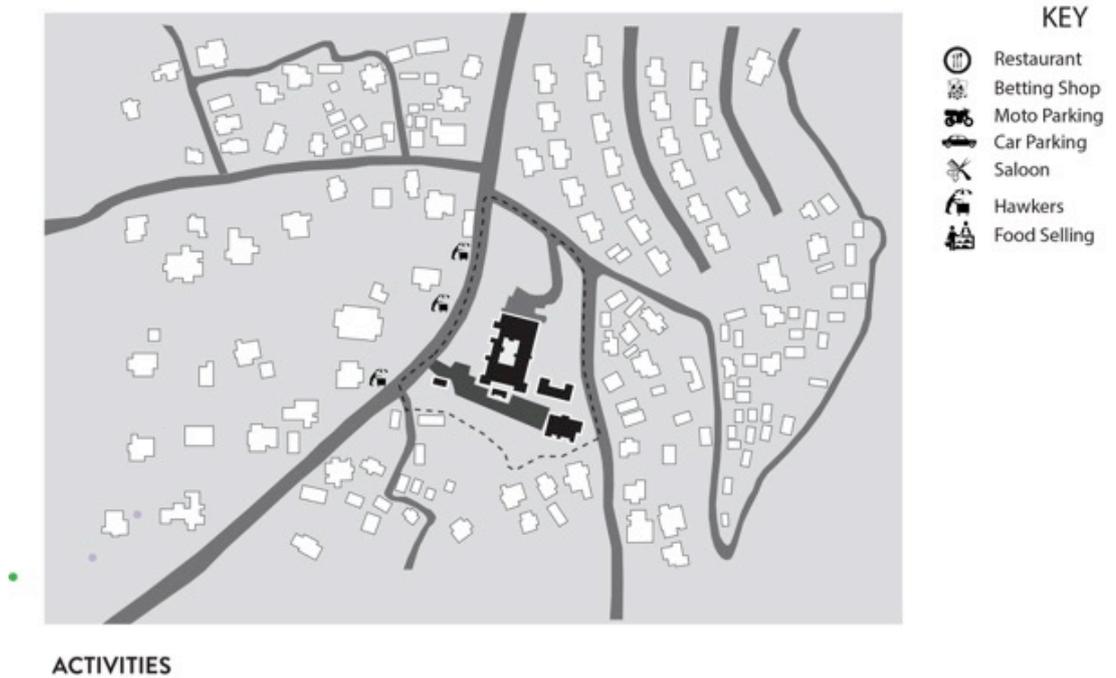


Figure 4.63: RC's Activities.

Source: Author, 2018

4.5.5.2 Views and urban composition of RC

Figure 4.64 is a key map of RC showing the location of labelled views 01 in **Figure 4.65**, view 02 in **Figure 4.60** and view 03 in **Figure 4.61**.

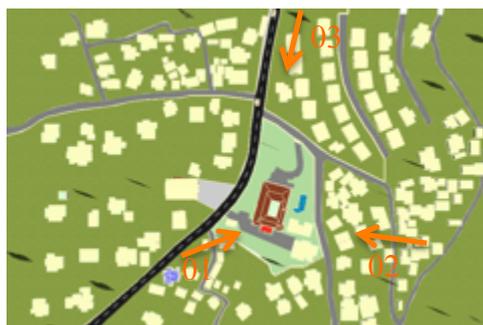


Figure 4.64: RC's Views key map.

Source: Author, 2018

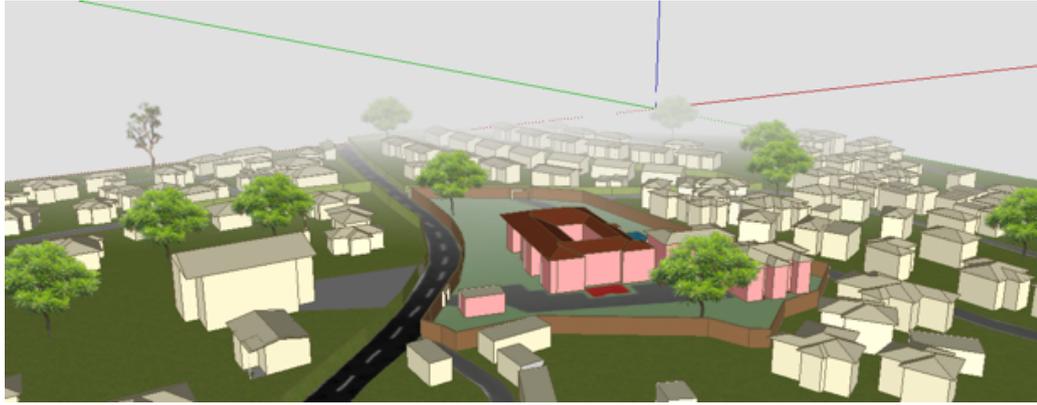


Figure 4.65: RC's View 01.

Source: Author, 2018



Figure 4.66: RC's View 02.

Source: Author, 2018



Figure 4.67: RC's View 03.

Source: Author, 2018

4.5.6 *Environmental factors*

The urban design audit is known as the Measurement Instrument for Urban Design Qualities Related to Walkability and was used in this study as a tool for analysing environmental factors. Since the measure of environmental factors was based on the observer's opinion of the built environment, it became important to validate the application of the methods by working closely with a team of experts from the City of Kigali and final year students at The University of Rwanda, who have experience in working on urban-based modules. In order to capture an accurate assessment of the appearance of urban design and landscape qualities from a pedestrian point of view, the concepts of image ability, enclosure, human scale, transparency and complexity were used. The measurement was rated using a Likert scale of 1 to 5, with 1 being minimum and 5 maximum.

- I. **Imageability:** In *ikinyarwanda* '*urwibutso*' The 'memorableness' of the space's spatial environment was assessed by evaluating the built environment and users' interaction with the space.
- II. **Enclosure:** In *ikinyarwanda* '*mu rugero*' Enclosure is a measure of the physical definition of a space.
- III. **Human scale:** In *ikinyarwanda* '*haringaniye*' Respecting the human dimension in conditions for walking, cycling and using outdoor spaces is essential for making city life viable (Gehl, 2010). Human scale in the case study spaces was evaluated by assessing the POS's dimensions, walkways, soft landscape elements and building heights.
- IV. **Transparency:** In *ikinyarwanda* '*hagaragara*' Liveable spaces are usually characterised by high transparency or soft edges Gehl (2010). This was measured by evaluating the degree of visual contact between the space and its surrounding edge.
- V. **Complexity:** In *ikinyarwanda* '*heza afite byose*' Complexity is the richness of the built environment and activities.

The results from the urban design audit of the three case studies has been presented in **Figure 4.68**

Table 4.4.24: Urban design audit of KPM, YCN and RC.

SPACE	CRITERIA	MEASURE	
		Min	Max
King's palace Museum (KPM)	Imageability: ' <i>urwibutso</i> '	4	5
	<i>Enclosure: 'mu rugero'</i>	4	5
	Human scale: ' <i>haringaniye</i> '	5	5
	Transparency: ' <i>hagaragara</i> '	4	5
	<i>Complexity: 'heza afite byose'</i>	5	5
Youssof's courtyard and node (YCN)	Imageability: ' <i>urwibutso</i> '	2	4
	<i>Enclosure: 'mu rugero'</i>	3	5
	Human scale: ' <i>haringaniye</i> '	3	5
	Transparency: ' <i>hagaragara</i> '	3	5
	<i>Complexity: 'heza afite byose'</i>	3	5
Rujugiro's compound (RC)	Imageability: ' <i>urwibutso</i> '	3	4
	<i>Enclosure: 'mu rugero'</i>	3	5
	Human scale: ' <i>haringaniye</i> '	1	3
	Transparency: ' <i>hagaragara</i> '	1	3
	<i>Complexity: 'heza afite byose'</i>	3	5

Source: Author, 2018

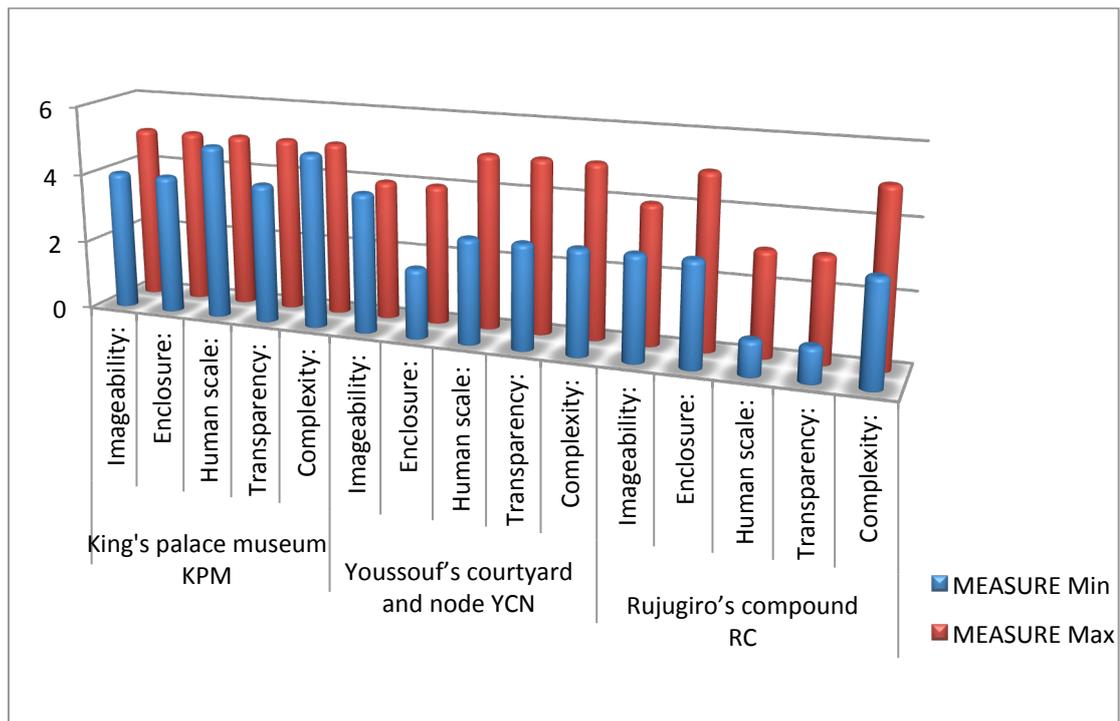


Figure 4.68: Urban design audit results for KPM, YCN and RC.

Source: Author, 2018

4.5.7 Social and Economic factors

The traditional public space, *akarubanda* illustrated in Figure 4.69 is therefore seen as a physical, social-cultural and educational asset. The socio-cultural attributes of the Rwanda traditional culture are further illustrated in Figure 4.70.



Figure 4.69: Rwandan traditional royal compound. Activities.

Source: Author, 2018

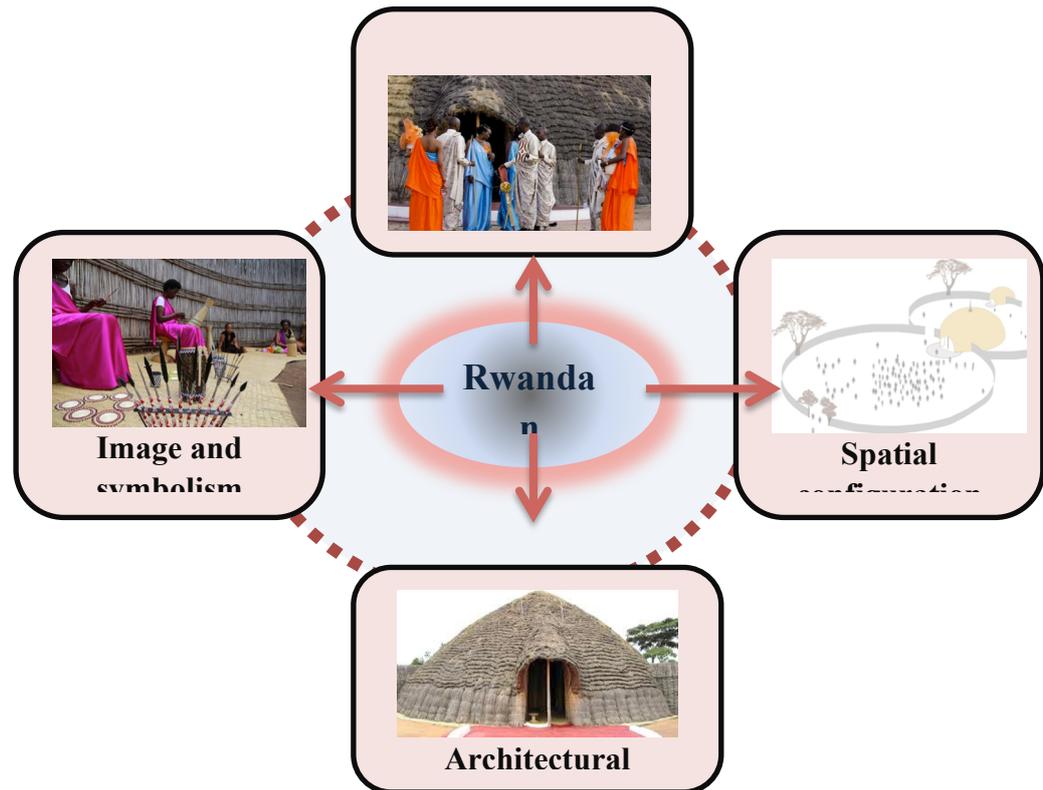


Figure 4.70: Socio-cultural attributes of *akarubanda*.

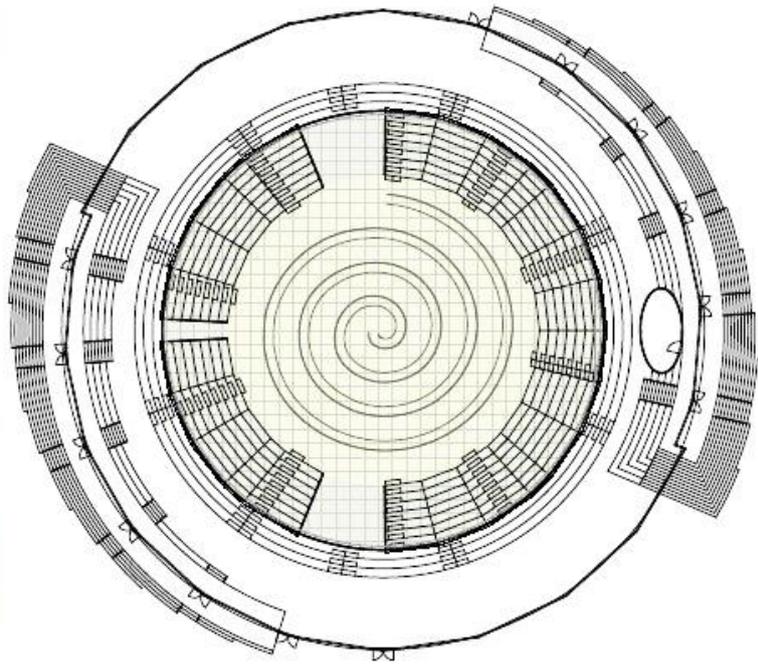
Source: Author, 2018

The researcher found out that some elements of Rwandan traditional culture have continued to make appearance in the contemporary built environment. This however is mainly visible in the architectural scale. For example, as illustrated **Figure 4.71**, traditional art patterns have evolved in the architectural plan of Kigali’s convention centre, a huge multipurpose hall completed in 2016.

The dome-shaped hall is viewed as a the new landmark for Kigali city and hence reinforced with a complex lighting system with the dome changing colours at night as illustrated in **Figure 4.72**, to mainly depict the national colours or those of countries of any senior global visitors to Kigali.



Nyanza King's palace, interior



Kigali Convention Dome, Floor plan Arena

Figure 4.71: Rwandan traditional art visible in 2006 architecture of the Kigali convention hall.

Source: Field survey, 2017



Figure 4.72: The Kigali convention centre at night.

Source: Trip Advisor, accessed 02.05.2017

4.5.8 Status of contemporary UPOS in Kigali

Behavioural mapping was conducted in the two case studies; YCN and RC between September 2017 and February 2018 in order to determine the Social and economic actors of the selected UPOS through users' satisfaction and aspirations. The observation involved spending an hour, periodically, at the two selected case studies.

As illustrated in Table 4.25, for case one, the mapping was done at four different times of the day (morning, noon, late afternoon and evening/night) twice each on a Tuesday (typical weekday), Friday (weekday and Islamic prayer day) and Sunday (typical weekend day/ majority Christian worship day). For case two, the mapping was done on selected Saturdays when the site hosted wedding ceremonies. An impromptu visit was made to the site in December 2017, by the researcher accompanied by the study supervisors, who bore witness of preparations underway for a wedding ceremony planned for the following day.

For case one, researcher, mapped the sitting, standing or walking areas, as well as examined what users were doing; such as eating and drinking, playing games, vending or hawking, or ceremony, etc. The time slot for observation, on average was one hour.

For case two, the researcher, mapped the sitting, standing or walking areas, as well as examined what users were doing; such as photography, chatting, performances, meeting etc. The time slot for observation on average was three hours.

At Youssouf's courtyard, observations were conducted from different points of courtyard and the node and the observation points were selected strategically to realise as much visual coverage as possible; standing at the centre of the node, facing towards each of the four streets forming the node and taking a photograph from the entrance and another from the mid-left. This is because users preferred to sit on the western side of the courtyard basking in the morning sun and then using the old

building to shield them from the afternoon sun. The study observed that benches and hence the users were found mainly on the West side of the courtyard.

Using cafes and restaurants was the main activity spotted, and both youth and elderly were observed enjoying the traditional game of *igisoro*, or often times, modern games such as poker/cards. The weather was sunny most of the days, and even the cloudy days were very bright. The nights were not well lit for good photography. As illustrated in **Figure 4.73**, users of the node preferred to seat in the shaded areas.

Over lunch hour, there were many cars on the streets with people entering the restaurants for duration of 45-75 minutes. On average, most people ate their meal in half an hour, then took a soft drink or tea while chatting, for another half hour. Some customers had their cars or motorbikes cleaned/dusted or minor repairs/maintenance/accessories carried out, while they were eating their lunch.

There was no significant difference in the use of the node during the week, except on Friday, which is the Muslim prayer day as well as an afternoon off duty, set aside for sports for government workers. The study found that the numbers largely remained similar to other days because as the Muslim users went to mosque, new users would come into the neighbourhood for recreation. There were many religious dressed “*Thwau*” around the neighbourhood over lunch hour as the Muslims gathered at the mosque for prayers. However, there would be others, mainly youth, wearing the religious dress but staying within the neighbourhood.

The courtyard is not shaded, so around noon, the sun was too hot. Users moved the mobile benches to spaces under the eaves of the roofs in search of shade.

Five cypress trees in YCN provided shade to the street for the better part of the morning and noon. However, in the afternoon the shade was cast on the walls of the Youssouf’s family houses and therefore could not be of use to the people on the street. The node is livelier during the lunch hours rather than in the morning and

evenings. Its close proximity to the city of Kigali, allows some office workers to take lunch there.

There were still more men than women throughout the study timescale. During weekdays, Youssouf's sister was the only woman always present in Youssouf's courtyard and a few female visitors were spotted at the node towards the market as indicated in **Figure 4.74**.

More women were visible during the weekends whereas children were mainly observed towards the market and a few inside Youssouf's courtyard. There were extremely few women and children in the cafeterias.

Table 4.25: Visiting times for observation.

CASE STUDY	Youssouf's courtyard and node				Rujugiro's compound			
	TIME SLOT FOR OBSERVATION INTERVAL	Morning 0700-0800h	Noon 1200-1300h	Afternoon 1600-1700h	Evening 1800-1900h	1 Saturday 21.10.2017	2 Saturday 02.12.2017	3 Saturday 24.02.2018
Day 1	✓	✓	✓					
Day 2	✓	✓	✓	✓				
Day 3		✓	✓					
Sat 1					✓			
Sat 2						✓		
Sat 3							✓	
Day x								✓

Source: Author, 2017



Figure 4.73: Environmental factors in YCN.

Source: Author, 2017



Figure 4.74: Social factors in YCN.

Source: Author, 2018

4.5.8.1 User activities in YCN

Results of users activities in YCN on day 1 are illustrated in **Figure 4.75**.



Figure 4.75: Activity map of YCN on day 1.

Source: Author, 2018

The results indicate a preference of the restaurants over other spaces in YCN. People get the opportunity to interact as they eat and drink, this further gives them an opportunity to enjoy watching life on the street, as majority of the restaurants open to the street.

There are many people walking on the streets as they approach commercial activities located linearly along the streets. Other users were observed walking through the node to seek services from adjacent areas.

There were several spots for traditional games, which attracted people to participate as well as to watch.

Results of users' activities in YCN on day 2 are shown in **Figure 4.76**.



Figure 4.76: Activity map of YCN on day 2.

Source: Author, 2018

Results of users' activities in YCN on day 3 are shown in **Figure 4.77**.



Figure 4.77: Activity map of YCN on day 3.

Source: Author, 2018

The research recorded the number of each activity in the selected observation intervals at YCN as shown in **Table 4.4.26**.

Table 4.4.26: Activities at YCN.

DAY	ACTIVITIES	Eating and Drinking *	Approaching/walking	Garage/parking	Sitting/ Watching	Standing/Chatting	Hawking and vending	Playing games
	Symbol							
Day 1	Morning 0700-0800h	46	78	15	12	8	5	4
	Noon 1200-1300h	30	40	10	26	11	16	14
	Afternoon 1600-1700h	22	16	4	32	6	14	18
	Evening 1800-1900h	35	20	2	28	14	26	22
Day 2	Morning 0700-0800h	18	39	2	10	2	6	4
	Noon 1200-1300h	30	45	-	20	-	2	10
	Afternoon 1600-1700h	22	28	-	4	-	-	7
	Evening 1800-1900h	16	20	2	10	3	21	12
Day 3	Morning 0700-0800h	26	105	10	16	12	23	14
	Noon 1200-1300h	40	76	18	30	6	18	22
	Afternoon 1600-1700h	36	51	12	22	4	14	18
	Evening 1800-1900h	32	40	4	20	14	20	30

Source: Author, 2017

4.5.8.2 User activities in RC

The results of users activities in RC on Saturday 1 being 21.10.2017 are illustrated in **Figure 4.78**.



Figure 4.78: Activity map of RC on day 1.

Source: Author, 2018

The results of users activities in RC on Saturday 2, being 02.12.2017 is illustrated in **Figure 4.79.**



Figure 4.79: Activity map of RC on day 2.

Source: Author, 2018

Lastly, the results of users activities in RC on Saturday 3, being 24.02.2018 is illustrated in **Figure 4.80**.



Figure 4.80: Activity map of RC on day 3.

Source: Author, 2018

The research recorded number of each activity in the selected observation intervals at RC as shown in **Table 4.27**.

Table 4.27: Activities in RC.

DAY	ACTIVITIES	Taking photos *	Approaching the POS/invited	Approaching the POS/uninvited	Sitting/ Watching	Standing/Chatting	Walking (inside venue)	Food and drink
	Symbol							
Saturday 21.10.2017	1500-1800h	12	45	12	85	25	30	115
Saturday 02.12.2017	1600-1900h	35	90	38	105	50	42	205
Saturday 24.02.2018	1500-1800h	19	40	15	20	60	35	30
Friday 08.12.2017 (with supervisors)	1800-1900h	0	18	4	0	13	12	9

Source: Author, 2017

4.5.9 Physical and social structure of UPOS

In order to enhance the results from observation, the research followed criteria shown in **Table 4.4.28** in relation to the various qualities and dimensions of the phenomenon being observed in UPOS.

Table 4.4.28: Criteria for participatory Observation.

	CRITERIA	QUALITY	DIMENSIONS IN UPOS
PHYSICAL STRUCTURE (UPOS)	Relationship between activities	Effect on other activities	Conversation and interaction space, collective activities, space activation in different hours
	Environmental function	Accessibility, mixed use	Physical and visual accessibility
	Environmental meaning	Mystery, complexity	Diversity, suitable movement rhythm
	Environmental factors	Climatic comfort	Comfort, shadows and shading, aesthetics, acoustics, sense of

			place
SOCIAL STRUCTURE (Urban life)	Scale of movement	Pedestrian movement	Serial vision in pedestrian view
	Presence of people	Children, youth, adults, elderly	People presence in different ages and activities
	Kind of behaviour	Personal, collective	Space for play, recreation and cultural relations
	Social values	Ceremonies, rites, rituals	Possibility and continuation of pedestrian movement, sitting,

Source: Author, 2017

The criteria for the physical structure of the UPOS as well as the social structure, being the presence of urban life, is as illustrated in Figure 4.81.

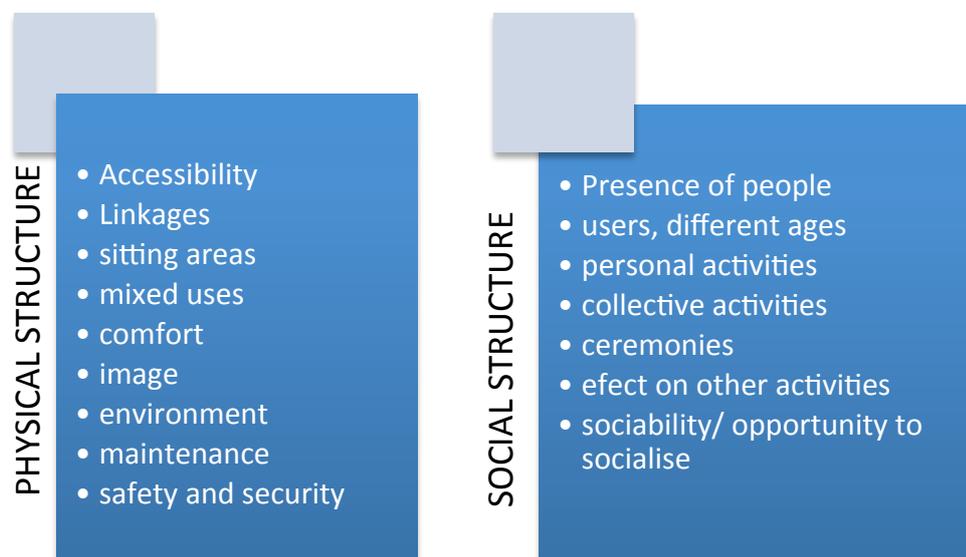


Figure 4.81: Physical and Social structure of UPOS

Source: Author, 2018

4.6 Extend of application of Rwandese *akarubanda* concept in UPOS

This section explores the application of the *akarubanda* concept extracting the physical and environmental dimensions as well as the social and economic dimensions.

4.6.1 The concept of Traditional public space

For many decades, *akarubanda* has served Rwandans as a place for peoples' pleasure; drawing huge crowds of old and young men and women to socialise. The open space was more valuable than the huts, which were made of grass. *Source: interviews with Mzee. Youssouf Kanubi-76 and Mzee. Ausi Majuto-102.*

Traditionally, Rwandans have developed and enjoyed their outdoor life for a long time, even with temporary settings in public space. The unfortunate advent of colonialism interrupted this trend, while the social divisions of Rwandans contributed largely to minimising or eliminating people's lives from public open spaces. The growing rapid urbanisation, active construction industry, and increased motorisation experienced in the 20th century and consequent planning are aiding or accelerating this trend. The result is a series of lifeless open spaces that act as separators of the social fabric, unlike traditionally where every open space would be a stage for socialising and connecting public life.

This study was an exploratory effort on how to bring back life to public open spaces especially in Kigali city; a model that secondary cities and even rural areas can also benefit from. It was expected that when public open spaces are full of life again, the city would regain potential of being a vibrant place for people.

Although the traditional concepts of *akarubanda* are associated with the Rwandan context of a specific era, they are to some extent similar to the contemporary concepts of liveable public open spaces in the Western literature. It is globally agreeable that traditional concepts, world over, were developed in response to the social, economic and environmental issues; therefore this study strongly believes that traditional concepts provide a framework with an extensive scope for learning about contemporary public open space.

In order to determine the extent to which the Rwandese akarubanda concept has been applied in selected UPOS, the study reviewed various resources on Rwandan traditional culture to delineate a list of important spatial elements and social activities visible in the traditional akarubanda and experienced in contemporary UPOS in Rwanda.

The researcher recorded the following activities;

- i. Cultural performance
- ii. Music and dance
- iii. Social gathering
- iv. Games and fun e.g *igisoro*
- v. Food and drink
- vi. Educational meetings
- vii. Jurisdiction e.g. *gacaca*, *abunzi*

The study found that the spatial qualities of akarubanda could be configured purposefully to enhance the experience of the space. Although the Rwandan traditional character may be evolving, symbolism was still applicable to reflect the local traditions. This was derived from traditional artefacts (texture, patterns, and proportions), construction style, or other cultural elements and symbols, the use of local techniques, materials and local labour, etc.



Figure 4.82: Aspects of Rwandan traditional culture.

Source: Field survey, 2017

These elements and aspects have been conceptualised in a series of iterations to produce symbolic icons, representing the culture of Rwanda. Further, these symbols

are composed to create logos for use in official government documents. **Figure 4.83** is an example of the logo of Kicukiro, one of three districts of Kigali city.

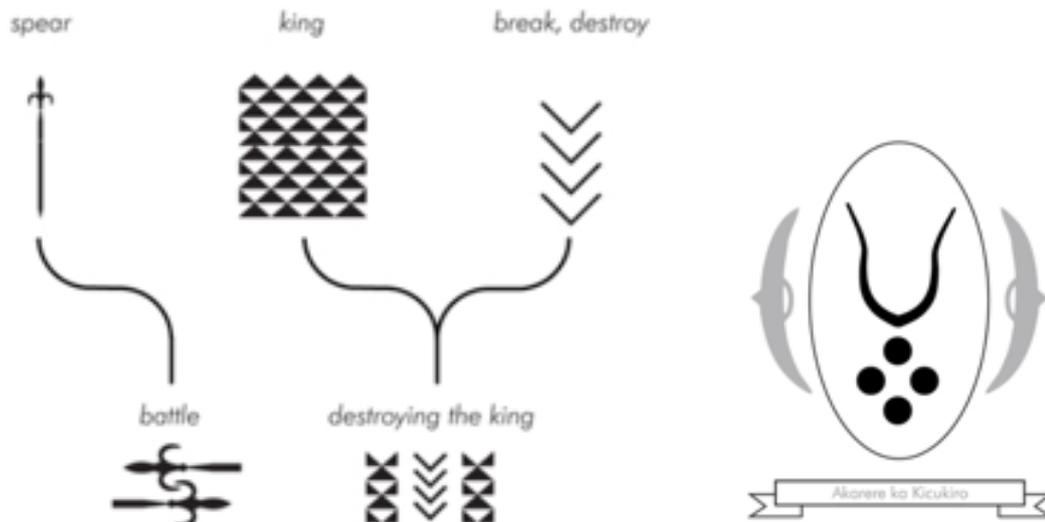


Figure 4.83: Rwandan traditional symbolism, meaning and composition.

Source: Author, 2017 after Pericles (2012)

In the process of rebranding Rwanda, George Pericles Creative Think-Tank proposed a visual identity for Rwanda's provinces based on traditional patterns as illustrated in **Figure 4.84**. This is an illustration that cultural symbols have the potential to impact on people's perception of places.



Figure 4.84: Rwanda's administrative provinces and districts based on traditional patterns.

Source: Pericles (2016)

In summary from data collected through various methods, (interviews, field survey, observation, literature review), Traditional POS/ *akarubanda* offered a balanced combination of both formal planning process and users' responsibilities, responding to users' needs and considering the human scale.

The *akarubanda* was created for functions and activities and richly pointed its reflection of religious and social values, such as privacy. It provided a scene for many people to interact, supporting high diversity of activities. It was a non-complex spatial form and blended well with the social fabric. *Akarubanda* further responded well to the climate, by respecting the thermal and acoustic considerations. The big open space embraced an organic form, through geometric patterns that consequently fit in well with the landscape.

As illustrated in Figure 4.85, the physical aspects of traditional public space are summarised into land use, spatial configuration, morphology, environmental quality and form. On the other hand, the social aspects are summarised into function, activities and meaning.

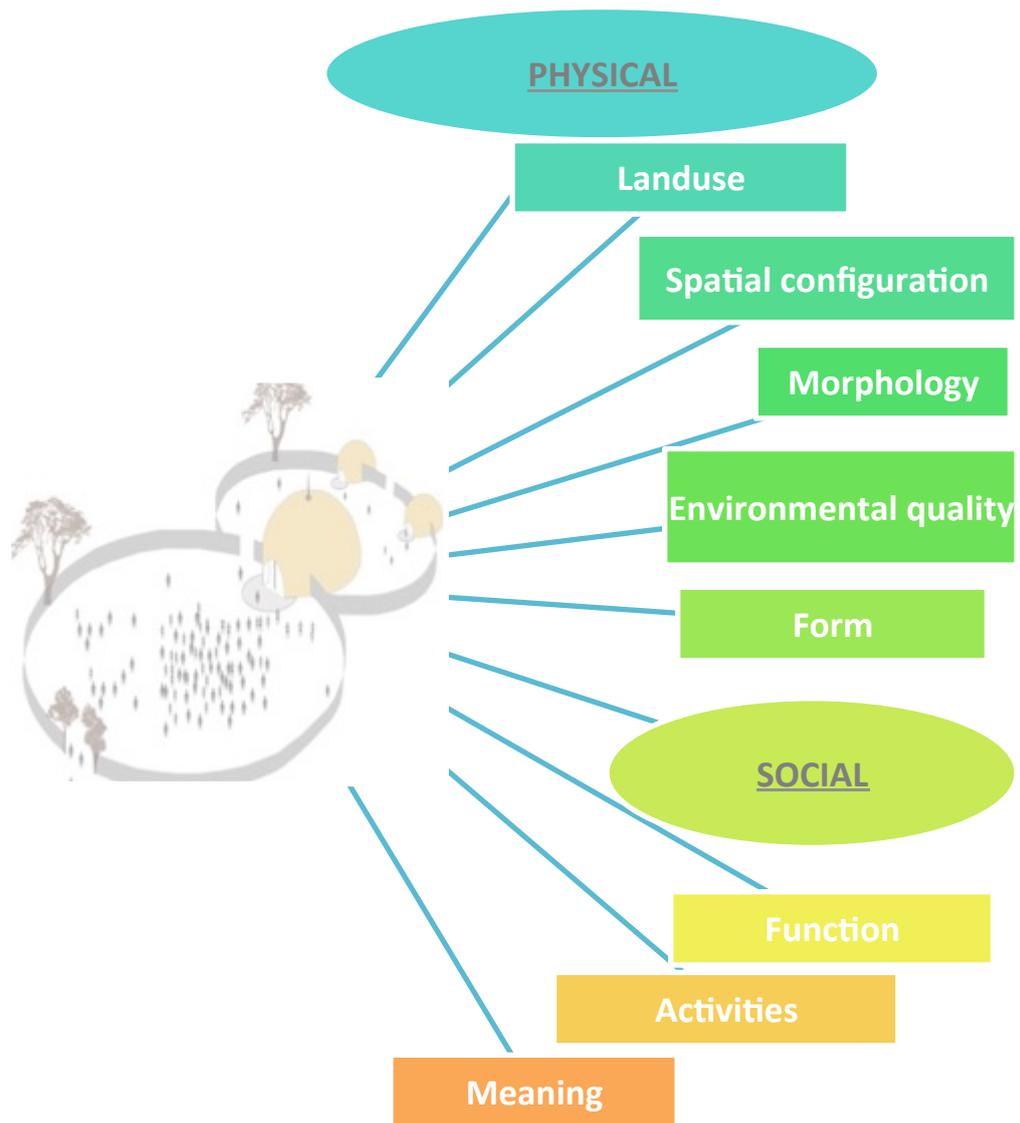


Figure 4.85: Akarubanda Physical and Social aspects.

Source: Author, 2017

4.6.2 The physical and Environmental dimension of UPOS

This dimension consists of the overall appearance and quality of the built environment of the space and is concerned with the design concepts that make its use appear inviting.

In this perspective, the typical layout of a Rwandan traditional settlement can be divided into three primary compounds; front, middle and back. A circular house (or several houses) had its/their front yard enclosed inside a larger circular enclosure. The entrance to both the compound and the house was located on the same axis. Inside the compound, depending on the social class or occupation, there would be other smaller units that served as granaries, kitchen, chicken houses, etc. The most elaborate homes had an additional enclosure at the back that served as a garden or backyard.

The general layout of a compound included a hut (or several huts) enclosed within a larger compound, forming front yard and/or backyards, which was similar in many regions of Rwanda. However, the shape of the compound adapted to the irregular topography of the landscape, which caused a deviation from the normal circular shape.

The general layout of a compound included the King's hut (administrative unit) and the milk and beer storage hut, enclosed within a large compound. The front yard acted as 'akarubanda' and public open space where the king would host activities: including ceremonies, traditional concerts, legal hearings, rituals, etc.

In terms of form, the common shape in traditional Rwanda is a circle, symbolising community, togetherness and continuity. Centralisation was an important concept in the traditional layouts of compounds and houses among many African communities.

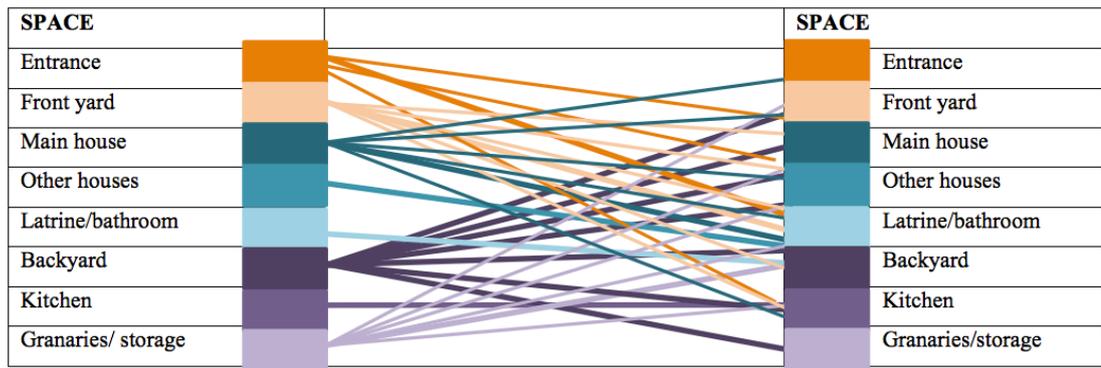
In terms of colour, and texture, in the Rwandan traditional culture, these were mainly derived from the cattle and crop activities, depending on one's occupation. Red, brown, white, black (for cattle) were common among the livestock keepers, whereas green (for crops) was a common colour appreciated by crop farmers. Other common colours were blue and yellow.

4.6.2.1 Critical interpretation of the physical and Environmental dimension of UPOS

Table 4.29 and Table 4.30, illustrate a critical interpretation of the accessibility and connections in the traditional, transformative and contemporary case studies.

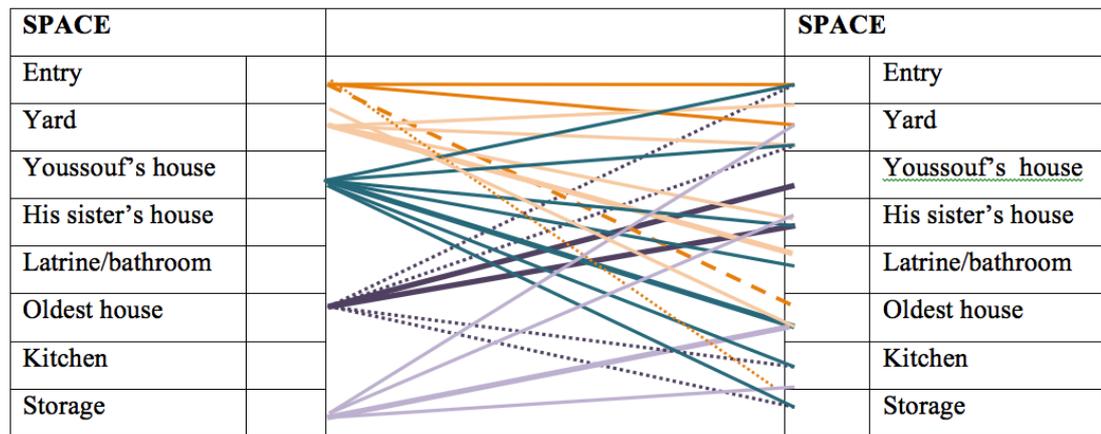
Table 4.31 and Table 4.32 illustrate the connection patterns and linkages of spaces to the courtyard in the traditional setting of KPM and the transformative setting of YCN.

Table 4.29: Access to spaces in the traditional setting.



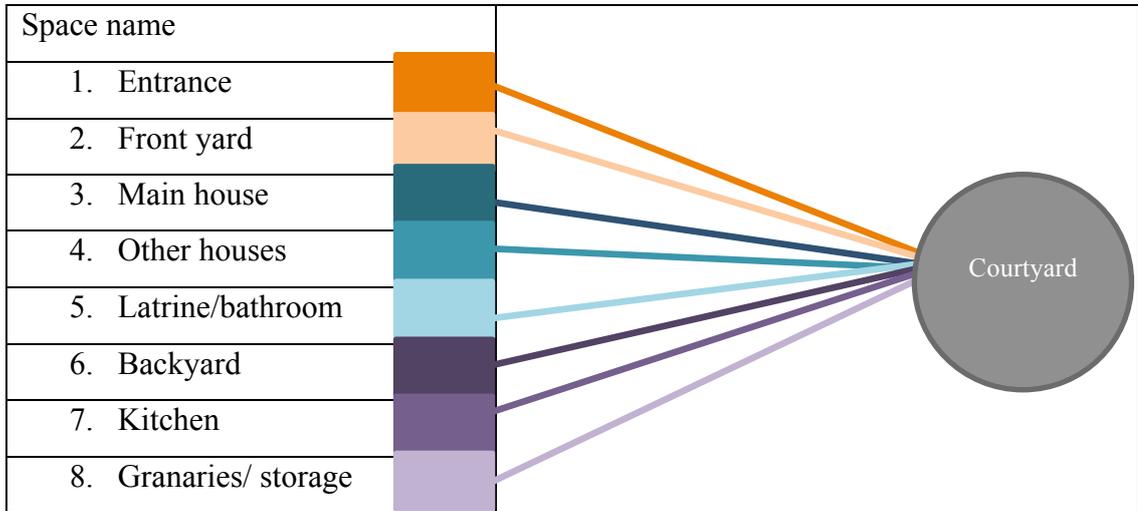
Source: Author, 2017

Table 4.30: Access to spaces in the contemporary setting of YC



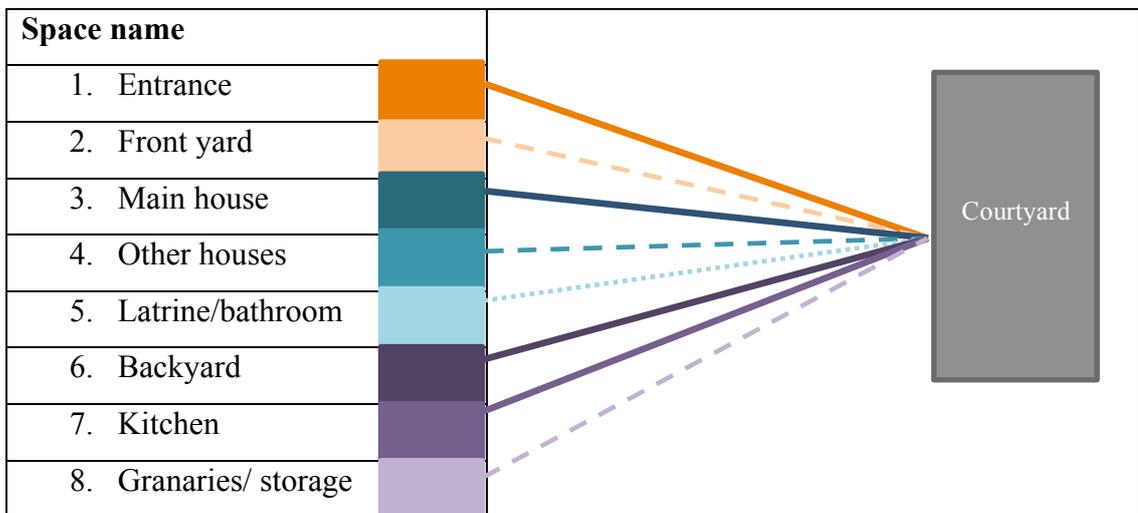
Source: Author, 2018

Table 4.31: Accessibility and Connectivity in the traditional setting.



Source: Author, 2018

Table 4.32 Accessibility and Connectivity in the contemporary case of YC.



Source: Author, 2018

4.6.3 The social and Economical dimension of UPOS

The social dimension is concerned with the way users interact with the space. The socio-cultural senses of belonging, security, privacy and safety were intermediary

variables in the provision of usable space, while cultural values and guidelines were major factors in providing liveable public open spaces, due to their embedded influence on people’s lives and beliefs.

The size and quality of the hut’s construction varied according to the social level of the owner. For the poorer members of the community, it was a matter of one small, rudimentary hut without an enclosure. Among the wealthier people, the huts were of a size and complexity commensurate with the owner’s position in society.

This traditional public open space was instrumental in holding together the social fabric by catalysing gatherings and social interaction. In ancient Rwanda, every hilltop was an important social space encapsulated in the traditional saying: “*nta agasharu katagira akarubanda*” meaning, there is no hilltop devoid of public space. The geographical location and strong relationship with its surroundings was key in the creation and use of open space. Traditionally, the open space in front of the king’s palace had only one entrance used by all visitors to access the big open space -*imbuga ngari*- where Rwandans used to meet for traditional concerts and other social activities.

Akarubanda was also found on the slopes, mainly the courtyards of the homes of rich people, *umutware*, under huge acacia trees, *umunyinya*, and in the valleys/wetlands or *mu’bishanga*, which essentially served as the watering spots, with a number of herders meeting to water cows. In Rwanda therefore, the entire traditional landscape of hilltops, and valleys, was dotted with *akarubanda*.

4.6.3.1 Critical interpretation of the social and economic dimension of UPOS

Table 4.33 illustrates a critical interpretation of the uses and activities in the traditional, transformative and contemporary case studies.

Table 4.33: Activities of Rwandan culture and changing phases of transformation of POS.

	Phase of public open space		
Activities	Traditional/indigenous	Transformative	Modern/Contemporary

Living/dining	Combined	Separated, same level	Separated, on two levels
Sleeping	Living room and Bedrooms	Bedrooms and Guest rooms	Master bedroom, Bedrooms and Guest rooms
Family gathering	Living room/ courtyard	Living room/family room/ courtyard	Living room/family room/meeting rooms
Ceremony and rituals	Backyard/ front yard	Courtyard/living room	Courtyard/living room/indoors spaces
Housework	Backyard	Courtyard/living room/ outdoor kitchen/ backyard	Living room/ indoor kitchen/ indoor laundry
Gathering	Courtyard; front yard	Courtyard; back yard/ living room	Courtyard/ restaurants/ churches/ mosques/
Food and drink	Backyard/ courtyard	Courtyard; back yard/ living room	Dinning room/ Courtyard/ restaurants/ street cafeterias/
Storage	Granaries	Outdoor storage space/ facades of buildings/	Indoor storage space/ under seats and beds/ kitchen cabinets/ backyard

Source: Author, 2018

4.6.4 *The impact of the akarubanda concept in contemporary UPOS*

In order for the researcher to find the reference, relevance and impact of Rwandese *akarubanda* concept in the selected UPOS, the users of the contemporary UPOS were interviewed and the following responses collected.

a) Have you been to a traditional *akarubanda* setting? Have you visited the king's palace museum in the past?

As illustrated in Table 4.34, the researcher found that mainly elderly people had been to a traditional public open space. Very few of the youth interviewed had actually visited the KPM in Nyanza. Most of them said it was place for foreign tourists.

Table 4.34: Visits to KPM

Answers	Frequency	Percentage
<i>Yes</i>	8	40%
<i>No</i>	12	60%

Source: Author, 2018

b) Do you think that UPOS is important to the current city

As illustrated in Table 4.35, the researcher found that many people recognised that UPOS is very important to the current city. Mainly elderly people understood the value public space had for traditional societies. A few young people said since things had changed and development was happening, the old day experiences were no longer fashionable, but they would appreciate more developed spaces that allow them to interact.

Table 4.35: Importance of KPM

Answers	Frequency	Percentage
<i>Yes</i>	14	70%
<i>No</i>	6	30%

Source: Author, 2018

c) Would you like to interact with other people in a UPOS/akarubanda in the future

As illustrated in Table 4.36, the researcher found that all people; the old, youth and children reached out to others and liked to interact with other people in UPOS. However, a few women in Biryogo expressed their need for privacy due to the need to adhere to Islamic religious and cultural practice in the area.

Table 4.36: Future aspiration for UPOS

Answers	Frequency	Percentage
<i>Yes</i>	18	90%
<i>No</i>	2	10%

Source: Author, 2018

d) What kind of activities would you like to have in UPOS?

As illustrated in Table 4.37, the researcher found that the most preferred activities were cultural performances and food and drink.

Table 4.37: Preferred activities in UPOS

Answers	Frequency	Percentage
<i>Cultural performances</i>	18	90%
<i>Food and drink</i>	16	80%
<i>Lessons/education</i>	5	50%
<i>Music</i>	14	70%
<i>Dance</i>	14	70%
<i>Politics</i>	0	0%

Source: Author, 2018

The researcher further found that YCN, which combines both walking and staying experiences, exhibits more active engagement than the other cases, which are largely just a courtyard or a compound. The node invited people to stay longer because of the scenic view it offered from the streets, and given that there was no solid fencing, it therefore allowed people to sit and watch urban life as well as be part of it.

In some YN spots, users stayed for a relatively shorter time than anticipated. This was influenced by the need to return to the office for afternoon duties. Taking photos was more dominant at the Rujugiro compound, due to the extraordinary dress codes evident during special days and meeting friends, hence the need to record the memories. There were more adult activities such as sitting, eating, playing games inside Youssouf's courtyard.

Youth groups prefer to interact inside the YC, because it offers privacy. Children were seen freely playing at YCN especially near the market, where their mothers were market traders and vendors.

People passed through the YN in all directions; some towards Biryogo market, others coming to the restaurants, or to the MTN customer care shop or to buy goods from the shops around such as fish.

Table 4.38 illustrates the number of activities in one selected observation hour in all case studies as well as their surrounding area with regard to visit duration.

Table 4.38: UPOS activities and adjacent area.

Location	Selected time	Time scale	Pass through	Active	Dormant/passive	Activity
Youssof's node	Weekday NOON	Short stay	150	120	25	Eat, drink, watch
		Long stay	0	40	15	Play games, chat
Youssof's courtyard	Weekday NOON	Short stay	10	35	18	Family, public
		Long stay	0	25	23	Coffee, tea, chat
Rujugiro compound	Saturday 1600H	Short stay	0	20	20	Wedding, 3hrs
		Long stay	0	45	150	High presence
St. Peters church	Sunday 1000H	Short stay	0	6	15	Service, 2hrs
		Long stay	0	6	75	High presence

Source: Author, 2017

In conclusion, there is a relationship between the urban design features of an UPOS and the way users utilize the space and interact with each other; this confirms the dialectic relationship between physical and social dimensions of space.

To determine this, the study first drew its understanding of the spatial environment from the application of a selection of different evaluation techniques of mapping, urban design audit and visual assessment. Secondly, it analysed the users' interaction within the case study spaces as well as with each other, by using behaviour mapping

and observation, in order to explore users' activities in the UPOS, in the surrounding areas and their staying periods.

Biryogo is near the CBD of Kigali, and is part of the native city where in the 1920's, the first resettled people begun to reside.

The urban structure is both informal and cultural. The closeness with the city centre, a variety of relatively affordable restaurants and cafeterias close to each other make it a unique attraction to urban citizens. Food, drink and playing games were the main activities observed. It was ranked high in evaluation of YCN but low in RC. Evidently, at the YCN node, users stay in active engagement for both short and long time spans since the diverse and active urban life supported it. There were a variety of places to eat, drink, as well as to watch activities on the street.

The new pavement of *kwa* Issa attracted many people; there were no barriers, physical or visual. Even though Y courtyard was unpaved, had no shade from the elements of rain or sun, the sitting benches were not up to good standard, yet, a relatively high number of users was still attracted to the UPOS. In the absence of seats, often times guest's improvised with water jerry cans. The UPOS lacked a visual connection and active engagement with the street. However, people with an attachment for the place, preferred to visit Y courtyard, from among the other choices.

The study found that specifically the youth found it private enough for their social activities. Family friends to Youssouf, preferred to stay closer with their relative and support their family business. Out of the four categories of restaurants/cafeterias in the Y node, the courtyard coffee place, rated fourth, was the most hidden, and not visible from the streets. Within the node's urban fabric, the restaurants/cafeteria with mono-functional areas and high transparency such as '*kwa* Issa' displayed good urban design attributes, which attracted users to use the space and stay longer.

Users' behaviour is normally affected by low maintenance; this especially was more evident, during the time of the study when new restaurants were mushrooming around the node. The courtyard was evidently lacking in the provision of user facilities such as shade, bathrooms, and paved floors, and comfortable chairs that in turn would entice users and hold them in the space for longer.

The study found that RC remained successful as a wedding facility since it had numerous parking spaces. Previously, as the palace of a rich person, it had initially been conceptualised to hold a high number of users, most of them drawn from a high social class and as such, the UPOS was characterised by specific urban features such as well manicured gardens, entrance drop off porch, guest wing, domestic servants quarters, swimming pool, various and sizeable lounges and dining areas, luxurious bedrooms, etc. Due to these aesthetic qualities, 'takings photos' was the main activity but its frequency depended on the number of wedding occasions.

4.6.5 Interpreting the evolution of UPOS in Rwanda

Using a stepped chronological comparative analysis as illustrated in **Figure 4.86**, the researcher came up with an interpretation of the evolution of POS in Rwanda, highlighting what was, what has changed, what is and what works.

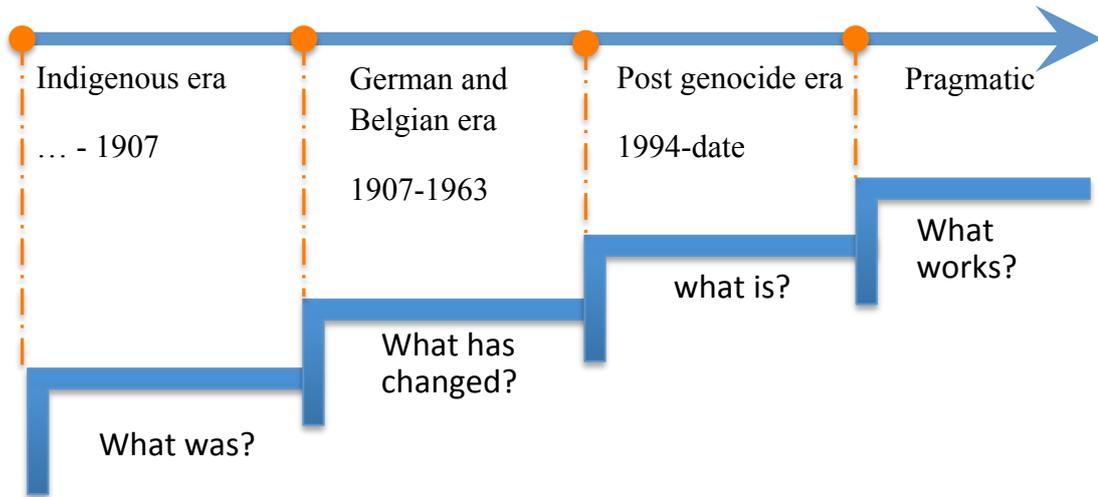


Figure 4.86: A stepped chronology of POS evolution.

Source: Author, 2017

Table 4.38 is an illustration of the evaluation modelling of POS in Rwanda, arriving at the pragmatic urban development framework highlighting how the concept of akarubanda can be incorporated in contemporary planning and design of UPOS, in order to bring urban life into the same.

Table 4.4.39:

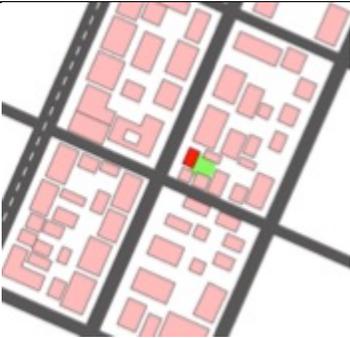
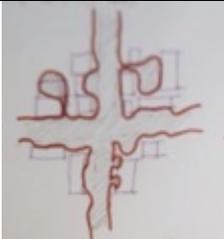
The setting	TRADITIONAL	TRANSFORMATIVE	CONTEMPORARY	PRAGMATIC
Question	What was?	What has changed?	What is?	What works?
CASE	KING'S PALACE MUSEUM, NYANZA.	YOUSSOUF'S COURTYARD AND NODE, BIRYOGO	RUJUGIRO COMPOUND, REBERO, KIGALI	ANYWHERE Bringing back life into UPOS
Image				
Layout of UPOS and surrounding				

Illustration and interpretation ;				
Analogy	Choreography of space- FLOW of people	POS like a river	POS like an isolated pool	Full of urban life = Liveable
The setting	TRADITIONAL	TRANSFORMATIVE	CONTEMPORARY	PRAGMATIC
Question	What was?	What has changed?	What is?	What works?
PHYSICAL				Recommendations
Plan configuration	Layout was mainly in form of courtyards, mainly focused on outdoor space. Mainly circular. For many public activities	Fewer, smaller courtyards, combined outdoor and indoor. Orthogonal: rectangle, square. For fewer activities.	Undefined. There is a glaring lack of cultural consideration in the planning of modern public space. For fewer and mixes activities.	<ul style="list-style-type: none"> • Provide good imageability, enclosure, transparency, • Provide spaces that respect human scale • Ensure both visual and physical accessibility
Facades and elevations	It has deep cultural reflections and less beautiful compared to modern.	Users believe that use of higher quality and/or more expensive materials increases the aesthetic of buildings.	It has lesser cultural reflection and more aesthetic considerations. There is lack of cultural character in the facades of public space	<ul style="list-style-type: none"> • Provide spaces that reflect social and cultural values • Provide a long term place

				keeping principles
Thermal comfort	The thermal comfort was viable due to the use of vernacular materials and technique of construction. Traditional techniques were fitting with the context.	Shifting comfort levels. Newer/modern materials and techniques.	Low quality of thermal comfort due to the low thermal qualities of imported materials and handicap of available techniques. Most transformations unable to cope with modernization.	<ul style="list-style-type: none"> • Ensure thermal comfort in the space e.g. soft cape, plants, trees, water • Design the layout to enhance good ventilation, sun shading. sub-spaces • Provide safe walkways and paths, shaded against weather elements • Increased awareness on environmental and health issues
Sense of place	There is sense of place. Identity. Imageability.	Due to the modernization, most of the public space has lost the identity.	Lack of sense of place. identity	<ul style="list-style-type: none"> • Provide good imageability, enclosure, transparency and complexity. • Provide spaces that reflect social and cultural values
Quality of space	In the tradition the quality of composition for the public space was not well developed due to the materials used and low	The vernacular methods have more impact and influence on the sustainability whereas modern materials may look	In the modern, public space have transforming qualities due to the influence of architects, urban planners,	<ul style="list-style-type: none"> • Consider a mixed use fabric • Provide spaces that respect human scale • Involve the local community in

	technology.	beautiful but have poor in sustainability.	There is lack of cultural character in the modern public space	the planning of UPOS, from initial stages
Cultural elements	The culture was the basis of the design of POS and this could be reflected in the spatial organization and the activities provided.	There is lack of cultural character in the modern public space.	Cultural elements are no longer primary. Modernity has been more influential in terms of activities and organization of society. There is lack of cultural character in the modern public space	<ul style="list-style-type: none"> • Provide spaces that reflect social and cultural values • Provide design that respects the local social values e.g appropriate personal distances between age/gender classes.
Sustainability and connection to nature	The public space was more sustainable. Human scale	Decreasing of social sustainability visible in the use of public space	Less related to the nature, less human scale	<ul style="list-style-type: none"> • Maintain high standards of users' facilities • Ensure thermal comfort in • Ensure involvement of local community
SOCIAL				Recommendations
Number of people	Many people. The whole village Space attractive to all ages.	Fewer people. Cosmopolitan. The majority are male. Contained in relatively Smaller spaces. The majority of people in POS are male	Traditional public spaces were more attractive to all ages since everyone was benefiting. There is lack of cultural character in the modern public space	<ul style="list-style-type: none"> • Consider a mixed use fabric • Provision of a variety of leisure activities • Provide long-term management principles • Ensure involvement of local community

Ceremony and rituals	Backyard/ front yard	Courtyard/living room	Courtyard/living room/indoors spaces	<ul style="list-style-type: none"> • Ensure involvement of local community • Provide spaces that respect human scale • Ensure place is safe and secure
Food and drink	Courtyard/backyard There were norms about eating. Elderly people and men were drinking in the courtyard while women were cooking.	Courtyard/back yard and indoor space/ e.g. living room Changes happening, visible influences from improved infrastructure. (<i>Kwa' Issa</i>)	One can eat from everywhere. E.g. Both male and female drink alcohol. Gender policy in Rwanda. Dining room/ Courtyard/ restaurants/ street cafeterias/	<ul style="list-style-type: none"> • Ensure provision of good quality food and drink services • Consider a mixed use fabric • Ensure place is safe and secure
Sitting and watching	Courtyard. According to norms	Both courtyard and living room. Changes happening	Courtyard, living room, meeting halls	<ul style="list-style-type: none"> • Design the layout to enhance good ventilation, sun shading, sub-spaces, • Ensure adequate seating areas, shaded against weather elements • Provide spaces that respect human scale
Selling; vending/ hawking	On a specific day. It was ceremonial. At times done on occasional days.	The whole week. Some on occasional days.	Almost at all times. 24/7 economies	<ul style="list-style-type: none"> • Consider a mixed use fabric • Promote public transport, cycling, walking.

				<ul style="list-style-type: none"> • Provide safe walkways and paths, shaded against weather elements • Providing adequate lighting especially at night
Story telling and poetry	Oriented stories which were more educative. From elderly to youth and children. Open air classrooms/Outdoor space. Talents were more developed from this poetry.	Normal conversation. Online communications; Email, FB, WhasApp. By all. Youth to youth. Poetry mostly for special occasion. Indoor space. Poetry done for leisure	Less physical conversation. Shifting to e-communications; FB, WhatsApp. By all. Fewer traditional story telling. Youth more active. Poetry done for leisure. Indoor space/classrooms.	<ul style="list-style-type: none"> • Ensure place is safe and secure • Consider places for children
Playing games	Traditional games were more present. Representation of power	Few traditional games e.g. <i>igisoro</i> . Modern games. shifting representation of power to monetary compensation.	Modern games. Monetary oriented. Watching the TV.	<ul style="list-style-type: none"> • Ensure place is safe and secure • Ensure adequate seating areas, shaded against weather elements •
Gathering	Courtyard; front yard	Courtyard; back yard/ living room	Courtyard/ restaurants/ churches/ mosques/	<ul style="list-style-type: none"> • Ensure adequate seating areas, shaded against weather elements • Ensure place is safe and secure

Source: Author, 2017

CHAPTER FIVE

5 SYNTHESIS AND INTERPRETATION OF FINDINGS

5.1 Introduction

Chapter four revealed the problem of the lack of UPOS in Kigali and the opportunities and constraints in the use of existing UPOS. In this chapter, the researcher discusses the impacts of the physical, environmental, social and economic dimensions of UPOS and their potential for bringing back life to the UPOS, based on the study findings and theoretical underpinnings. The perceptions of users of selected UPOS in Kigali city were used to measure the liveability of the UPOS, and to highlight potential planning and design recommendations. Different scales and timescales were used to analyse the case studies, and as a lens for tracing the historical differences between UPOS, identifying the opportunities and constraints, identifying ways to resolve the deficiencies, recommending improvements in the provision and use of the UPOS and drawing lessons on how future urban planning could be informed by the existing situation.

It was important to bring together a synthesis and interpretation of traditional public space in terms of planning and urban design, in order to arrive at an overview in ‘bringing life back to urban public open spaces’ in Kigali city and how the overview can be used in contemporary urban planning and development. Using knowledge gained from the indigenous understanding of liveability in UPOS, a comprehensive analytical framework was created based on the evolution model, to measure and assess the empirical work from the transformative and contemporary cases of UPOS in Kigali.

The study findings indicated both success in some aspects and the need for improvement in other aspects. For instance, in Biryogo’s courtyard and node, the

design elements even though informal, were to some extent perceived by respondents as successful. The absence of amenities and services were noted as challenges. Users were largely satisfied with the physical design, appearance, and identity value, its contribution to the city, accessibility, safety and maintenance. On hot sunny days, users were unable to actively engage with the spaces and hoped for additional trees/greenery and sun shading devices.

5.2 Research synthesis

Based on the finding from the study, the answers to the research questions are synthesised in this chapter; based on the empirical data collected from the case studies which included urban design audit, structured interviews/focus groups, participant observation, behavioural mapping and questionnaires. The synthesis is categorised into two; the physical and environmental impacts and the social and economic impacts, in order to offer a foundation for overall conclusions and policy recommendation on how to bring life into UPOS in Kigali, and thus improve their liveability.

5.2.1 Physical and Environmental impact of UPOS

The study attempted to build understanding of how shared spaces were conceived and used in ancient Rwanda. The study analysed how communal spaces are represented, and used in Kigali, today. The qualities examined included commemorations, celebrations and rituals that took place in shared spaces, in early Rwanda. In most cases, these social activities were either in honour of the King or between related individuals (families, marriage based relationships, etc.), or sometimes conducted as entertainment for the King.

For many decades, the concept of *akarubanda* has served Rwandans as a place for pleasure; drawing huge crowds of old and young, men and women, to socialise. The open space was more valuable than the huts, which were constructed from mud, with

grass-thatched roofs. In evaluating thousands of public spaces around the world, the Project for Public Spaces (PPS) found that successful spaces had four key qualities: they are accessible, users are engaged in activities, the space is comfortable and has a good image, and it is a sociable place where people meet and host visitors. The findings of the current study, arrived at the main attributes of a liveable UPOS, as Accessibility, Comfort, and Sociability; which resonate well with the criteria established by PPS.

The Commission for Architecture and the Built Environment has provided a ‘space shapers guide’, which identifies both good and bad characteristics of open spaces, and stimulates new ideas for improvement and management of public space. The CABE criteria was captured in the current study, by rating the site against 41 characteristics, grouped into eight sections: Access: finding your way and getting about; Use: what activities and opportunities the space has to offer; Other people: how the space caters for different needs; Maintenance: how clean and cared for the space is; Environment: how safe and comfortable the space is; Design and appearance: what the space looks like and what it is made from; and Community: how important the space is to local people and how the space makes one feel.

The findings from the field survey indeed relate closely to the work of Whyte (1980), who presents liveable dimensions of POS as illustrated in **Figure 5.1**.

Additionally, PPS (2001), which is viewed as a continuation of Whyte’s work presents liveable dimensions of POS with more detailed criterion that is adopted by the 2007’s handbook for Creating Successful Public Spaces, famously known as ‘how to turn a place around’ as illustrated in **Figure 5.2**.

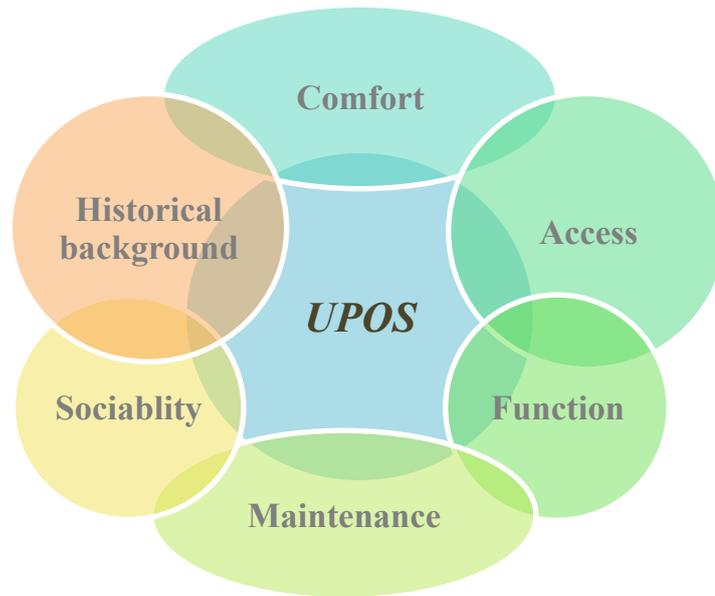


Figure 5.1: UPOS Liveable dimensions.
Source: Author, 2017 after (Whyte, 1980)

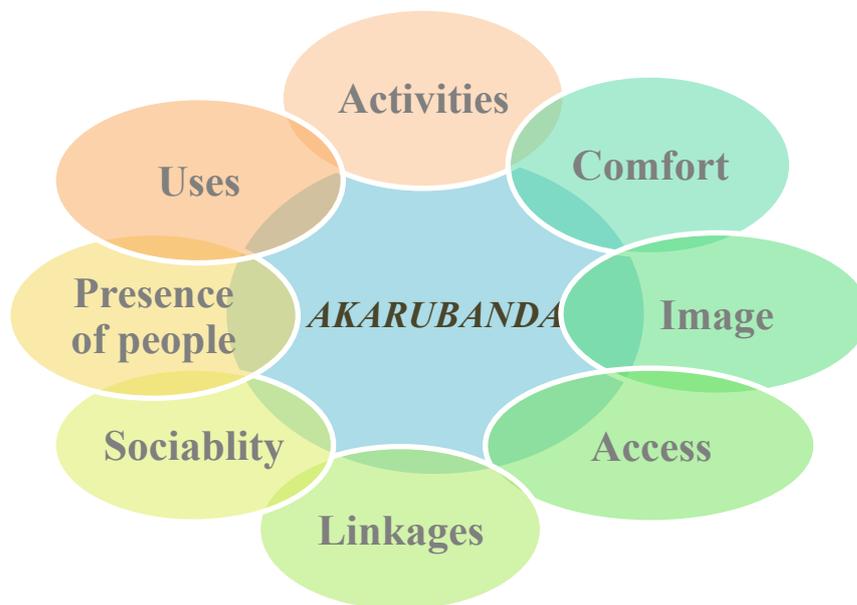


Figure 5.2: Recommendations on ‘How to Turn a Place Around’.
Source: Author, 2017 after (University of Michigan, 2007)

The analysis of the four restaurants revealed that if one wants to realise successful UPOS, ‘Good accessibility and linkages’ should be the main factor in activating UPOS, bringing life into it, or when designing a UPOS. Consequently and evidently, from the case studies, accessibility and linkages in turn promote the other constructs investigated in this study, namely; ‘Presence of people and Sociability’, ‘Users and Activities’ and ‘Degree of comfort and image’.

Therefore, the image of UPOS in Kigali can be improved and the lack of life in them resolved. Whereas all four factors are important in determining the success of a UPOS, in the future planning of UPOS in Rwanda, it is recommended that a historical reflection be made and the different categories of UPOS users (age, gender and economic background) studied in order to obtain a holistic view of successful UPOS that cater for larger demographics.

The study drew the following analogies, related to the physical and environmental actors of UPOS.

5.2.1.1 Outdoor slabs as public open space

The researcher found out that even in the absence of formal sitting areas and furniture, people innovatively use foundation slabs to create social space as illustrated in **Figure 5.3**. Whyte (1980) examined many correlations between space use and the physical environment and noted that comfortable seating choices are the primary and essential component of urban public spaces.

Building on Whyte’s work, the Project for Public Spaces (2005), constantly referred to good public spaces as those that give users a flexible choice for seating. However, this seems not to be the case in the UPOS studied. Through this study, it seems that the opportunity to socialise tended to outweigh the physical constraints. The innovative idea behind ‘slabs for seats’ further helps to enhance the notion of active

frontages and vibrant social space, regardless of the spatial qualities of the same. The eyes on the street concept by Jacobs (1961), was also evident in YCN.



Figure 5.3: Outdoor slabs as public open space

Source: Author 2017

In Youssouf’s courtyard, the presence of adequate sitting does not seem to influence the use of the space. Users flock in large numbers and improvise benches with empty water jerry cans. During the survey, some users stood for as long as it took for a place to sit to become available. It was clear that they preferred the opportunity to be with others and socialise, rather than the materiality and/or state of equipment of the UPOS.

5.2.1.2 Street as public open space

World over, UPOS are diminishing (Madanipour, 2003), but the current study found new ways of rethinking the street as a social space, evident in the Biryogo site. Here, pedestrians and cars were more often than not, “sharing” the urban space

comfortably as illustrated in **Figure 5.4**. There are many mechanics in the Biryogo area and users preferred to have their cars checked or repaired as they took their lunch in the restaurants adjacent to the YCN node. This is proof that cars and people can coexist in urban spaces.



Figure 5.4: Street as public open space

Source: Author 2017

Following from the work of Lynch (1981) who defined public open space by its accessibility, and Cooper and Francis (1998, p.76) who defined UPOS as “urban open spaces publicly accessible, and designed and built for human activity and enjoyment”, the users of the informal UPOS at YCN felt that it contributed more to the city’s urban structure than the more formal UPOS, even the flow of commercial activities into the streets, resonated with the definitions of the two theorists of UPOS.

5.2.1.3 *Alleys as public open space*

The researcher found that narrow alleys, considered lost space (Trancik, 1986) in urban design have the potential of becoming UPOS. This was proof that the minimum dimension standards prescribed for UPOS in various contexts can be reconsidered as per context. **Figure** illustrates a narrow alley of 6 meters by 2 meters, which accommodated laundry space with sitting areas, collectively making it social space for the users.



Figure 5.5: Alleys as public open space

Source: Author 2017

5.2.1.4 *Urban nodes as public open space*

Whereas a node is spatially formed by the junction of two streets, (Lynch, 1960), the activities and socio-cultural processes around it are the ones that actually make it to function as a social space. The researcher found that the YCN node has itself become a successful UPOS, diluting the presence of the otherwise linear streets. The node as

a POS further allows interaction between a diverse species in the urban environment; cars, trees, people, bikes, motorbikes, etc. as illustrated in **Figure 5.6**.



Figure 5.6: Urban node as public open space

Source: Author 2017

According to Carmona (2010), public space relates to all those parts of the built and natural environment where the public have free access. Further, public space encompasses: all the streets, squares and other rights of way, whether predominantly in residential, commercial or community/civic uses; the open spaces and parks; and the “public-private” spaces where public access is unrestricted (at least during daylight hours). The later expansion of the original YC to encompass the adjacent node as suggested by the study supervision panel, in December 2017, confirms

Carmona's definition and indeed allowed the researcher to analyse activities in the physical setting.

5.2.1.5 Environmental consideration in the use of public open space

The study found that the UPOS setting remains flexible throughout the day. Gelh (1987) has argued that the outdoor environment influences the activities. In the current study, it was evident that people moved their sitting areas and layouts for the benefit of comfort. They moved several times in a day in order to seek shade under trees or the eaves of houses, as protection from the sun and rain. The shaded areas in the UPOS were more used than the non-shaded areas.

Figure 5.7 illustrates clusters of people sitting under trees or under house eaves.



Figure 5.7: Environmental consideration in public open space

Source: Author 2017

5.2.2 Social and Economical impact of UPOS

Tonkiss (2013) has argued that contemporary city design is a matter beyond iconic architecture, flagship projects or ambitious master plans. He further emphasizes the importance of the formal and informal practices that shape urban environments, that produce and address urban problems and/or that organize people as well as ordering space. From this perspective, the study was able to draw the following analogies, related to the social and cultural factors of UPOS.

5.2.2.1 Urban life as a cultural asset

The researcher considered learning from the community while at the same time experiencing the quality of any selected UPOS as a valuable tool for framing urban life as a cultural asset as illustrated **Figure 5.8**. The quality of urban life further transforms a space into a place.

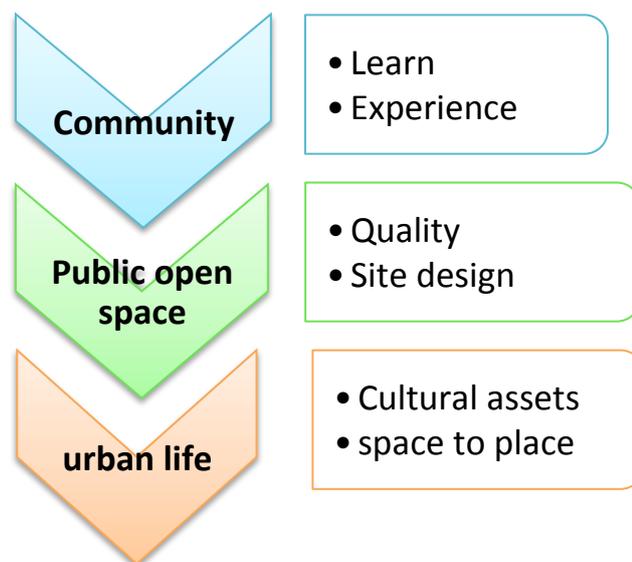


Figure 5.8 urban life as a cultural asset

Source: Author 2017

The researcher used a two-pronged approach. First, the study used literature review to develop an analytical framework that would guide how to study UPOS in Rwanda. Secondly, the researcher used a reference case study, bringing in a more balanced and contextual application of the analytical framework in the other two urban UPOS

case studies. The deep understanding of Rwanda's traditional concept of UPOS helped the researcher to draw lessons from empirical work, and in turn supported the comparative analysis of transformative and contemporary UPOS in Rwanda. This was a peculiar injection of strength into the study, in order to generate new theory as detailed in the evolution model.

The findings revealed that the current provision and planning of UPOS in Kigali does not encourage liveability in the UPOS studied, and further, that public participation would be useful in the addition and implementation of ideas on bringing life into UPOS; attracting users and encouraging them to stay longer. Whereas the presence of users in UPOS depends on the attractiveness of the space, RC which is more aesthetic and modern, attracted fewer users from the neighbourhood than YC which is informal yet, was full of life at certain times of the day.

5.2.2.2 Social cohesion as a catalyst for public open space

The researcher found that the presence of users matters if UPOS is to succeed (Whyte, 1980). This provides proof of the theory that 'what attracts users most are other users. As evident in the data collected in this current study, indeed the presence of life in a UPOS further improves its liveability. Users are attracted to public open spaces that have socio-cultural meaning and context in view of functions and primary and secondary design elements.

When users enter a lively UPOS, they feel encouraged to stay longer, which is an important component of the quality of urban life. **Figure 5.9** illustrates how social cohesion helps to bring more people to the place, who, though engaged in different activities, collectively facilitate quality urban life.



Figure 5.9 social cohesion as a catalyst for public open space

Source: Author 2017

Therefore, William Whyte's (1980) theory regarding the use of space as well as Jan Gehl's (1987) theory on 'optional activities' have coincidentally been demonstrated and/or conceded to, in each of the UPOS selected for this study. Whereas the pattern of use of UPOS has a strong relationship with the frequency of activity types, these still maintain a strong interrelation with the location of the activity.

5.2.2.3 Traditional games as a catalyst for public open space

The researcher found several spots in YCN where users enjoyed playing *igisoro*, Rwanda's famous traditional game, as illustrated in **Figure 5.10**. Both playing and watching the game helps to improve the image and sense of place (Noberg-Schulz, 1980) of the node. Users who came to either play traditional games, or watch others playing, consequently attracted many other users to the street, hence bringing more life, which in turn improved the quality of urban life.



Figure 5.10 Traditional games as a catalyst for public open space

Source: Author 2017

5.2.2.4 Public art as a catalyst of the liveability of UPOS

Noberg-Schulz (1980) describes public art as a catalyst for drawing people into public space. This was demonstrated at Youssouf's family houses, where a mural hanging on one of the walls, seems to have improved the image and sense of place of the node tremendously. The researcher found that people felt happier to play traditional games next to this wall with a cultural theme painting that they could strongly identify with.



Figure 5.11 Public art as a catalyst for public open space

Source: Author 2017

5.2.2.5 *The car as an object and a play item in UPOS*

As evident in the fieldwork, the car is no longer alien in UPOS. It is welcomed in the street and does not seem to interfere with the socialising of users of the space. On various spots of the case study, users were observed playing with the car, as any other play object. The area is dominated by mechanics whose repair or check-up jobs took place on the streets, without significantly affecting the flow of traffic. There were casual labourers seeking jobs to clean cars or offering other services, while the car owners took their lunch or coffee. The car owners added to the notion of “eye on the street”, as some of them took their food or coffee while watching the cleaners do their job. This further attracts more users to the node.

As illustrated in **Figure 5.12**, people walk freely on the road; which they believe they share with the car satisfactorily.



Figure 5.12 The car as a play object in public open space

Source: Author 2017

Whyte (1980) presents the objects that people like in UPOS as ‘water, streams, fountains, pools and trees’. However, at the YCN, it was possible to occasionally find the space under the line of trees empty, at the time that users flocked into the cafeterias for coffee or to chat and enjoy the sunshine. The mechanics and casual labourers in YCN, found a more mutually satisfying connection to cars and motorbikes than water and trees. Through this lens, ‘the car’ which has been consistently viewed as a competitor of people in urban space was actually entered in the list of desirable objects.

5.2.2.6 Walls and screens as user repellents

From the RC case study, the researcher observed that walls and fences, even green fences, seem to repel users from public open space. They block visual permeability, which makes people feel unwelcome into the UPOS, thus keeping off. The lack of a walkway on the side of the RC case study makes the situation even worse. The walkway is only available on the opposite side of the road as illustrated in **Figure 5.13**. The study found that in as much as green fences look attractive from a distance,

at a closer range, they might be oppressive to users. The open drain on the RC side also made it much more inaccessible.



Figure 5.13 Walls and screens as user repellents.

Source: Author 2017

According to Montgomery (1998), there should be a discernable relationship between the number of UPOS users and the population density of the area where the case study site is located as well as the vibrancy and vitality of UPOS; but the fieldwork at RC indicated contrasting results because most of the users were from outside the locality and indeed used the premise on invitation.

5.3 Bringing urban life in UPOS

This section demonstrates how the Rwandan concept of *akarubanda* can be incorporated into contemporary UPOS, bringing life to urban space. A pragmatic urban development integrative framework illustrated in **Figure 5.14** has been used to demonstrate the same.

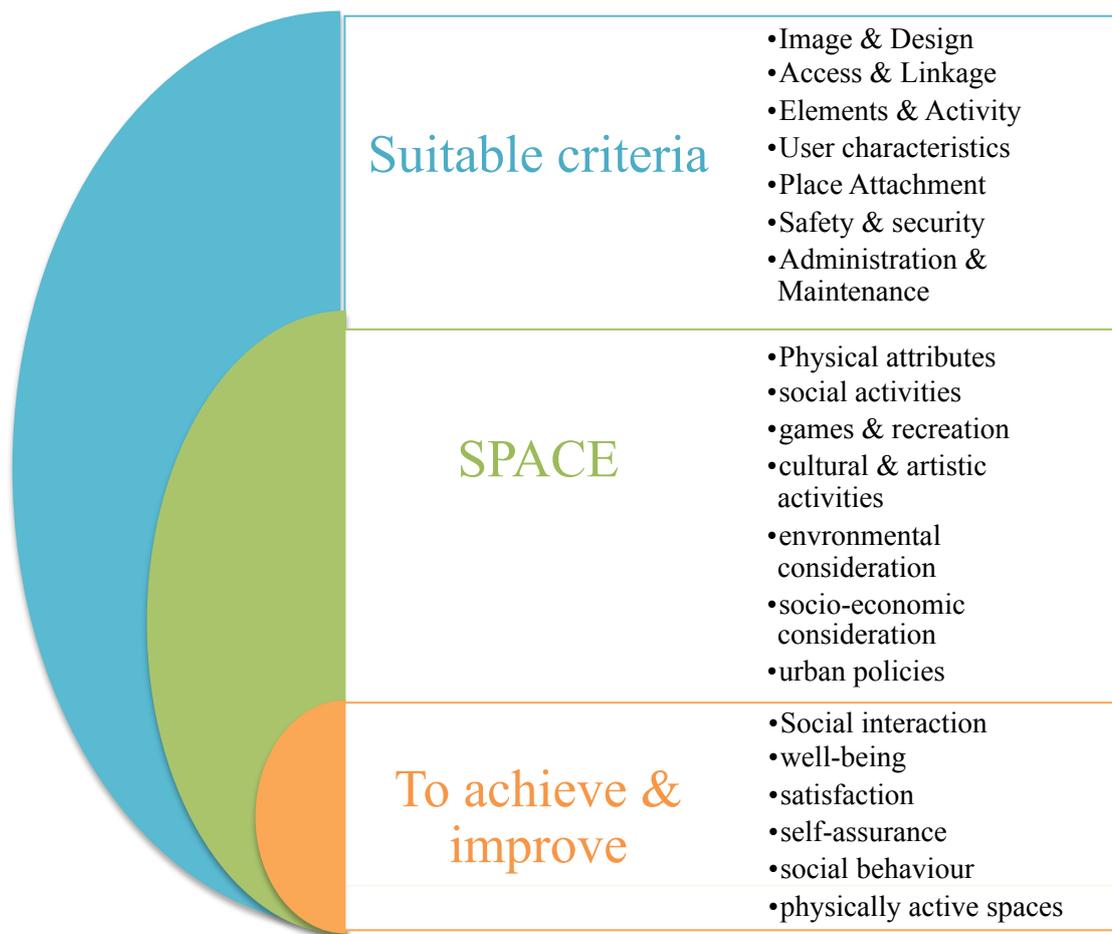


Figure 5.14: Suitable criteria to achieve and improve urban life.

Source: Author, 2018

The researcher therefore believes that both the physical and social dimensions of UPOS are essential in bringing life into the spaces, as illustrated in **Figure 5.15**. UPOS remain relevant and useful to people, in terms of time and space; since they allow a continuation of the transmission of societal values as well as offer a balanced democratic space for building relationships. From this perspective, there are obviously adequate lessons in the traditional concepts of UPOS that contemporary urban planning and design can benefit from.

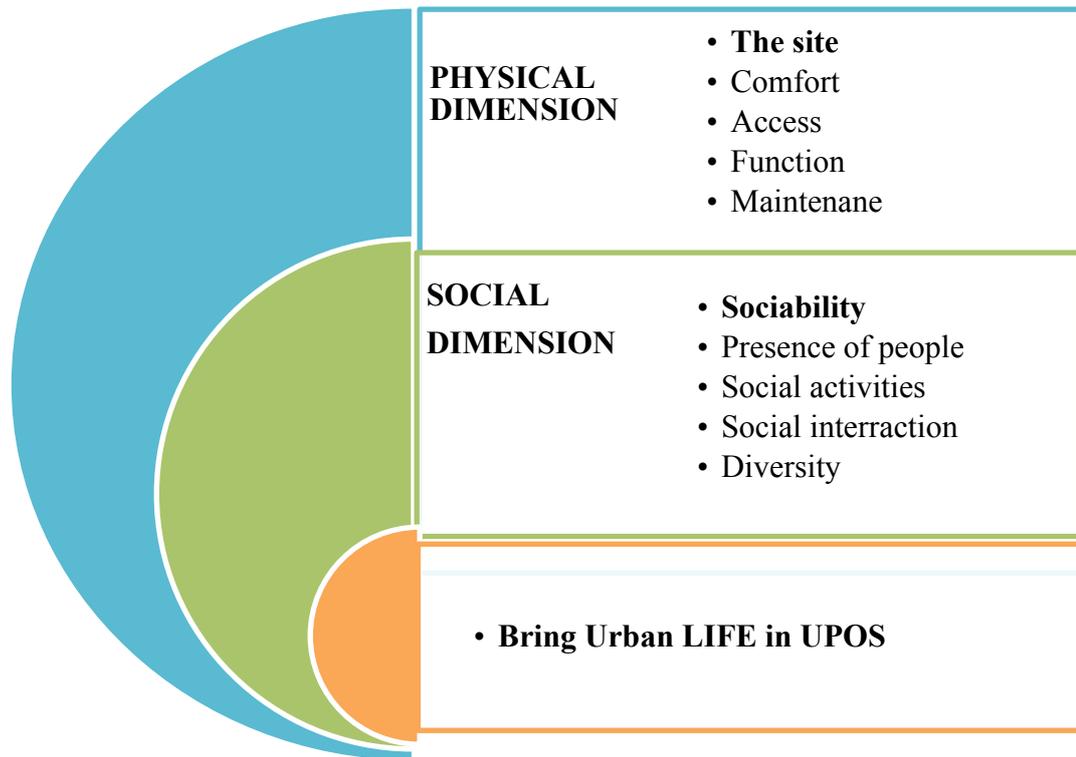


Figure 5.15: Means to bring life into urban POS.

Source: Author, 2018

The researcher found that the social dimension concept of traditional public space has not been incorporated well enough into the contemporary settings. According to study respondent number 8, an elderly man living in Biryogo, the current society in Kigali looks down on traditional culture and values; those values that made UPOS more valuable, traditionally. The respondent believes that the subdivision of land into plots was the first tool that eroded culture; it is this subdivision that made people become more economically minded. The proprietor of Youssouf’s courtyard believes that if he leveraged a substantial amount of money today, he would demolish the courtyard setting and put up a high-rise building for commercial use.

Respondent number 13, who lives in the city of Kigali, noted that because times have evolved, urban planning should not make reference to the past. Indeed, people have to change and adopt modern lifestyles. His insights hinted that current architecture and planning does not need to provide new big spaces for socialising but rather should enhance the existing markets and streets to serve multi-functional social spaces.

Respondent number 15, a faculty member at the school of architecture, University of Rwanda, claimed that the akarubanda is an important reminder to people's history. The current models of public open space in Rwanda such as *car free-zone*, *car-free days* and shopping malls, are only beneficial to the rich and tourists who are aware of the health benefits of riding and walking.

Several on-site respondents agreed that successful UPOS needs to have a strong relation of commercial activities with adjacent areas. However, a few respondents voiced a diverging opinion, that championing of UPOS may not be good for Rwanda, because such places do not offer enough privacy for people, especially Rwandans, who are introverts by nature.

Drawing on the interrelations between the physical and social dimensions of UPOS, the researcher related the analogy that, the presence of life in UPOS can be viewed as the flow of water in a river and the absence of life as a stagnant pool.

5.3.1 UPOS (with urban life) is like a river.

The analogy that whenever UPOS are filled with urban life, they are like a river, is viewed in the current study as: the linearity of the streets is diluted and people, just like water, keep flowing easily as illustrated in **Figure 5.16**.

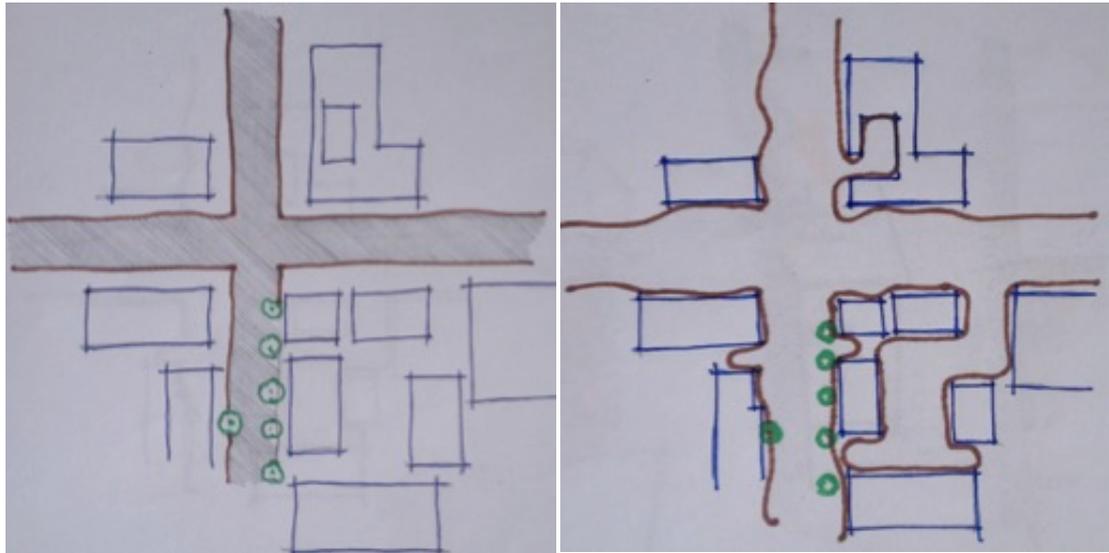


Figure 5.16: From Linear to Organic flow.

Source: Author 2018

The researcher found that in YCN, users move freely into spaces just like water flows freely in a river, in **Figure 5.17**. The restaurants are open to all, and are freely and easily accessible. Food and drink remain an attraction to users. . The time taken to eat and chat with friends further contributes to the quality of life in the node. A variety of other activities are offered to the neighbourhood, adjacent areas and city residents such as traditional games and car wash or repairs.

The researcher also found that the nature of the surrounding urban fabric, being mixed use, enhances the sociability of the node making it more socio-culturally rich. The on-going modifications seem to be pedestrian sensitive and the owners of the structures believe that the modifications will attract more users, hence improving the liveability of the space.

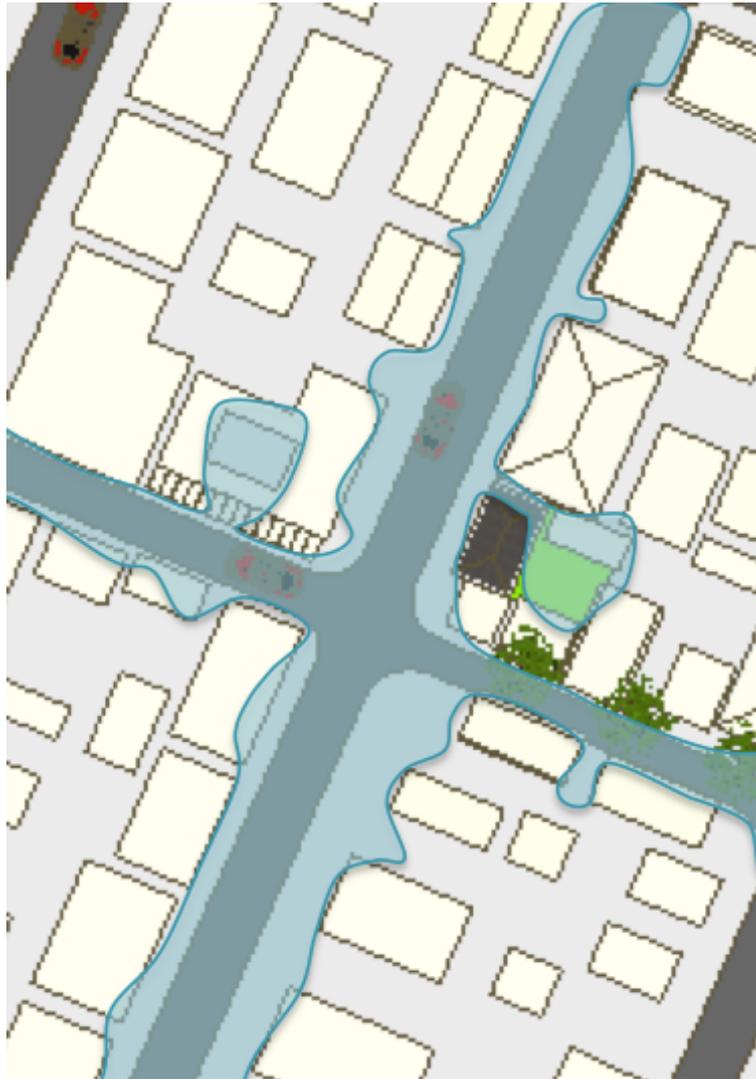


Figure 5.17: UPOS like a river.

Source: Author, 2018

The findings from the field survey indicate that even though the case studies are following modern trends, they still retain some significant socio-cultural elements and concepts that had influence on the indigenous setting. This influence has evidently affected the level of satisfaction, which in turn has impacted on the number of users and patterns of use. Throughout the study, it was found that the majority of users enjoyed meeting and gathering around activities such as traditional games or food and drinks.

The two roads were rehabilitated and tarmacked in November 2017. Before then, the street existed purely as a linear element and a pathway that people used to move from one place to the other. The drainage channel and screens at the edges seemed to separate the street from the adjacent buildings and spaces. However, after the rehabilitation, the buildings adjacent to the street have also been refurbished and their frontages paved or covered with screed to usher in users. Most of the eating and drinking functions inside courtyards or restaurants seem to flow out easily onto the streets.

The businesses around the YCN node are increasingly considering breaking any visual and physical screens to allow more permeability. More and more street activities such as playing *igisoro*, Rwanda's famous traditional game, help to improve the image and sense of place of the node. Participants attached a value to the space, not only because they played the games, but also because they enjoyed watching others play. The presence of users matters if POS is to succeed (Whyte, 1980). This proves that 'what attracts users most are other users' and that the presence of life in POS improves its liveability.

From this perspective, the current street flows like a river, where the people are like the water that keeps moving and the buildings are like the stones at the riverbanks that are stagnant. The researcher found that the original linearity defining the YCN node seems to be fading away and the concept of the street as urban public open space is more evident. Just like a river keeps eroding the surrounding areas, businesses around this node are slowly transforming, giving the users more opportunities to interact and socialise.

As illustrated in **Figure 5.18** the flow of people in YCN seems natural, organic and free flowing

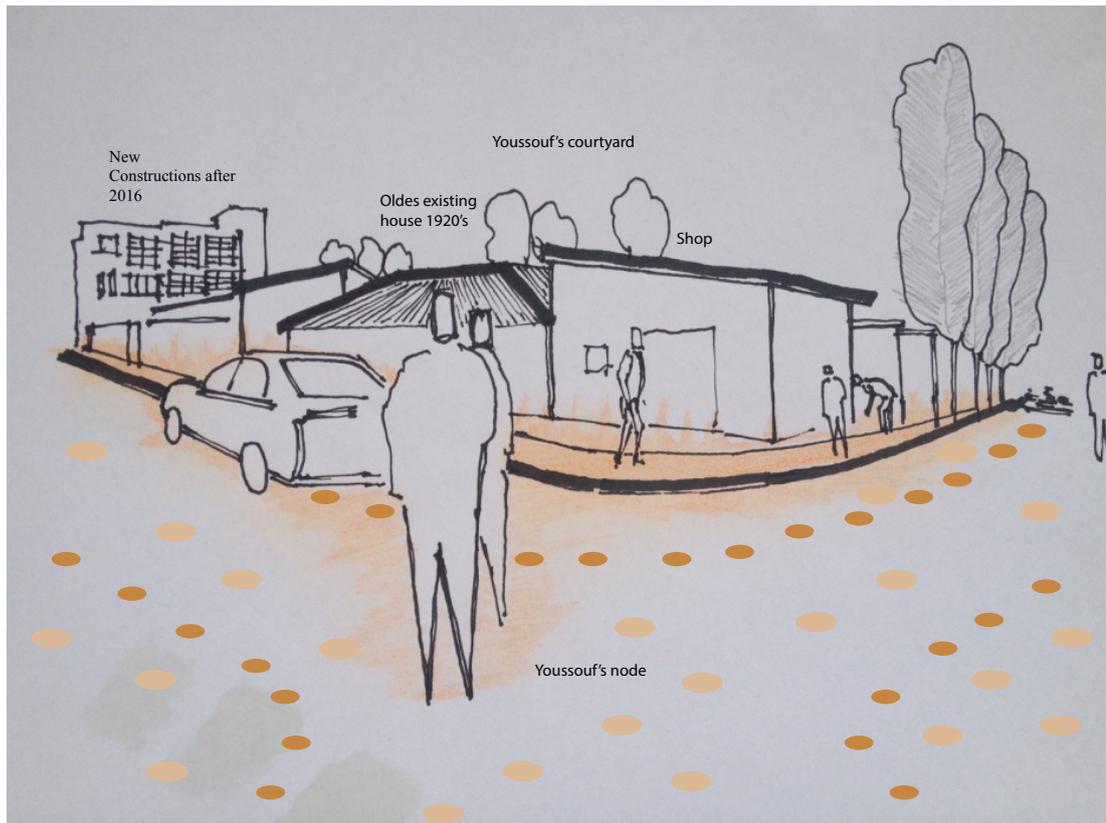


Figure 5.18: Urban structure and flow of people in YCN

Source: Author 2018

This transformative process of the YCN node therefore confirms that an urban open space with life is an integral part of the urban tissue.

5.3.2 UPOS (devoid of urban life) is like an isolated pool.

When an UPOS is devoid of urban life and its juxtaposition within the urban fabric is considered, then, from the perspective of the current study, it is an isolated pool, as illustrated in **Figure 5.19**.



Figure 5.19: UPOS like an isolated pool.

Source: Author, 2018

The immediate neighbourhood at the RC does not seem to enjoy an active interaction with the UPOS. The size of RC, compared to the adjacent urban fabric makes for a domineering and imposing aura in the neighbourhood. If one refers to the traditional setting, then the size difference should not be so fundamentally disadvantageous, but instead, should be an opportunity for the UPOS to accommodate more people and realise more social cohesion. However, due to the current, everyday operations and management of the RC, the researcher found a huge gap in the way that it relates to its adjacent neighbourhoods.

Wedding ceremonies, taking place at RC are by invitation and paradoxically create a situation where people from long travel distances are more likely to attend than those from the short distances. These ceremonies take place on Saturdays and this renders the RC idle or operating at a minimum during weekdays. This occasional use has further implication on the cost of hiring the venue, which is currently viewed as relatively expensive compared to other wedding facilities in Kigali. Additionally, RC

is located in a residential land use zone. Therefore, the absence of a mixed-use urban fabric in the area remains a challenge in supporting the liveability of the UPOS.

From this perspective, RC, is likened to an isolated pool, composed of stagnant water, implying that RC does not display active engagement with its surrounding area. The adjacent community and people commuting on the road, next to RC have not been given the opportunity to interact with the space, unless through a wedding invitation.

The chances for stagnant water to cause erosion and encroach into adjacent areas are non or minimal.. Occasionally, after a heavy downpour, the pool's banks may swell to impact the neighbouring areas. An isolated pool is at risk of drying up with time, if no further sustainable water inputs happen. As such, it remains an economic burden to the city.

From this perspective, as much as the RC is modern and upscale, it has not connected with the neighbourhood. Due to its restricted entry, by invitation only, it remains a place for only a selected group of users, for a duration of time - mainly Saturdays, hence during other weekdays, the UPOS has nil or minimum input in the urban economy.

As illustrated in **Figure 5.20**, the flow of people in RC seems to be mechanical in the sense that it is orthogonal to the designed parking and walkways and controlled by the entrances to the buildings on the compound.

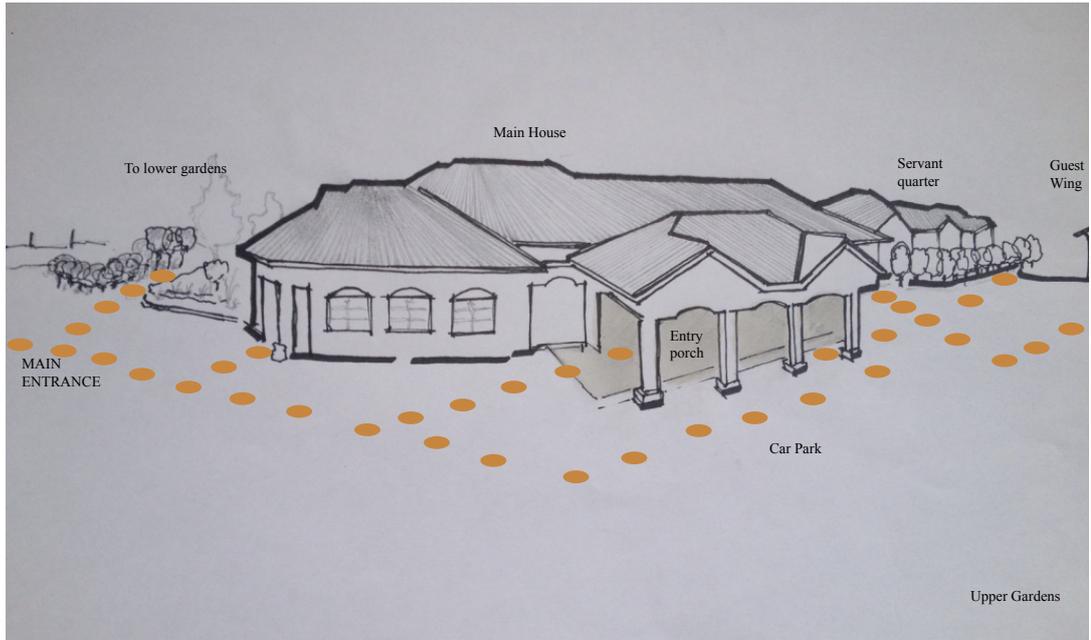


Figure 5.20: Urban structure and flow of people in YCN

Source: Author 2018

CHAPTER SIX

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a synthesis of the findings of the study, emphasising how the objectives of the study helped in arriving at the aim, which was to bring life into UPOS, by applying lessons from the Rwandese concept of *akarubanda*.

6.2 Description of the Study

The study set out to improve understanding of the concept of *akarubanda*, an interpretation of which can be applied to the planning and design of urban space in the contemporary city. The following questions provided guidance to the study:

- i. What are the physical and social components of traditional and contemporary UPOS in Rwanda?
- ii. How has UPOS been conceptualized and analysed in international literature and how can the same be analysed in a Rwandan context?
- iii. How do the physical and social components of *akarubanda* interrelate and what planning and design approaches can inform the provision of public open spaces in Kigali?
- iv. What guiding planning and design principles can be adapted from the concept of *akarubanda*, to aid in bringing life into contemporary UPOS in Rwanda?

The study was shaped by the assumption that ‘bringing life into urban public open space’ is catalysed by a favourable balance; between the physical and social dimensions of urban space. The researcher initially reviewed relevant theories of urban public open spaces in order to understand the components of the UPOS and their potential inter-relationships. Investigating both the physical and social dimensions of UPOS required theoretical and methodological frameworks; therefore

the study examined the ‘quality of life’ in the selected UPOS, by mapping activity patterns and recording users’ narratives and aspirations. The relationship between the selected UPOS and the adjacent areas was also investigated in order to measure the impact that has on the overall urban fabric.

6.3 Findings based on Research Objectives

This study, examined the extent to which the concept of akarubanda can inform the planning and design of urban space in the contemporary city of Kigali. The study employed a combined method in order to understand the importance of empirical knowledge on the actual use of traditional public open space, as well as in the review of urban public open space literature and research methodologies. This combination, resulted in theoretical and methodological frameworks for this study, and was applied to the selected UPOS in Kigali city, Rwanda.

Objective 1: To establish the status of traditional and contemporary public open spaces in Rwanda.

This objective helped the researcher to understand the historical and contemporary spatial and social values of public open space. By reviewing literature in chapter two, the researcher gathered essential knowledge about the topic of UPOS as well as insights into what research approach was more useful for investigation. Literature review examined various understandings and definitions of UPOS globally and in Rwanda. This researcher highlighted two design approaches in the provision of UPOS; the traditional and the contemporary.

RQ 1.1 What are the physical and social components of Rwandan Traditional POS?

The traditional approaches in the provision of UPOS were visible in the pre-colonial era, a period during which the system of kingdoms allowed the kings to have strong control over people’s activities. Strict adherence to natural laws and social principles were part of the driving concepts that ensured that the built environment remained

intact and valuable. The perception that UPOS belonged to everyone catalysed a sense of responsibility, which in turn made users keen to uphold socially acceptable ethics on the use of space. From this perspective, distinctive POS were developed. The front yard was public, was generally big, and used by all for celebrations and gatherings. The backyard, on the other hand, was semi-public, smaller, used by family and visitors as utility space for storage, cooking and laundry.

RQ 1.2 What are the physical and social dimensions of contemporary UPOS in Kigali?

In Rwanda today, the urban design and planning practice is no longer traditional. However, if one looks back to the concept of akarubanda, one sees a good reference point for picking the surrogates to study. Mapping of the same in the transformative and contemporary era of UPOS was based on a reference case study.

Contemporary UPOS design and planning principles such as considering climate, respecting pedestrian scale, relating spaces with functions, social values such as respect to personal space are all modern concepts that were strongly embedded in the traditional setting of Rwanda. For instance, the traditional planning principle of ‘natural law’ is what is today referred to as ‘environmental consideration’ and/or users’ responsibility and is viewed as equivalent to ‘public involvement’ and/or participatory processes of urban development. UPOS are no longer provided for, nor owned by users, indeed urban planning seems to have neglected or paid minimum attention to the domain of public open space due to the pressure of urbanisation.

Objective 2: To develop an analytical framework for studying public open space in Rwanda

This objective aimed at finding out how the physical conditions of POS is linked to its uses and meaning.

RQ 2.1 How has UPOS been conceptualized and analysed in international literature?

From literature reviews, the research found synergies and growing emphasis not only on the importance of UPOS but also the quality of the same. Evidently, UPOS contribute economic, social and environmental benefits to cities and citizens. This confirms the notion that the quality of UPOS is not only in the physical built environment but also the functional quality of the users' perception and activities in the space. This intertwines both the physical and social dimensions of UPOS. The literature review defined key concepts in both the physical and social dimensions of UPOS, and the social, economic and environmental influences of UPOS, and how people used the same; the review thus informed the analytical framework.

The social dimension included concepts that enhance social interaction, including familiarity with spaces, regularity of use and the availability of facilities that give purpose to visit a space and stay longer. The economic dimension included concepts that look at the space mechanisms which promote long term functions of the space and boost its economic contribution such as networking or integration of surrounding areas and transportation networks, booming businesses, vending, food and drink provision and mixed-use developments. The environmental dimension was concerned with concepts dealing with the overall appearance and comfort of the space and the way the physical environment influences uses through factors such as walkability, micro-climate, enclosure in terms of boundaries or edges, visual connectivity, human scale and landscape features.

This study focused on urban courtyards and their adjacent areas. YCN and RC were at different locations, scales and different in their design, layouts and functions. Both were used as UPOS, though at different timeframes. Whereas Youssouf's was used on a daily basis, RC was mainly busy over weekends due to wedding ceremonies. Traditionally, the concept of public space was highly valued and significantly influenced the built environment. The circular layout of courtyards later transformed

into orthogonal layouts, a version influenced by the orthogonal built form that is still visible in the native urban settlements in Biryogo. In 1907, Richard Kandt, a German and the first imperial president of Rwanda implemented a modified version of the rectangular courtyard in his residence at Muhima. Today, this building stands and is used as a museum of natural history. Henceforth, the rectangular layout has become the predominant form of UPOS in Kigali.

Even though there seems to be no formally designed and/or recognised public spaces in Kigali, the few informal ones used in this study, are increasingly being used to enhance the social life of residents, neighbours and citizens with various levels of success. This researcher argued that the provision of UPOS and good qualities of the same, therefore, are essential if 'brining life into UPOS' is to happen.

RQ 2.2 How can the concept of UPOS be analysed in a Rwandan context?

The analytical framework was designed to assess the empirical work using concepts derived from the literature review. The researcher examined how the built environment influences use of the space, the way users interact with the space and with each other and possibly, suggestions on how all these factors can be integrated in urban design and planning to bring life into UPOS.

The analytical framework was therefore classified into three tracks. First, were concepts focusing on the physical dimension of UPOS, and how the physical design could catalyse liveability of the space. Secondly, were concepts dealing with the social dimensions of UPOS, and how the user and users' experiences could bring more satisfaction into use of the spaces. Thirdly, were concepts generating pragmatic UPOS, and the effective urban design and planning tools that would create liveable spaces, full of life and social interaction. Intrinsically, the idea was how can we realise a UPOS that works?

Objective 3: To unpack the components of UPOS, their relationships and how they affect planning and design of the same.

This objective was to explore the overall socio-spatial mechanisms underlying the provision and use of POS.

RQ 3.1 How do the physical and social components of akarubanda interrelate?

In order for the researcher to comprehend how social and physical components of POS interrelate, an evaluation framework was developed by examining concepts for bringing life into UPOS. The findings demonstrated that urban design ought pay attention to the human scale since people and built environment are obviously related. It is practically impossible to see ‘urban space’ and not see ‘the people’. Therefore, Space is in itself a social context, just as equally, a social context would not be without a spatial component.

RQ 3.2 What planning and design approaches have developed around providing public open spaces in Kigali?

The concern on the quality of UPOS and its ability to attract and retain users is not a new one. As reviewed in the literature, the problematic designing of cities around roads, by modernist planners in the 19th century, led to a decline in the quality of public spaces in cities. Consequently, the voices of Jacobs (1961) and Whyte (1980) became more visible, advocating for better quality in urban space. The same have been continued by a growing list of researches, who are keen to see an improvement in the built environment through provision of quality public spaces. As a result, new policies and guideline for UPOS keep emerging. There is also crosscutting consensus that participatory approaches in planning and urban design are more sustainable.

The researcher found that people and their environment are interactively related and affect each other. Therefore, bringing life in UPOS succeeds when it is based on human factors, which largely involve the use and meaning of UPOS with concern on how people make social contacts with each other as well as relate to the place at various levels of interaction on a wide array of social activities.

Objective 4: To determine the extent to which the planning and design concepts of akarubanda can be integrated into contemporary urban development in Rwanda.

From the literature reviewed during this study, the researcher was able to draw lessons from the *Kibuga* of *Kabaka* in Uganda, originally the capital of the Buganda Kingdom, which later trajected into the current kampala city. The urban structure of Kampala still reveals an overwhelming influence of indigenou concepts of UPOS such as the radial and concentric streets and a city set in the natural environment. This precedent helped the researcher to disprove the common belief that the African city has developed following European planning concepts.

RQ 4.1 What guiding planning and design principles from the akarubanda concept can aid to bring life into contemporary UPOS in Rwanda?

This researcher examined the qualities of life, by using the case study of selected UPOS, and set methods. The physical dimension was assessed through urban design audit, mapping and visual assessment. The social dimension was assessed through observation, behavioural mapping and structured interviews.

From evaluation of RC, it was clear that the physical attractiveness of the space's appearance were highly taken care of, over the functional part. However, the location of the UPOS, being in the sub-urban area and within a residential land use, disadvantaged its evaluation and its scale and nature of operation made it disconnected from the neighbourhood. It also was evaluated as a spot for socio-economic segregation since users entered only by invitation, to attend wedding ceremonies, thus making the space dominated more by middle income users vis a vis the immediate, low income neighbourhood that feels unwelcome. An indication of this unwelcoming nature was evident by the sighting of children from the neighbourhood attempting to innovatively find their way in by climbing over the boundary walls.

The evaluation of YCN, located in Biryogo right next to Kigali city's CBD, revealed its location within a mixed-use urban fabric, which made the spaces a lot more connected to the neighbourhood. Environmental considerations such as lack shade from the sun, and poor sanitary provisions were the main drawbacks in the use of the space. Due to these challenges, the spaces failed to attract users and effectively retain the users to keep engaging with the space and with each other. There was consensus between both users and administrative officials who participated in the interviews.

The observations indicated a dominance of men over women, which was expected in the study of Biryogo, which is historically known for its Islamic influence. Even for the informal UPOS, users felt that the spaces contribute positively to the city structure. However, the spaces do not offer a wide choice of opportunities in recreational activities that would encourage more people to visit and even more people to stay longer.

Due to the low consideration of environmental factors, the spaces are used less at noon due to lack of shade and the shaded areas are used more throughout the day. There is also an imbalance in the participants' population using the case study spaces, by age or income in the case of Biryogo or family and work connections in the case of RC. The data analysed in chapter 4 presents the perception of users on the physical and functional quality of the case study UPOS.

RQ 4.2 what reflections would inspire future research in this topic?

This study, although based on a small number of case study spaces in Kigali, has resulted into findings suggesting that the chronological influences of urbanisation on UPOS is an interesting process worth future investigation. The evolution of Youssouf's courtyard alone, within a couple of months, has produced a vibrant node with very different yet close spaces surrounding it. The changes were still on-going by the time of completing this research.

Documents reviewed in chapter two and professionals and/or leaders interviewed in chapter four provided a clear gap, which informed the need to proceed further with this study. Reviewed literature and documents highlighted the need to explore further ways of bringing life into UPOS, whereas interviews with professionals/leaders provided a wide array of perceptions, perspectives and suggestions on the provision of future UPOS in Kigali.

The absence of public space in Kigali city reveals the limitations of modern planning systems, which seem to have bowed to the pressure of urbanisation and rather, focused on the future visions without an adequate reflection of the past and present. Traditionally, the POS was capable of meeting the needs of users and the concepts of UPOS in relation to religion, social life or environment are therefore capable of offering a good learning base. The current city seems to have lost a considerable part of its open spaces to new developments and real estate.

The research found that successful UPOS are not based on being traditional or modern, but rather the opportunity to critically evaluate and implement appropriate responses that suit the social, economic and environmental requirements of the end users and/or local communities.

To date, the planning systems in Kigali have a lot to learn from the traditional concepts and should be more innovative, applying modern/western concepts in their contemporary planning approach, in order to arrive at a win-win situation. There are clear design and planning concepts that are strongly embedded in the traditional approach, and the interpretation and implementation of which, would enhance the liveability of public open space in Kigali today, hence bringing life into UPOS.

6.4 Summary of key research findings

The study sought to develop ways to bring life into UPOS. As summarised in **Table 6.1**, the research revealed the following findings based on the study objectives:

Table 6.1: Key research findings.

Research Objective	VARIABLE	KEY FINDING
<i>1. To establish the status of traditional and contemporary public open spaces in Rwanda.</i>	Traditional public space	
	Physical dimensions	<ul style="list-style-type: none"> • Built environment remained intact • Were valuable • Adherence to nature • Had adherence to social principles • Were safe and secure • Were communally owned • Happened on big open space
	Social dimensions	<ul style="list-style-type: none"> • Were socially produced • Accessed and used by all and all times • Social responsibility characterized their use • Social values were respected • Ethics were upheld • Had adherence to existing legal framework
	Contemporary UPOS	
	Physical dimensions	<ul style="list-style-type: none"> • The built environment has sprawled and lost intactness • Less environmental considerations • Not to human scale • Have limited pedestrian design • Unrealistic zoning • Conflicting enforcement of urban policy • Lack of alignment of new infrastructure on the existing
	Social dimensions	<ul style="list-style-type: none"> • More Public-private produced, than socially produced.

		<ul style="list-style-type: none"> • Not all are accessible by all • Less social responsibility • Ethics and values diluted • Weak participatory approach
<i>2. To develop an analytical framework for studying public open space in Rwanda</i>	Physical dimensions	<ul style="list-style-type: none"> • Quality of space • Evolution of space • Liveability • Design and planning tools • Production of UPOS • Development of UPOS
	Social dimensions	<ul style="list-style-type: none"> • Importance of space • Activities • User perception • Social interaction • Availability of facilities • Use of UPOS • Meaning of UPOS
<i>3. To unpack the components of UPOS, their relationships and how they affect planning and design of the same</i>	Physical dimensions	<ul style="list-style-type: none"> • The site <ul style="list-style-type: none"> ➤ Comfort ➤ Access ➤ Function ➤ Maintenance • Good environment encourages more activities
	Social dimensions	<ul style="list-style-type: none"> • Sociability <ul style="list-style-type: none"> ➤ Presence of people ➤ Events/Festivals ➤ Social interaction ➤ Diversity • What attracts people most are other people
	Interrelationships	<ul style="list-style-type: none"> • SPATIAL +SOCIAL • Urban design audit • Visual assessment

		<ul style="list-style-type: none"> • Evolution model
<i>4. To determine the extent to which the planning and design concepts of akarubanda can be integrated into contemporary urban development in Rwanda</i>	Form, Image and Activities	Form = Planning Image = Use of space Activities = Culture
	Physical dimensions	<ul style="list-style-type: none"> • Provision of UPOS • Development of UPOS
	Social dimensions	<ul style="list-style-type: none"> • Use of UPOS • Meaning of UPOS

Source: Author, 2018

6.5 Study conclusions

Based on the study propositions, the study findings were expected to help lay people, designers, project developers and government, to acknowledge the influence of public open spaces on the quality of urban life, emphasizing on the integration of urban public open spaces' projects in the existing urban fabric of Kigali.

Bringing life into UPOS in Kigali and other cities in the region indeed should be a significant contribution to the physical, environmental social as well as economic factors of the city.

The improved physical qualities display and strengthen the identity of the place, which in turn attracts users and encourages them to stay longer. These qualities do not always have to be about new technology and/or modern materials. For instance, Biryogo as an ancient city where the first native housing in Kigali started to appear in the 1920's is composed of relatively old structures today. However, the respondents of the study confirmed that the urban courtyards, despite being old, make a good contribution to the character of Kigali city, which in turn attracts many people to the area.

Like in many cities undergoing rapid urbanisation, the environmental considerations are slowly disappearing. Most of the trees in former Biryogo have been cut down to pave way for new developments as illustrated in the transformative analysis. Developers have modified some of the building to incorporate new technology and modern materials. Nonetheless, basic environmental standards such as water and waste management remain largely underdeveloped. The researcher did not find much environmental awareness among the residents, except for *umuganda*, which is a monthly national cleaning event conducted in the immediate neighbourhoods to one's area of residence. The informality of the neighbourhood itself is a big challenge in the provision of infrastructure. For instance, less than 30 percent of buildings in Biryogo are accessible by car or motorbike making any incidences of evacuation or collection and removal of waste from the neighbourhood quite challenging.

Therefore, the overall study conclusions and recommendations were based on the analysis of the data collected from the selected case studies; concerned with bringing life into UPOS and combining physical and social dimensions in the design and planning processes. This combination indeed helped the study unpack various empirical insights, based on which further studies can be conducted to build on theory.

The study conclusions addressed the research questions set at the beginning of this study. The first study question on the status of traditional and contemporary UPOS in Rwanda was answered by the study unpacking the inclusivity of the traditional public space and the exclusivity of the contemporary UPOS.

The second question on how to analyse UPOS in Rwanda was answered by formulating an evolution model through which it was possible to clarify what was, what changed, what is and what UPOS ought to be. The researcher found that the

perception of UPOS varies according to age, gender, income and occupation. Different groups and carrying times were therefore studied to explain the different perceptions.

The most obvious finding emerging from this study was that the urban context of UPOS is significant in determining the quality of user engagement with the space. For instance, a mixed-use neighbourhood enhances the liveability of an UPOS. Another important finding from this study was that the success of UPOS is dependent on both physical and social dimensions. Therefore, it is not enough to just consider design; but rather, there should be efforts to consider uses and user activities that bring life to UPOS, promoting its liveability. UPOS may look good and well designed but that in itself is not enough to attract users to the space and to make them stay longer. More important is the need to gain an understanding and the addition of basic utilities and facilities which give the space more functional meaning hence catalysing its use.

The researcher concluded that the provision and planning of UPOS in Rwanda should be enhanced, in order to bring life into urban open spaces and achieve liveability of the space. It is true that rapid urbanisation has come with challenges but the inspiration for copying ambitious western models of master-planning, other than considering an intuitive reflection of historical trajectories of the same has created major design and planning challenges of UPOS.

6.6 Philosophy Statement

The absence of UPOS in Kigali city, like many other cities in the world, reveals the limitations of modern planning systems, which seem to have bowed to the pressure of urbanisation and focused on the future visions, driven by globalisation, and without an adequate reflection of the past and present.

UPOS remain significant elements in any city as they play an important role in the shaping of urban life in the city. Design and planning concepts of UPOS may have worked successfully elsewhere but it is not wise to directly apply the concepts in other cities based on their success elsewhere. It is more important to consider the local social, economic and environmental situations within the context of the provision of UPOS, which correspond to the contemporary uses and users' needs.

Successful UPOS in a city therefore, are not about it being traditional or modern, nor being indigenous or modernity-inspired, but rather, lies in the availability of an opportunity to critically evaluate the UPOS responses that suit the contextual social, economic and environmental requirements of the end users and/or local communities.

Traditional public spaces are relevant and useful to humanity, across time and generations. They are still a rich site for the transmission of societal values and a scene for building lasting social relationships.

Therefore, a deep understanding of the past, present and the transforming societal needs and cultural values is a substantial input to the provision of UPOS. In this perspective, there are relevant lessons from the concept of indigenous *akarubanda* that can be satisfactorily applied to bring life in contemporary UPOS in the contemporary city of Kigali and/or used to inform urban development of Kigali city and other cities in the region.

6.7 Limitations of the Study Findings

Given that this was a pioneer study of UPOS in Rwanda, there were insufficient references and previous studies and therefore, the study made many new decisions on the methods of data collection and analysis.

There were challenges in the process for collecting primary data. The anticipated FGDs could not happen due to challenges of the availability of respondents and venues for the discussions. The use of UPOS was so diverse that at times when the survey was on-going, more respondents, would flock in and those originally selected would be in need to leave. The YCN case study was a composition of restaurants and coffee areas, and it was difficult to achieve a serene setting for the discussions. The RC case study was also visited during wedding ceremonies, and therefore, the merry making and activities were not conducive for FDG. For the latter, a wedding ceremony happens only once in a lifetime, so it was not easy to find frequently recurring respondents. The researcher therefore, opted for key informant meetings.

The concepts of the various UPOS studied in the research were quite relative. Different people experience and perceive space differently based on their age, gender, income, occupation and more importantly, their cultural background.

The case studies selected were at a domestic scale and the findings may not reflect those of a case study at an urban scale. The reference case study and RC case were based on the class society of royalty and rich people, whereas the YNC case study was based on a typical ordinary public space within an informal settlement adjacent to the city.

The rapid evolution of case studies during the 3 years of study was not easy to capture. For instance, YCN alone had produced a vibrant node within a couple of months between October and December 2017, with very different, yet close spaces surrounding it. The change was so relevant to the study that it necessitated a recommendation to expand the case study frame beyond the courtyard to the urban node.

Formulating the questionnaire proved a constraint to the methodology and some questions kept on being amended until the end of the study. The random selection of

samples for interviews or questionnaires may also have skipped some important respondents. Further, the initial study had not planned to involve adjacent communities. It came as a recommendation from the study panel of advisors. This required the addition of more questions and sampling to find out how the UPOS related with the surrounding area. Reaching out to people who were not using the UPOS at the time of study was not easy.

6.8 Implications of Findings in Theory, methodology and Practice

The findings from this social research has contributed to the knowledge and theory of UPOS, to the methodology of how related studies could be conducted and to planning practice, by highlighting lessons that could inform the design and planning of contemporary UPOS.

6.8.1 Theoretical Implications

The literature reviewed on public urban open spaces provided theories of space, as well as the linkages between the spatial features and the use of the urban space. The principles behind the provision of urban spaces that are crosscutting were observed in the writings of key theorists in this field such as Canter (1977); Punter (1991); Montgomery (1998); Carmona (2010); Whyte (1980); Gehl (1987); Carmona et al. (2010) and Michelson (2011).

Exploring this theoretical background provided the researcher with an opportunity to explore the relationships between physical and social dimensions of space. The theoretical framework emphasized two dimensions of ‘space -making components’ namely physical setting and user activities. According to Carmona (2010), people’s activities in terms of engagement level are categorized into passive and active, whereas according to Gehl (1987), particular activity types and level of activity are determined by the conditions of the physical environment. This framework significantly informed the methods and tools of data collection; for example, the

activity mapping was carried out in relation to the physical settings of the UPOS under study.

6.8.2 Methodological Implications

In addition to the theoretical framework, this study took a selective methodological approach, emphasising on activity mapping as a key tool to unpack the relationships between the physical settings of UPOS and the activities that occur in the spaces. The study also employed the Photo Elicitation method during interviews, which helped to provoke the deep memories of respondents, and in turn catalysed rich conversations and interpretation of cultural elements that were useful for this kind of research.

To gain an in-depth understanding of the relationship between physical features and social activities within the space, the researcher utilised direct field observations (Whyte, 1980) and activity mapping (Itelson, Rivilin, & Prohansky, 1970) and Golcnik, (2011).

Post-field data was processed through CAD and ArcMap GIS software. The mapping of activities was carried out in respect to time, users' age, gender and income levels, as well as comparing activity type with the physical setting of the location and finally capturing users' narratives and perceptions of their experience in the UPOS and their aspirations of public space.

Even though mapping is an old method in studies of urban space, this current study, complemented the mapping, by digitalising the data using CAD, illustrator and sketch up software; this further aided the subsequent analysis and presentation of the data. This further made it possible to keep a common base map, on which several layers of data were embedded. This in itself created a database that was used as a reference for further study as well as to generate more analytical maps for related urban studies. It is therefore clear from the study findings that activity mapping

demonstrated the potential relationships between physical and social dimensions of space.

It is this empirical knowledge, arising from the examination on spatial-social relationships that give this study the fundamental potential to inform contemporary urban development. Methodologically, this study provides an empirical base to support a decision making process, a gap noted by urban researchers such as (Frick, 2007) and (Carmona, Tiesdell, Heath, & OC, 2010). By highlighting a promising example of how one can unpack the relationship between space and users, this study provided a rich insight on how empirical underpinnings can be applied in an actual design or planning of UPOS in the city.

6.8.3 *Planning practice Implications*

The study's problem statement was motivated by the absence of public open space in Kigali city. The study argued that the growing pressure on land in this era of rapid urbanisation, had displayed significant consequences leading to the inadequate provision or planning of UPOS in cities.

In order to bridge the gap, the researcher therefore made a reference to the traditional setting of *akarubanda*, and using selected UPOS in Kigali city, investigated the relationship between physical and social dimensions of the same. By using observation and activity mapping, the study found that the physical features of a UPOS influenced the kind of activities and vice versa.

The database generated in this study offers a reference for related urban studies that would easily inform decision-making by urban designers and planners. The study interpreted and illustrated the existing physical settings of selected UPOS in Kigali as well as the patterns of use, providing a reference for the actual use and patterns of use in the selected UPOS. Digitalising the data improved on the accuracy making it easier to make reference to it.

The combination of mixed research methods and analytical approaches further gave the researcher an opportunity to compare data and findings from the various methods, in a triangulation exercise, which ironed out any similarities or differences, making reference to the actual data collected. This is an equally important tool for urban designers and planners.

6.9 Recommendations

This study aimed at contributing new knowledge to the pressing issue of diminishing UPOS. The study constituted ground breaking research on the elements of UPOS as well as the historical and evolution and planning processes. The lack of previous empirical studies on this topic presented a limitation for the study. However, the new findings from the perceptions of people using the various POS has further highlighted the impact of modern planning and offered lessons applicable in the socio-cultural context of Rwanda.

The study brought fresh evidence from Traditional Rwanda and the current Kigali, with new insights, which contribute to international literature and knowledge on the on-going conversations of the liveability of UPOS.

The study therefore recommends that indigenous knowledge is relevant and timely not only for Rwanda but also the wider region; serving as an inspiration to the investigation into pressing urban issues including public space, as well as a source of knowledge to inform interventions to these urban challenges.

The study made a methodological contribution to academia by demonstrating the strength of the two-tier analytical framework, which can be easily applied to other similar studies, in the future.

The study recommends that public open spaces should offer opportunities to urban users to recreate and draw pleasure from their existence. As such, there is need to

create public open spaces that are dynamic and flexible enough to support diverse activities, to attract many users. In this line, the study has developed a practical approach of looking to the past as a move forward.

Based on the findings of this research, **Table 6.2** indicates a set of future recommendations formulated by the researcher towards better planning and provision of UPOS in Rwanda and the region.

Table 6.2: UPOS factors and recommended strategies.

UPOS FACTOR	RECOMMENDED STRATEGIES	OUTPUT- Policy on:
Physical	<ul style="list-style-type: none"> • Provide good imageability, enclosure, transparency and complexity. • Provide spaces that respect human scale • Provide spaces that reflect social and cultural values • Ensure both visual and physical accessibility • Provide a long term place keeping principles • Maintain high standards of users' facilities 	Good quality design
Environmental	<ul style="list-style-type: none"> • Ensure thermal comfort in the space e.g. softscape, plants, trees, water, • Ensure materials used are sustainable • Design the layout to enhance good ventilation, sun shading, sub-spaces, • Ensure adequate seating areas, shaded against weather elements • Provide safe walkways and paths, shaded against weather elements • Increased awareness on environmental and health issues • Promote public transport, cycling, walking. 	Consideration of local climate.
Social	<ul style="list-style-type: none"> • Involve the local community in the planning of UPOS, from initial stages. • Provide for security and safety in the design • Ensure the design is family friendly by promoting 	Provision of social needs

	<p>facilities for children, youth, women and elderly people.</p> <ul style="list-style-type: none"> • Provide design that respects the local social values e.g. appropriate personal distances between age/gender classes. 	
Economical	<ul style="list-style-type: none"> • Consider a mixed use fabric • Provision of a variety of leisure activities • Ensure provision of good quality food and drink services • Providing adequate lighting especially at night • Provide long-term management principles • Ensure involvement of local community 	Consideration of economic needs

Source: Author, 2018

6.10 Suggested Areas for Further Research

This study responded to the question of bringing life into UPOS, it further raised new questions for future investigation.

The study tackled a reference case study and two other urban case studies in Kigali. It would therefore be worth it, if many other case studies could be incorporated from both urban and rural Rwanda. This could help gather a wider pool of data especially on the social dimensions or people's perceptions on different types of POS.

In the process of analysing the data, this study highlighted both strengths and weaknesses in the provision and planning of UPOS in Rwanda. There are areas of improvement, in making UPOS more lively and vibrant.

Rwanda is no longer a traditional setting. Therefore, a deep understanding of emerging societal needs and values can be combined with their existing religious, social, cultural and environmental factors in order to achieve more balanced UPOS.

For instance, the planning of stadia and town in Rwanda could incorporate concepts from the literature reviewed and indigenous concepts of sports and play. Therefore even today, the planning systems in Kigali have a lot to learn from the traditional concept of UPOS and there is need to be more innovative when applying modern/western concepts.

Findings suggest that the chronological influences of Kigali's rapid urbanisation on UPOS, is an interesting process worth future investigation. In this perspective, the evolution model can be explored further to produce multi-scaled analysis and their findings could be applied as found relevant.

A study of the CBD urban courtyards would deliver more findings for an urban scale. This pioneer study scale was largely at neighbourhood scale, or 'micro' and could be upgraded to adjacent areas or district/municipality scale as the 'meso' scale, and eventually to the study of urban courtyards at city level as the 'macro' scale.

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APPENDICES

Appendix A: Questions for Pilot study

General questions about definition and Perception of public open space:

How do you define a public open space?

Have you been to an akarubanda setting (old)/ have you visited king's palace museum in Nyanza (youth)?

Do you think that public open space is an important part of the city? Why? Why not? If yes, to what degree (likert scale)

(4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree.)

1. Do you like to interact with people in UPOS/akarubanda? Why?
2. Given a choice, what kind of UPOS/akarubanda setting would you like to have? E.g open, outdoor, natural, closed, indoor, sheltered,
3. What kind of activities would you like to be involved in in UPOS/akarubanda?

Questions about Rwandan urban public open space: (discussion)

4. What can you tell me about Rwandan traditional public open space_ *akarubanda*?
5. What can you tell me about Rwandan new/contemporary public open space? Is it different from other parts of the world?
6. In Rwanda, has the meaning and importance of public open space changed with time? If yes, how?
7. In the design of public open spaces, is there any discussion (citizen participation) with the people supposed to use it?

Questions about urban public open space in Kigali:

8. Kigali city has a rapid development, in which way is the public open space

changing?

9. Describe a good example of a public open space in Kigali? What makes it a good example?
10. Do you know any bad (or less good) examples of public open space in Kigali? What is it that makes it a bad example?
11. I have observed four different urban public open space in Kigali, do you have any particular views on these places; IN PICTURES- *Youssouf's courtyard, Rwampara farmers' cooperative and Rujugiro compound (Rebero hill motel)*

Questions about Rwandan symbolism and *akarubanda* concept:

12. Do you believe that symbolism is an important part of the Rwandan culture?
13. What do you know about symbolism in *akarubanda*- Rwandan traditional public open space?
14. What role would *akarubanda's* symbolism/ the concept of *akarubanda* play in contemporary city planning?

Appendix B: Urban Design Audit Sheet

Guiding notes:

This **must** be done in the POS during the daytime. Please score each criterion in the following table from 1 to 5, where 1=very poor, 2=poor, 3=fair, 4=good and 5=very good. There is no right or wrong answer. Please choose the answer that represents **your opinion**.

Urban design audit	
Urban design features <i>(not limited to)</i>	score
Imageability. It assesses the memorable extent of the place. Imageability is measured by the evaluation of physical features such as courtyards and	
Enclosure. This evaluates the degree to which streets, buildings and	
Human scale. An assessment which indicates that the specific built environment in the place is in appropriate proportion to human scale and comfortable for the pedestrian. This is evaluated by measuring features such as the range of sidewalk planters, windows, doors and building	
Transparency: This concept measures where human activities in a public space are visible from the edge of the street. This is assessed by looking at the features which block transparency, such as walls, windows, doors, fences and landscaping. Although, a sense of enclosure is considerable and	
Complexity. This idea emphasizes visual variety. Although it could be claimed that complexity may result in clutter, the fact is complex places are more attractive, due to their element of surprise, irregularity and lack of sterility.	

Appendix C: Urban Design Audit _ Field work sheet

SPACE	CRITERIA	MEASURE	
		1-2-3-4-5	%
			
King's palace Museum (KPM)	Imageability: ' <i>urwibutso</i> '		
	Enclosure: ' <i>mu rugero</i> '		
	Human scale: ' <i>haringaniye</i> '		
	Transparency: ' <i>hagaragara</i> '		
	Complexity: ' <i>heza afite byose</i> '		
Yousouf's courtyard and node (YCN)	Imageability: ' <i>urwibutso</i> '		
	Enclosure: ' <i>mu rugero</i> '		
	Human scale: ' <i>haringaniye</i> '		
	Transparency: ' <i>hagaragara</i> '		
	Complexity: ' <i>heza afite byose</i> '		
Rujugiro's compound (RC)	Imageability: ' <i>urwibutso</i> '		
	Enclosure: ' <i>mu rugero</i> '		
	Human scale: ' <i>haringaniye</i> '		
	Transparency: ' <i>hagaragara</i> '		
	Complexity: ' <i>heza afite byose</i> '		

Name:

Occupation:

Date:

Appendix D: Visual assessment

Guiding notes:

Use the score sheet to **assess** the urban design in the following photographs.

Please score each criterion from 1 to 5, where 1=very poor, 2=poor, 3=fair, 4=good and 5=very good.

There is no right or wrong answer. Please choose the answer, which represents **your opinion**.

Evaluation elements	Score
<p>Colour contrast:</p> <ul style="list-style-type: none"> -hue (red, blue, etc.), -value (lightness or darkness), -chroma (saturation). 	
<p>Form contrast</p> <ul style="list-style-type: none"> -geometry (square, triangle, circle, etc.), -complexity (simplicity/regularity vs. complexity/irregularity) -orientation (relation to horizontal or to points of compass) 	
<p>Line contrast:</p> <ul style="list-style-type: none"> -boldness (visual strength), -complexity, -orientation (relation to horizontal or to points of compass). 	
<p>Texture contrast:</p> <ul style="list-style-type: none"> - grain (scale of sub elements from coarse to fine), -density (spacing of elements), -regularity (distribution, evenness), -internal contrast (e.g. in colour). 	

<p>Scale contrast:</p> <ul style="list-style-type: none"> -proportion of landscape setting (how big an object is relative to the entire visible setting), -scale contrast (relative size of different objects), -proportion of field-of-view (related to field of view of a camera or human eye) 	
<p>Scale domination score:</p> <p>How dominant a feature is, from dominant to insignificant.</p>	
<p>Spatial domination score: a combination of:</p> <ul style="list-style-type: none"> -Spatial composition: landscape composition (is it panoramic, enclosed, with a distinctive feature, a clear focal point, or canopied) -Spatial position: the prominence of an element as a result of its elevation 	

Appendix E: Observation sheet

<p>Location:</p> <p>Date: dd/mm/yy</p> <p>Time: at morning, afternoon and evening</p>	
<p>Observation</p>	<p>Observer's comments (field diary)</p>
<p>Location:</p> <p>Write about where I'm sitting.</p> <p>Weather:</p> <p>Describing the weather.</p> <p>People and activities:</p> <p>Record people's behavior, action, body language and interactions. Sketch the activities and movement on the map. Focus on how people move around</p> <p>Walking, playing, sitting, cycling, sporting,</p>	
<p>Number and group of users:</p> <p>Count no. of users' gender, age (children, adult, elderly)</p>	

Appendix F: Questionnaire A

You are invited to participate in a study exploring ‘Bringing Life into Urban Public Open Space: Lessons from The Rwandese *‘akarubanda’* Concept.’ This study will be conducted by me (Josephine Mwangeli Malonza), as a doctoral student at the School of Built Environment, University of Nairobi. The results of this study will contribute to my dissertation, in fulfillment of a doctorate degree. I intend to focus the investigation on the urban public open spaces in Kigali; more specifically *YCN in Biryogo and RC in Gikondo*. The conclusions drawn from this research will offer a significant and comprehensive insight into enhancing our contemporary urban public open spaces. The questionnaire intends to explore your personal view on POS in Kigali. Your participation is voluntary. Your comments will help me to understand and evaluate the assessment process. All data collected through questionnaires will be highly confidential, and will not be used in any way but for the purposes of the study.

Yours truly, Josephine Mwangeli Malonza.

Part A: about the location

A1. What is the name of the Urban Public Open Space (UPOS)?

a. King’s Palace museum		b. Youssouf’s courtyard	
c. Youssouf’s node Biryogo		d. Rujugiro’s compound	

Part B: about your visit

B1. How often do you visit this POS?

a. first time (go to part C)		b. every day		c. a couple of times a week	
d. a couple of times a month		e. a couple of times a year		f. once a year or less	

B2. At what time of year would you normally visit this POS?

a. rainy season		b. dry season	
-----------------	--	---------------	--

B3. When would you normally visit this POS?

a. weekdays		b. weekends	
-------------	--	-------------	--

B4. When you visit the POS, where do you usually travel from?

a. home		b. work		c. shops	
d. hotel		e. tour visit		f. School/ college/university	
g. other					

B5. How would you normally travel to this POS?

a. on foot		b. bicycle		c. motorbike	
d. guided tour		e. bus		f. taxi	
g. private car		h. other			

B6. Approximately how long does your normal journey take?

a. less than 5		b. 5-10 minutes		c. 10-15 minutes	
d. 15-20 minutes		e. 20-30 minutes		f. more than 30 minutes	

B7. Who would you normally visit this POS with?

a. alone (go straight to question B9)		b. in a group		c. both equally	
--	--	---------------	--	-----------------	--

B8. When you visit the POS as part of a group, who would you normally visit with?

a. partner		b. children		c. family	
d. friends		e. tourist group		f. team/club	
g. school group		h. too varied to say		i. other	

B9. For what reasons do you normally visit the POS? (**Please tick up to five main reasons**)

a. Enjoy the beauty of the place		b. Relax, refresh, fresh air		c. Food/drink	
d. Attend event/ceremony		e. Watch or play traditional games		f. Watch or play modern games	
g. Children/family outing		h. Meeting/ organized study visit		i. Pass through/ take a shortcut	
j. Take photos		k. Shopping		l.	
m. other 1.					
m. other 2.					

Part C: about the POS

Question						
C1. What is your overall impression of the POS?	1	2	3	4	5	?

C2. How would you rate the design and appearance of the POS?	1	2	3	4	5	?
C3. To what extent do you think this POS is a landmark, which contributes to the urban character of the city?	1	2	3	4	5	?
C4. What do you think about the range of visitor facilities that are available?	1	2	3	4	5	?
C5. How easy it is for you to get into this POS?	1	2	3	4	5	?
C6. To what extent do you find this POS is integrated with the surrounding amenities?	1	2	3	4	5	?
C8. To what extent do you think the POS is designed to fit the climate?	1	2	3	4	5	?
C9. How would you rate the standard of cleanliness and maintenance of the POS?	1	2	3	4	5	?
C10. To what extent do you think this POS contributes to the commercial activities around it?	1	2	3	4	5	?
C11. To what extent do you think this POS is provided mainly to please the authorities?	1	2	3	4	5	?
C12. To what extent do you think this POS meets your needs?	1	2	3	4	5	?
C13. To what extent do you find this POS enjoyable?	1	2	3	4	5	?
C14. To what extent do you think you can participate in social and cultural events at this POS?	1	2	3	4	5	?

Question	Opinion			Comment
	Yes	No	don't know	
C15. Is there anything that would encourage you to use the POS more often, or to stay for longer?				

C16. Do you think that the authority bodies have involved the public in providing this POS?	Yes	No	don't know	
C17. Does the POS' size/ quality make you travel to use it? (Regardless of where you live, work or study in the city.)	Yes	No	don't know	

Part D: about you

D1. Which of the following best describes you?

a. Resident of Rwanda		b. Tourist (go straight to question D5)	
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D2. In which area of Rwanda do you live?

a. Resident in this local authority/village		b. Resident outside this local authority/village	
---	--	--	--

D3. Prior to taking part in this survey, have you ever been consulted on the way public open spaces are provided? Or asked if you would like to be involved? (E.g. visitor survey, comment card, exhibition, public meeting etc.)

a. yes		b. no	
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D4. Would you like to be consulted or involved in the way that public open spaces are provided?

a. yes		b. no	
--------	--	-------	--

D5. What is your nationality?

a. Rwandan		b. Non-Rwandan (please specify).....	
------------	--	---	--

D6. How long you have been in Kigali?

a. less than a week		b. 1-2 weeks		c. 3-4 weeks	
d. 1-6 months		e. 6-12 months		f. 1-5 years	
g. 6-10 years		h. 11-20 years		i. over 20 years	

D7. Which of the following best describes your most recent academic qualification?

a. high school		b. high school		c. technical institution	
d. college		e. university		f. post-graduate	

D8. Which of the following best describes your employment status?

a. student		b. government officer	
c. private sector employee		d. self employed	
e. unemployed		f. retired.	

D9. Which of the following best describes your age?

a. under 15		b. 15-19		c. 20-29		d. 30-39	
e. 40-49		f. 50-64		g. 65 and over			

D10. Which of the following best describes your monthly income? In Frw

a. less than 100,000 Frw		b. 100,000- 300,000		c. more than 300,000	
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D11. What is your gender?

a. Female		b. Male	
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Appendix G: Questionnaire B

Information about the study

This questionnaire is a part of my PhD thesis work at the school of Architecture and building science, University of Nairobi Kenya.

The aim of my study is to analyze the traditional public open space (*akarubanda*) in Nyanza, Rwanda and the urban public open space in Kigali city,; how the spaces are formed and developed- (physical dimensions), how the spaces are used- (social dimensions) and how Rwandan symbolism and the concept of *akarubanda* could be used to improve urban planning and development in order to bring life into urban public spaces in the contemporary city.

I have made some observations on different public open spaces and my expectation is that interviews and this questionnaire will serve as a complement to these observations.

To participate in the study is voluntarily and it is not necessary to answer all questions. Everyone has the right to stay anonymous and choose not to be quoted from.

If you have any questions, do not hesitate to contact me.

The Questionnaire

Name:

Age:

Profession:

Briefly describe what kind of projects you work on:

About public open space in general:

1. How do you define a public open space?

2. Have you been to an akarubanda setting (old)/ have you visited king's palace museum in Nyanza (youth)?
 3. Do you think that public open space is an important part of the city? Why? Why not? If yes, to what degree (likert scale)
 4. Do you like to interact with people in UPOS/akarubanda?
 5. Given a choice, what kind of UPOS/akarubanda setting would you like to have?
 6. What kind of activities would you like to be involved in in UPOS/akarubanda
 7. Kigali city is rapidly developing, in which way is the public open space changing?
 8. Describe a good example of a public open space in Kigali. What makes it a good example?
 9. Do you know any bad (or less good) examples of public open space in Kigali? What is it that makes it a bad example?
 10. I have observed 4 different public open space in Kigali, do you have any particular views on some of these places; IN PICTURES- Youssouf's courtyard, Rwampara farmers' cooperative and Rujugiro compound (Rebero hill motel)
- *By symbols I mean Rwandan symbolism like myths, animals, numbers, shapes, monuments, cardinal directions etc.
11. Do you believe that symbolism is an important part of the Rwandan culture
 12. What role does symbolism play in contemporary city planning? Is it used in the planning and development of the public open space in Rwanda?
 13. What role does the concept of *akarubanda* play in Rwanda's contemporary city planning?

Appendix H: semi-structured Interview questions

Informed consent

You are invited to participate in a study exploring ‘Bringing Life into Urban Public Open Space: Lessons from The Rwandese *‘akarubanda’* Concept.’ This study will be conducted by me (Josephine Mwangeli Malonza), as a doctoral student at the School of Built Environment, University of Nairobi. The results of this study will contribute to my dissertation, in partial fulfilment of a doctorate degree.

I intend to focus the investigation on the urban public open spaces in Kigali; more specifically Youssouf’s courtyard Biryogo and RC. The conclusions drawn from this research will offer a significant and comprehensive insight into enhancing our contemporary urban public open spaces. The study will also develop practical policy recommendations, which could influence the future planning and urban design practice in Kigali, Rwanda and the region.

The questionnaire intends to explore your personal view on POS in Kigali. Your participation is voluntary. Your comments will help me to understand and evaluate the assessment process. All data collected through questionnaires will be highly confidential, and will not be used in any way but for the purposes of the study.

Through this interview, I intend to explore your personal view on urban public open spaces in Kigali. Your participation in this study is voluntary. Consenting to participate in this study entails being interviewed for approximately 30 minutes. This interview will be highly considered and will participate in understanding and evaluating the research assessment process.

All data collected through the interview will be highly confidential and will not be used in any way but for the purposes of the study. Also, all participants will be anonymous and coded using numbers or pseudonyms when referred to in reporting and analysing the data. Your help will be highly appreciated and I will be glad to

send you the research results, if you are interested.

Yours sincerely,

Josephine Mwongeli Malonza,

+250788625651

josemwongeli@yahoo.com

TRADITIONAL POS

History (Hi)

- Hi.1. From your knowledge, where was the first '*akarubanda*' in Rwanda?
- Hi.2. What were the function and the purpose of '*akarubanda*' in Rwanda in the past?
- Hi.3. How did '*akarubanda*'/UPOS in the urban areas evolve during history?
- Hi.4. Could you explain to me why there are no more traditional '*akarubanda*' in the modern urban areas and cities in Rwanda? And existing ones are informal?

CONTEMPORARY POS

Contemporary understanding (CU)

- CU.1. How do you defined/view public open spaces in Kigali today?
- CU.2. What is the difference between public space and social space in Kigali?
- CU.3. Could you clarify why lively UPOS tend to be located in the ancient part of the city?
- CU.4. What are the function and the purpose of UPOS in Kigali today?
- CU.5. In your opinion, to what extent do you think UPOS in Kigali differ from those in other cities you may have visited/or aware of in terms of meaning and purpose?

IMPORTANCE OF POS

Importance (Im)

- Im.1. To what extent you think urban public open spaces make a major contribution to the setting, character, structure and the environmental quality of the city?
- Im.2. From your observation, how effectively do you see urban public open spaces used in Kigali?
- Im.3. How does the planning system reflect the importance of urban public open spaces, particularly courtyards?

PHYSICAL FACTORS

Design of UPOS (De)

- De.1. To what extent does the design of UPOS in Kigali consider the local culture?
- De.2. How do you find those spaces in terms of standard of cleanliness and maintenance?
- De.3. To what extent you think that urban design provides liveable space in each case study?
- De.4. To what extent do you think that the current UPOS in Kigali are well fulfilling the concepts of walkability and pedestrianization?
- De.5. How did urbanisation and growth influence the contemporary design concept of the city, especially its UPOS?
- De.6. To what extent you think that community needs were taken in consideration in designing/providing UPOS?
- De.7. How did the planning system consider quality in designing UPOS in Kigali?

Planning of UPOS (PI)

- Pl.1. How has the planning practice, in your opinion, affected the use and changes in each of the case studies in providing liveable UPOS?
- Pl.2. How does the planning process support the provision of urban public open spaces, focusing on the case studies spaces?
- Pl.3. How does the planning and urban design deliver liveability in the case study spaces?

- Pl.4. To what extent you find UPOS well distributed in the city?
- Pl.5. How successful do you see the integration between planning and urban design in providing liveable UPOS in Kigali?
- Pl.6. To what extent do you think that the location and the surrounding context of those UPOS help in encouraging people to use and enjoy them?
- Pl.7. To what extent have authorities and administrative bodies involved the community in the planning process of those places?
- Pl.8. How do the authorities and administrative bodies meet the community needs in providing those spaces?
- Pl.9. What are the strategies, policies and legislation in the planning system that governs the provision of urban public open spaces and in the specific UPOS in Kigali?

ENVIRONMENTAL FACTORS

Environmental Value (En)

- En1. To what extent you think the design of UPOS in Kigali shows good consideration of the environmental issues?
- En2. How do the current designs of UPOS in Kigali integrate the built and the natural environment?
- En3. How does the planning system in Kigali consider environmental values in providing UPOS?

SOCIAL FACTORS

Social Use Aspect (SU)

- SU.1. How do you think the location of the current UPOS in Kigali encourage the public to use them?
- SU.2. To what extent do you think people enjoy using those UPOS in Kigali?
- SU.3. How do you think the urban design of UPOS in Kigali encourages the public to host celebrations or social events?

- SU.4. To what extent you think that people from all community groups are using UPOS in Kigali?
- SU.5. To what extent you think that people in the surrounding community are using those spaces?
- SU.6. How far is the community satisfied with UPOS in Kigali?
- SU.7. Could you reflect, on behalf of the community, why you think people who are not using those spaces are not using them?
- SU.8. How did the planning system consider social values in providing UPOS in Kigali?

ECONOMICAL FACTORS

Economic Value (EV)

- EV.1. To what extent do the commercial factors influence shaping contemporary UPOS in Kigali?
- EV.2. To what extent do the UPOS contribute to the recreational resources of the city as a whole?
- EV.3. To what extent do the UPOS affect the commercial activities in their surrounding areas and the whole economic situation in the city?
- EV.4. What is the influence of the private sector in making the usage of those UPOS flourish?
- EV.5. To what extent does the planning system support the economic factors in providing UPOS?

OTHERS

Recommendations (R)

- R.1. How do you think urban public open spaces and the specific case study UPOS in Kigali can be improved?

Appendix I: Sample questions for key informant interviews

OBJECTIVE	RESEARCH QUESTION	Key Informants	Data sampling techniques	Sample of questions
1. To establish the status of traditional and contemporary public open spaces in Rwanda.	RQ 1.1 What were the physical and social components of <i>akarubanda</i> ? RQ 1.2 What are the physical and social dimensions of contemporary UPOS in Kigali?	4 old people over 70years old (Youssouf, Kanubi, Kabera, Murenzi..) 4 urban planners at city of Kigali (Fred, Enan, Abias, Solange)	Key informants meetings- independently or 2,3 together. Observation of the physical condition of the case studied	How <i>akarubanda</i> was constituted?- what place elements existed? What activities happened there? Why the components (physical/social) are reason for preference of visit
2. To develop an analytical framework for studying public open space in Rwanda.	RQ 2.1 How has POS has been conceptualized and analyzed in international literature? RQ 2.2 How can the concept of POS be analyzed in a Rwandan context?	LR Previous and related studies		
3. To understand the factors and relationships of POS and how they affect	RQ 3.1 How do these physical and social components of <i>akarubanda</i> interrelate? RQ 3.2 What	2 Academic staff members at UR with urban design and urban planning expertise.		According to them, which level of sense of place do they

planning and design of the same.	planning and design approaches have developed around providing public open spaces in Kigali?	4 urban planners at city of Kigali		feel? Expect? Which level of sense of place do they plan for?
4. To determine the extent to which <i>akarubanda</i> concepts can be integrated into contemporary urban planning.	RQ 4.1 What guiding planning and design principles from the <i>akarubanda</i> concept can aid to bring life into contemporary UPOS in Rwanda? RQ 4.2 what reflections would inspire future research			

Appendix J: Research iconography

	ICON	MEANING	
		Family	
		Wedding	
		Sports	
		Music	
		Sitting	
		Socializing	
		Gathering/meeting	
		Gathering/meeting	

	Traditional dance <i>intore</i>	
	Dancing	
	Play-kids	
	Play -adults	
	Merry	
	Drinking	
	Festival	
		

	 <p>Passing by</p>	 <p>Coming to eat/drink</p>	 <p>Coming to stay</p>
	 <p>Happy</p>	 <p>Relaxed</p>	 <p>Merry</p>

GLOSSARY

Glossary of *ikinyanywanda*/ local dialect terms

<i>Ahantu Rusange</i>	Public space
<i>Akarubanda</i>	space for people
<i>Akayira</i>	Small pathway
<i>Guhingirana</i>	Farming together
<i>Ibwami</i>	Palace
<i>Igikari</i>	Backyard
<i>Igishanga</i>	Wetland
<i>Ihuriro</i>	Meeting area/ junction
<i>Ikibumbiro</i>	Cow well
<i>Ikinyarwanda</i>	Rwanda's local language
<i>Imanga</i>	Slope
<i>Imbuga</i>	Courtyard
<i>Imbuga ngari</i>	Big Courtyard/ Large open space
<i>Inzira</i>	pathway
<i>Irembo</i>	Entrance
<i>Isambu</i>	Farmland
<i>Kw'irembo</i>	Front yard
<i>Ubusitani</i>	Garden
<i>Umuharuro</i>	Street
<i>Umutware</i>	Rich person
<i>Gacaca</i>	This is the traditional reconciliatory justice system at the local level, which has been adopted by the GoR to handle some categories of genocide prosecutions.
<i>Umudugudu</i>	Village. The boundaries of <i>umudugudu</i> have been administratively defined and do not necessarily correspond to "traditional" villages. This is the smallest administrative unit in Rwanda.

Nyumba Kumi

Before 2006, the *nyumba kumi* were non-salaried community leaders elected to represent a group of ten households, including their own.