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COLLEGE OF ARCHITECTURE AND ENGINEERING

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BDS 413: PROJECT PAPER

(Interior design specialization)

**KAMBA MASK PATTERNS AND RECYCLING IN THE CREATION OF AESTHETIC
RESTAURANT INTERIORS, NAIROBI KENYA**

(A case study of Katanazi Restaurant, Kilimani)

A RESEARCH PAPER PRESENTED BY:

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Project paper submitted in partial fulfillment of the requirement for the Bachelor of Art in Design Degree submitted to the school of the Arts and Design, University of Nairobi.

9TH NOVEMBER, 2019

DECLARATION

I Olpha Nyamoita Mabuka hereby declare that the project work entitled Kamba mask patterns and Recycling in the creation of aesthetic restaurant interiors, Nairobi Kenya is a project report of the work done by me under the guidance of my supervisor Dr. Michael Munene.

The project is submitted in partial fulfilment for the School of Arts & Design. The result embodied in this thesis have not been submitted to any other school or institution.

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Signature..... Date.....

DEDICATION

This project paper is mostly dedicated to Almighty God for the education opportunity and good health that has kept me running through this entire work.

Dedication of this paper also goes to my loving parents, Mr./Mrs. Charles and Doricah Mabuka my siblings, my fellow classmates and friends for their prayers, love and support. They have been there to offer moral support during this entire project. Through them I have been able to have self-belief and work smart towards achieving the desired goal.

Thank you for always being there for me. My God bless you.

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Above all, I acknowledge the Almighty God for the knowledge, strength and guidance He has offered me throughout my years of study.

ABSTRACT

This paper seeks to establish the application of recyclable materials and inspiration from the African cultural elements (Kamba mask patterns) towards creating aesthetic sustainable spaces for the restaurant management industry in Kenya. This research examines the ability to promote the African culture by coming up with cultural inspired sustainable design spaces. Recommended approaches include using of locally available materials and at the same time achieving the concept of customer satisfaction, loyalty and health. (MCLENNAN 2004) defines sustainability as Part of the problem is that the term sustainable design which is wholly inadequate to describe the movement and philosophy behind it. Therefore, the definition sustainability is viewed by the researcher as a technical term in the face of problem solution. Knowing what kind of relationship, we want to have with the global and local environment is the first consideration. It is important to address on how to achieve this relationship.

This paper will be divided into five chapters. In this the first chapter will describe the introduction and background leading to the study, problem statement, objectives resulting into research questions, significance of the study to the design industry and scope of the research. Chapter two will entail a critical depth analysis based of the two different philosophies; a theoretical literature on sustainability and African design, in detail it explains how over the years' design has changed and different designers are adapting and embracing the transformation. Chapter three will outline the research design to be adopted by the researcher, methodology used in data collection, analyze and present data to the study. Chapter four breaks down the findings of the collected data, analyzation and presentation of Katanazi Bar and Restaurant- the case study to this research. Lastly chapter five which will document the researcher's summary of findings preferred recommendations on the four areas of interior design for the bar and restaurant with regard to the previously employed techniques by renowned designers in the field of sustainable design, and how African culture impacts the profession.

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DEFINITIONS OF TERMS

Culture: A pattern that signifies human activity manifested by the arts, music, sculpture, theatre, dance, film, fashion, design, food and architecture (Carlson, 2011).

Pattern: In this proposed study pattern will refer to a regular arrangement of lines, shapes, colors as a design on materials and objects (Oxford learners Dictionaries).

Color: In this study the term color refers to the property possessed by an object of producing different sensations on the eye as a result of the way the object reflects or emits light.

Sustainable design: Sustainable design (also called environmental design, environmentally sustainable design, environmentally conscious design) is the philosophy of designing physical objects, the built environment, and services to comply with the principles of social, economic, and ecological sustainability(McLennan,2004).

Re-use: Using product again after it has been used. In contrast to recycling reuse is the breaking down of the used item into raw materials which are used to make new items (Wikipedia, the free encyclopedia) or buying and selling whole used items, possibly after washing or minor repair (other terms used, particularly in the construction sector).

Recycle: Recycling is a process to change waste materials into new products to prevent waste of potentially useful materials, reduce the consumption of fresh raw materials, reduce energy usage, reduce air pollution (from incineration) and water pollution (from landfill) by reducing the need for "conventional" waste disposal, and lower greenhouse gas emissions as compared to plastic production (Lyons & Burford,1993).

CHAPTER ONE

1.0 INTRODUCTION OF THE STUDY

Under this chapter design research has been expansively discussed with regards to the proposed study. The problem statement, research objectives and questions that the study investigates have been clearly outlined. In addition, it has also provided a justification for the type of research that the researcher embarked on as well as outlining the significance of the study. Terminologies that have been used with regards to the study have also been defined. This research concentrated on design as a medium through which expression of intrinsic Kamba mask patterns can be applied to improve the expression of culture in bars and restaurants in Kenya.

1.1 INTRODUCTION

Sustainable design is gaining popularity in the whole universe because its aim has now evolved to creating a sustainably designed environment for all. Sustainable design has been applied in enacting laws on building codes to improve environment in public spaces. Design is a problem solving activity where problems like the use of spaces concerning the interior spaces and landscape spaces of any environment are put into consideration when solving the problem: Interior design is an art in which creativity and technology works together to accumulate a well-defined interior environment. To achieve this, the designer has to apply both the elements and principles of design like colors, value, harmony, balance (symmetry) and unity to come up with one appealing space i.e. in my case will use the Kamba mask patterns. The first thing most users of a certain space look at is the color of the walls, so the designer is supposed to select materials considering the space he/she is designing. In addition to this interior designer has to consider the impact his/her design will have on the environment. The designer is supposed to use materials, which are eco-friendly and have less impact on the environment during the lifespan of the space (building).

The appreciation of African culture is a vast and diverse discussion. Interior designers can help to impact this sustainable movement through the appropriate selection of interior finish materials, use of modified techniques and processes which both meets the needs of our client and support

this sustainable commitment of change. This study is aimed to highlight for designers the important elements to consider, in the merge of both African inspired design with sustainability when evaluating the different sets of materials to designing a restaurant, with consideration to all interior design aspects. In addition, it is meant to provide a framework for using the correct evaluation tools and evaluate practical applications to good use. African inspired trends in interior design has been popular for a number of years. The vivid colors combined with earthy tones form the basis of this particular style. Further details such as animal prints, color patterns, virtual masks, wooden figures and print motifs further emphasize the splendor of the black continent and give space to the mystical note. The recipe for this type of decoration style is very simple. Inside the desired interior space, acknowledge the warmth of the sun and sand, but also the wealth of fauna and flora; basically the environment in general. However, the simplest version of the African inspired interior can be done with minimal cost to the budget. In collaboration with aspects of eco-design, by mimicking the lifecycles of nature it should be fundamental concept in achieving a truly circular economy. It involves taking into consideration the environment impact of the materials, resources, and end-of-life scenarios at the front end of a design project, and making choices that reduce the product of the environment. This research concentrated on design as a medium through which expression of intrinsic Kamba mask patterns can be applied to improve the expression of culture in bars and restaurants in Kenya.

In this research the main goal will be re-modeling an already existing restaurant space (indoor and outdoor areas) into comfortable and sustainable space where customers will find it more appealing and even like to spend longer time having their meals. The materials to be used are locally available, mostly from Kamba land like the sisal, clay and natural slate (stones), which are easy to acquire instead of importing them. I will also use sustainable materials, that is the recyclable materials. This will create a restaurant which is sustainable and pose less or no impacts to the environment (sustainable design) also beauty will be added by integrating Kamba mask patterns in the design. Design through the Twelve (12) Principles of Green Engineering (Anastasi/Zimmerman, 2003) - Designers need to strive to ensure that all material and energy

inputs and outputs are as inherently non-hazardous as possible or preventing waste is better than treating or cleaning it up after it is formed.

However, the evaluation pertaining to all the aspects of interior design, (landscaping, furniture, exhibition, and interior furnishing), choice of the materials can be challenging. Education in the field and credible, non-biased referenced resources are needed to guide designers in this task (Malin and Wilson, 1997). This study will help in identifying the different raw materials, finishing, processes that are both cost effective based on the criteria of coming up with appealing designs, that show appreciation of African design and sustainability, especially on the restaurant division of the hospitality and management industry

1.2 Background to the problem

The elements of culture such as art that bring and show differences and diversities among the many numerous cultures have been fundamentally weakened. Mass globalization, migrating global economies and acculturation have led to cultural fusion over a long period of time undermining independent cultural identities. Designers in a desperate move to produce and a lack of knowledge and research as to the origins of elements of culture such as arts and literature have come up with interior and exterior spaces and products that lack true connectedness and spirit of space. There is a struggle for a clear sense of definition in restaurants and bars. Therefore, the need to stop relying on globally imported cultural criteria to a more specific locally based cultural independence where we can derive from the abundance of intrinsic traditions to express and promote authentic elements of culture, such as the arts, in retreat spaces through the medium of design.

The most creative element African designers are using for their work to be outstanding is trying to incorporate culture in their work. This helps them to brand their designs in reference to what they know best (African culture) instead of using western culture which has dominated in much of the past designer work. In this study the researcher is going to explain on how designers can incorporate some specific cultural elements in their designs. The researcher is going to refer to the Kamba mask patterns. The researcher will use these rhythmical and beautiful patterns as an inspirational element for his project.

1.3 Profile of the Case Study

The Katanazi restaurant is located at Kilimani, Ngong Road. It is partitioned to suit the various activities that take place within the premises. This study will mainly focus on the bar and restaurant. The materials used in its design include; wood, metal, cement, stones and bricks, ceramic tiles, plastic and steel for the sinks. The interior and exterior of the place is furnished using colors cream, brown and beige. Lighting during the day is provided by natural light coming through the windows though the natural light is not adequate and the available electrical system is used to provide light at night. The place has no enough exhibitions and display space. In terms of furniture composition, there is metal furniture. There is also outdoor furniture.

1.4 Problem statement

The general interior design and landscape in Katanazi restaurant is not sustainably utilized and catered for. The interior was not designed with any considerations to specific cultural themes and design philosophy intrinsically. There is a lot of conflict with the color balance, floor maintenance, application of recycled materials in both furniture and exhibition design and the entire landscape. The site being a recreational center that attracts people from all age groups, it lacks facilities such as a swimming pool for children, soft landscape materials such as flowers. They are not signage elements close to the proximity of the building. The entrance is seen to have a billboard signage introducing customers. To solve these problems there is need to explore the use of Kamba mask patterns and sustainable materials to further enhance the ambience of the interior and exterior spaces.

1.4.1 Research objectives

1.4.2 Main objective

The main objective is to establish how sustainable design and African design concept can be applied in the interior and exterior spaces of to achieve an appealing sustainable hospitality space.

1.4.3 Specific objectives

To investigate how patterns have been applied in restaurant furniture design.

To explore the relationship between pattern and color and how they can be effectively utilized in restaurant interior design.

To evaluate how to come up with sustainable methods and materials which can be used in design of Katanazi bar and restaurant.

To establish opportunities to the use of Kamba mask patterns in restaurant interior and exterior spaces.

1.4.4 Research questions

How can sustainability and African design concept be applied in interior and exterior spaces to achieve appealing sustainable hospitality space?

How have patterns been applied in restaurant furniture design?

What kind of sustainable methods and materials that can be used in the design of Katanazi restaurant?

In what ways can patterns and color be effectively used in interior spaces?

What opportunities that are available to the use of Kamba mask patterns in restaurants?

1.4.5 Research Purpose

The researcher used this study to redesign the existing interior and exterior spaces at Katanazi restaurant. The study also established ways in which the restaurant will be able to apply African design to improve retreat experiences in their interior and exterior spaces.

1.5 Significance of the Study

This research is meant to be used in upgrading the existing interiors and exteriors at Katanazi restaurant. The study also is geared towards learning and understanding the needs/desires of restaurant users and also the best suiting design both to the customers and the environment. The study will major in solving these problems to achieve a space which is physically, physiologically and mentally comfortable. Through solving these problems this research will help other designers in understanding the needs restaurant users' wants to meet using the design. The study will also

help designers to pay attention on the design process in order to come up with a sustainable design at the end of each work they do. The selection of materials is the key factor of determining whether a design will be sustainable or not.

This research also will create more awareness to the government in terms of restaurant designs needed to conserve our environment and reduce the depletion rate of the scarce resources available. This is because the study will assist the government to enact/enforce laws in building and construction sector stating the requirements a building is supposed to achieve in terms of sustainable design for it to be certified before it is built. The sustainable design is now becoming a global issue thus many designers becoming stranded on which ways to implement their designs for them to be sustainable. It's also a new term to many students in the school of architecture, design and development so the study will give them a clear and deeper understanding of the sustainable design. This study will explain ways in which cultural element can be integrated in designing restaurant interiors. In my case the reader will get to know how to convert the cultural elements into design ideas. This study will explain ways in which the iconic Kamba mask patterns can be used as an element in the interior and exterior spaces of Katanazi restaurant. This Kamba cultural element will add an aesthetic value to the design of the restaurant.

The study will also be a very scholarly point of reference to the students who will be doing research on the same topic. This will also enlighten the people realize how important it is to have a sustainable architecture and design in our environment. This study will provide recommendations to the government and other relevant bodies to come up with a policy on how sustainable design can be applied in future building's interior spaces, furniture, landscaping, exhibition and display. The study will identify the gaps in the existing literature that talks about sustainably designed interiors and exteriors through application of sustainable design principles in filling those gaps.

1.6 Limitations of the Study

1.6.1 Time Constraints

This research project is carried out within a stipulated period of time that might hence not be sufficient enough, hence not all areas within the site would be covered within the analysis. A

detailed analysis will not be achieved for the existing design elements and philosophies used. Also the proximity of the space within the Katanazi bar and restaurant has complex space areas that would be hard to obtain measurements within the time provided.

1.6.2 Limited Access to Data

This research is likely to encounter a disadvantage of insufficient amount of data about the site profile and premises from the involved participants. Some of which may be biased or not based on truthfulness, or even lack of interest in participation to provide insufficient and adequate data.

1.6.3 Financial Constraints

All the costs incurred during this research such as the site visits, analysis, concept creations and presentations in form of prototypes and models are wholly reliant on the student's financial capability.

1.7 Scope of the Study

1.7.1 Geographical Scope

The research process was based on Katanazi restaurant located at Kilimani, Ngong Rd.

1.7.2 Conceptual Scope

The researcher will establish the viability of different sustainable material and African design to show how it can work when applied in the overall space design for exhibition and display, interior architecture, furniture designs and landscape to attract users to the restaurant.

1.7.3 Contextual Scope

The content of this scope will be determined by the limited information acquired from both the primary and secondary sources of data. The primary sources which will be collected through interviews, photographs and participatory observation, whereas the secondary data will be obtained by the internet, articles and all the materials deemed effective and efficient in establishing Kamba mask patterns and recycling towards achieving sustainable outcomes within the environment.

1.8 Definition of terms

1.8.1 Sustainable design: Sustainable design (also called environmental design, environmentally sustainable design, environmentally conscious design) is the philosophy of designing physical objects, the built environment, and services to comply with the principles of social, economic, and ecological sustainability(McLennan,2004).

1.8.2 Culture: A pattern that signifies human activity manifested by the arts, music, sculpture, theatre, dance, film, fashion, design, food and architecture (Carlson, 2011).

1.8.3 Pattern: In this proposed study pattern will refer to a regular arrangement of lines, shapes, colors as a design on materials and objects (Oxford learners Dictionaries).

1.8.4 Color: In this study the term color refers to the property possessed by an object of producing different sensations on the eye as a result of the way the object reflects or emits light (Oxford learners Dictionaries)

1.8.5 Re-use: Using product again after it has been used. In contrast to recycling reuse is the breaking down of the used item into raw materials which are used to make new items (Wikipedia, the free encyclopedia) or buying and selling whole used items, possibly after washing or minor repair (other terms used, particularly in the construction sector).

1.8.6 Recycle: Recycling is a process to change waste materials into new products to prevent waste of potentially useful materials, reduce the consumption of fresh raw materials, reduce energy usage, reduce air pollution (from incineration) and water pollution (from landfill) by reducing the need for "conventional" waste disposal, and lower greenhouse gas emissions as compared to plastic production (Lyons & Burford,1993).

1.9 Conclusion

The study was mainly a design research where focus was on scientific study methods of investigation. The research narrowed down to the Kamba cultural aspect of color and patterns as an expression of culture. The application of cultural design was studied in order to come up with enhanced experiences and spaces that have a true connectedness to the Kamba culture.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter provides information on literature that the study will rely on to provide guidance and also for comparison. African design and sustainability will be discussed expansively. In addition, the aspects of culture of the Kamba color and patterns as an expression of culture will be discussed. Literature on the effect and meaning of these aspects will also be discussed. Exemplars on sustainability and African design will be provided.

2.1 Introduction

Interior design is a growing industry in Kenya and designers are enhancing the quality of interior spaces for the purpose of protecting the health, safety and welfare of the public and increasing productivity and improving the quality of life. The current environmental movement is currently influencing and altering the world of interior design. As people become more environmentally sensitive, they are choosing new materials for their interiors (Center for Sustainable Building Research,2002). Designers are now paying more attention to green and sustainable interior design which involves the use of certain materials and building practices to reduce environmental damage such as use of low pollution, recycled, or sustainable materials (Van Der Ryn and Cowan, 1995). This chapter aims to review literature regarding design with bias towards interior design, furniture, exhibition and display, and landscapes.

This chapter reviews the literature relevant to the sustainable building movement and how choosing design materials impact both the indoor and outdoor environmental quality and cost implications of the hotel and management industry. This section also reviews the existing literature on the concept of sustainable design and sustainability in general highlighting of design champions and philosophies of their works. The philosophies will be narrowed down to different sustainability aspects such as environmental in which recycling process is practiced with different materials.

On the last subtopic provides a clear insight on the different African art and design practices across the African continent and how they have inspired different designers into coming up with modern contemporary product designs that have been embraced over a period of time. It also focuses on

the different cultural aspects of origin, original production processes and how they've changed the lifestyles over recent years.

2.2 Sustainability/Sustainable Design

Sustainability refers to the capacity to endure through renewal, maintenance, and sustenance, or nourishment, in contrast to durability, the capacity to endure through unchanging resistance to change. For humans in social systems or ecosystems, sustainability is the long-term maintenance of responsibility, which has environmental, economic, and social dimensions, and encompasses the concept of stewardships the responsible management of resource uses.

Sustainable design is an approach to design based on natural systems functioning, what Ian McHarg aptly titled in his book, *Design with Nature*. The considerable energy in nature can provide enough to power a sustainable future if we listen and learn from it. Design that use the available site energies are approaching sustainability. These designs connect everything and are the ecological model. (McHarg, 1969) Environmental concern has made its way into almost every aspect of our lives today. The field of interior design is one of them. The world is in dire need of sustainable systems as the growing crisis of haphazard heaps of solid wastes continues to grow. Over the years the growing concerns have led to convening of several conferences by global, regional and local authorities in trying to alleviate the crisis. The centre for sustainable design has built world class knowledge and expertise of sustainable innovation and product sustainability. The centre researches, develops and disseminates understanding of present and future sustainability impacts and solutions related to innovation, products, technologies, service and systems through projects, training, events, networks and information. (University for the Creative Arts, 1995)

Designing sustainable structures and environments in terms of; their interior architecture, landscaping, exhibition and display and furniture design is therefore of significant value not only to them but also to their clients utilizing the facilities and the government. The utilization of recycled materials comes handy as it is the cheapest process of obtaining raw materials favoring the entrepreneurs who are classified as low income earners. Lack of access to credit is almost universally indicated as a key problem for small scale entrepreneurs. This affects technology

choice by limiting the number of alternatives that can be considered. Many may therefore use an inappropriate technology it's the only one they can afford. In cases where credit is available the entrepreneurs lack freedom of choice because the lending conditions may force the purchase of heavy immovable equipment that can serve as collateral. Financial challenges remain a major challenge facing SMEs in Kenya (Wanjohi and Mugure, 2008)

The book sustainable design is a description of a transition from the exclusive concern for form making to the art and science of place making. It induces a call for the design professions to take the next steps in a transformation of the human prospects towards a future that's is sustainable and sustaining of the best in human life, on that is lived in partnership not domination. —The first rule of making any place is that it should not impair some other place. (Williams, 2007) Williams advise that we must commit to designing sustainably that is, designing within the limits of our natural resources and natural laws. Some choices are readily available to us, for example, developing renewable sources, finding alternatives to scarce and diminishing resources and use less more efficiently and wisely. This means designing ways to achieve a higher quality of life for the present and future by designing an —unplugged life that functions well without exploitation of nonrenewable resources and increase capacities for present and future generations.

Sustainable design minimizes the use of non-renewable resources, reduces environmental impact and works closely with the broader sustainability agendas. These agendas include, approaches such as life cycle assessment and life cycle energy analysis to evaluate the environmental impact of various design choices (Clive Edwards, 2011). From an environmental point of view, green design encompasses numerous ways to improve processes and products to make them more efficient and as interior designers apply these approaches, it is necessary to consider the possible impacts in space and time and using assertive design approaches to prevent them. Interior designers are problem solvers just like other designers and this should be reflected in their designs by being protected for the future. An interior is protected for the future only if much thought has been given to all the possible outcomes and impacts and then selecting only those impacts that will sustain a better world. Thus, green design is more or less embracing the opportunities to enhance the world we are living in (Daniel Vallero and Chris Brasier, 2008).

Sustainable Interior Design (green or eco-friendly design) is often overlooked when it comes to combating climate change. It is evident that on many occasions, green designers focus mainly on architecture and energy efficiency of new or renovated buildings and forgetting about the paint, furniture and accessories. If all these aspects are equally put into consideration, it will lead to the reduction of carbon in the environment and creation of sustainable spaces. It is necessary that interior designers look comprehensively at every item they select and its implications on the environment over its full lifespan, beginning with how its produced, whether it uses non-toxic or renewable materials, how the company treats its workers, where it is made, how far it travels, how long it will last and what happens to it when it's finished being used. It's only by considering all these that we can hope to achieve a truly green design.

Sustainable design just like any other design philosophy has laws or principles that govern its practical application. The mode of its application varies among the various design disciplines although some of the common principles include;

- Use of materials that have low impact on the environment. In terms of emission of carbon and its compounds into to the environment.
 - Materials used should be those which are efficient in terms of energy use. Their manufacturing processes and output require less energy.
 - Quality and durable. Long-lasting and better-functioning products will have to be replaced less frequently. Thus, reducing the production of replacements and reducing their possible impacts on the environment.
 - Designs made are for reuse and recycling. Since products, processes and systems are designed for performance in a commercial „afterlife“
 - Plan for energy efficient lighting. Advocating for more use of natural lighting.
- Sustainability has three main features known as 3R 's. These are recycling, reusing and reducing. In this chapter recycling is the main subject of discussion.

2.2.1 Reduce

Reduce is probably the most impactful of the 3 R's. The more we can reduce (consumption, development, etc.) the less we will need to reuse and recycle. This applies to development and

construction projects as well. If we first reduce, then we spend less time, money and energy trying to reuse, recycle, control etc. In the early phases of our site designs we, as design professionals need to be thinking about how we can reduce:

2.2.2 Reuse

To reuse is to use an item again after it has been used. This includes conventional reuse where the item is used again for the same function and creative reuse where it is used for a different function. In contrast, recycling is the breaking down of the used item into raw materials which are used to make new items in many ways reuse and recycle are interchangeable, but here we are going to consider that reuse does not require remanufacturing, processing etc.

2.2.3 Recycle

Recycling is a process to convert waste materials into reusable material to prevent waste of potentially useful materials, reduce the consumption of fresh raw materials, reduce energy usage, reduce air pollution (from incineration) and water pollution (from land filling) by reducing the need for "conventional" waste. Recycling is certainly important. It can reduce raw material consumption, energy use and landfill space among other benefits. There are a lot of things you can do as a designer that the general public won't understand or appreciate but people can relate to recycling and that can propel more people to act sustainably.

Further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Waste falls into one of two categories: either biodegradable or non-biodegradable (Glossary of Statistical Terms, 2003).

Biodegradable waste comprises of streams which originate from plants, animals and other living organisms that can break down into natural components and be recycled into the life cycle naturally. It can be commonly found in municipal solid waste and includes but is not limited to wood waste, food waste, paper waste, biodegradable plastics / phyto plastics (special plastics that break down when exposed to the sun after some time), human waste, manure, sewage, and

slaughterhouse waste. Non-biodegradable waste is waste that does not break down into natural components and exists in the environment for a long time. Examples are tyres, plastics, electronic components, metals, among others.

2.3 Wood Recycling

Wood is a product that combines inspiration, beauty, performance and environmental advantage. This section discusses some of the most compelling reasons for using recycled wood in the built environment. As you will discover, not only is recycled wood a natural product of inherent beauty, as a building material it offers superior performance backed by significant environmental credentials. Use of recycling wood is not new. As early as 1948, the 100 meters' tall tower of Golm transmitter near Potsdam, Germany was built from recycled wood. It stood for 31 years. It was common to reuse wood of dismantled radio towers in the 1930s in Germany, e.g. the former tower of Koblenz radio transmitter was built of wood from a dismantled tower, which carried a T-antenna at Transmitter Muehlacker. The upper parts of the 157metre-tall wood tower of Ismaning radio transmitter, which stood for 49 years, were built of wood from a smaller radio tower dismantled in 1934. For builders and designers seeking a construction material that is versatile, sustainable, attractive and cost effective – recycled wood is the answer.

Offering design options that are limited only by imagination, its flexibility and versatility is no better demonstrated than by the variety of applications it lends itself to. Recycled wood offers a solution to a multitude of building and design requirements, literally creating living spaces alive with beauty, warmth and comfort. The process of recycling wood is as follows:

Step 1: Inspect the wood for warping, rotting, and insect or water damage. Hold one end of each stud or long board at eye level and look down the length of the board to see warping and twisting. Gently poke any discolored areas with a screwdriver to make sure the wood is solid and not rotting or waterlogged. Discard any wood that is too warped for your project, is soft or has black mold on it.

Step 2: Remove all nails. Place a nail puller around the head of the nail, or slide the tines on the back end of the hammer under the head of the nail. Use leverage to work the nail out of the wood.

Step 3: Measure the length of boards and studs and sort into same-length piles so you will be able to grab the appropriate lengths as you are building.

Step 4: Saw your wood into the proper lengths and sizes for your project.

Step 5: Sand any wood that will be seen or that will be used for a decorative finish, such as a table or wood floor.

Recycled wood is used in the sustainable design of furniture and exhibition facilities such as drinks shelves and book cases.



Figure 2.1: Wall hanging

Source: <http://www.facebook.com> 2012



Figure 2.2: Drinks display

Source: <https://www.google.com/imgres?imgurl>

2.3.1 Environmental Credentials

Recycled wood offers a designer several environmental advantages over common, alternative building materials. Namely:

- Wood products store carbon dioxide;
- Comparatively, the manufacture of most wood products requires smaller amounts of energy.
- Residues generated from recycled wood through the design of items like furniture can be reused in a variety of positive ways.

Recycled wood is a building material that can deliver the designer both environmental and performance benefits. These are:

a) Carbon storage

For the environmentally conscious architect, designers or building professional, recycled wood is a logical choice. With the ability to store carbon for its entire service life, using recycled wood can help tackle climate change and transition to a low carbon economy.

b) Life Cycle Analysis

A life cycle analysis measures the environmental impacts of building products throughout their life. By providing a standard way of comparing building products, it helps building professionals make informed and environmentally conscious decisions.

c) Low embodied energy

When compared against other common building material alternatives, recycled wood 's embodied energy is another reason why choosing timber is a positive choice for our environment.

d) Maximize Green Star Ratings

The Green Star Energy Rating system has accelerated industry focus on sustainable design and development. Using timber can help maximize green star credits.

2.3.2 Design Advantages

The design advantages of working with recycled wood are as extensive as they are varied. From the Australian Timber Design Awards that showcase aesthetically wowing recycled wood based designs, to nine-storey timber construction that utilizes the latest wood engineering innovation, it is clear that while recycled wood may be described as many things, boring certainly isn't one of them.

In Design Advantages, Wood Solutions takes a look at the contemporary uses and applications of recycled wood, showing exactly why recycled wood is the building material of today and tomorrow.

a) Aesthetic appeal

The aesthetic appeal of recycled wood is seeing demand for innovative wood designs continually increase. And it is these creative, aesthetically focused recycled wood designs that are showcased each year by the Australian Timber Design Awards.

b) Innovative products

The possible applications of recycled wood are as unique as they are varied. Engineered wood products are leading the innovation charge, creating wooden structures that are strong, beautiful and original.

Trees may be a renewable resource, but globally there is a net reduction in forested areas and current rates of wood use are not sustainable. 1.84 million tonnes of wood waste are produced in the UK every year. While the construction industry produces the most wood waste at 70%, furniture and fencing together account for 8%. Pallets, as used for transportation, account for a further 16%.

There is not much literature on the Kenyan solid waste management (SWM) sector with the exception of Nairobi. Even for Nairobi, the available literature dwells largely on performance description and its causes, household waste generation behavior, and waste characteristics. This section borrows liberally from one of these studies, (Ikiara et al. 2004). While poor management of solid waste is a general problem in Kenya, it is probably worst in Nairobi. Because of the lack of consistent data in other parts of the country, the remainder of this section will be based on Nairobi data.

2.3.3 Sources of Waste Wood

A study by the Waste & Resources Action Programme (WRAP) found that the following sources contribute substantially to wood waste in a particular area:

- **Municipal waste:** when households dispose of wood products like furniture, DIY wood waste, wood packaging.
- **Industrial and commercial waste:** waste from manufacturers of furniture, construction materials (e.g. doors, floorboards) wood packaging, etc.

- **Construction and demolition waste:** leftover structural timber that cannot be used, wood packaging for construction materials, from the Construction industry; torn down structural wood (e.g. floorboards, staircases, doors, or unwanted furniture (e.g. built-in cabinets) from the Demolition industry.

In most cases when wood is recycled it is shredded into small pieces, the fineness of which is determined by the final application. These wood chips may then be used as animal bedding, colored and used for surfacing or it may be reformed into another product such as MDF, chipboard or Wood Polymer Composite (WPC) which can be made with both recycled wood and plastic. In Nairobi most of the waste wood is found at the carpenter's workshops. These small pieces of wood that are trash can be used to create very unique products.



Figure 2.3: Carpentry workshop in Kibera, Nairobi

Source: Energy for all 2030

2.4 ELEMENTS OF SUSTAINABLE DESIGN

- Site planning and design: each site is studied to understand the potential the site has to offer. Site features such as topography, predominant wind, solar exposure, views, watershed and existing vegetation are all factored into the final design solution.
- Community: green buildings and developments support strong communities by giving neighbors places to meet, establishing a sense of place and safety while creating spaces for pedestrians and kids rather than cars.
- Indoor air quality: indoor air quality is an essential goal for any building because it significantly affects resident health and comfort. To achieve a high quality indoor environment, careful design, construction and material choices is required as well as strong coordination among the building team.
- Energy efficiency and renewable energy: each project should be designed to meet the expected function while minimizing the use of energy, saving money and reducing greenhouse gas emissions. Energy consumption can be minimized by using solar water heaters, photo-voltaic systems, wind turbines and geothermal heating systems which also contributes to reduction of gas emissions.
- Material selection: materials selected should be recyclable, renewable, non-toxic and locally produced reducing carbon dioxide emissions and promoting the local economy.
- Water efficiency: fixtures and appliances that are low flow and rated WaterSense (an EPA program similar to energy star) can reduce the amount of water consumption saving water and money. Native planting design and efficient irrigation systems are designed to minimize water used in the landscape. Rainwater collection and use of greywater systems are ways of reducing water consumption.
- Waste management: during construction, the contractor should minimize construction waste while maximizing the use of renewable building resources and recycled materials. Each builder should have a waste management plan and a goal of reducing waste. The building should be designed in a manner that there is encouragement for recycling and waste reduction.

- Commissioning: this is the process of making sure that a building works right. Commissioning optimizes efficiency, health and comfort and is done by systematically evaluating and adjusting building systems to function together as designed.
- Marketability: distinctive and attractive design gives residents, developers and neighbors a reason to take pride in green development, care for their homes, their community and the environment.

2.4.1 Materials

Materials play a major role when it comes to sustainability design. In material selection, the most important criteria are to select the material according to the features of function. Each of every function has specific needs. As an example, materials used in the hospital interior and the shopping mall should be different due to the sterilization aspect. Especially, the selection should aim to long term use. It is very important to use a material in its maximum potential in order to reduce waste of resources. As, in the process of producing materials, the energy is used. This is called as the embodied energy. Each material has different amount of embodied energy. For example, concrete, steel and the plastics are higher in embodied energy amount in the construction materials. Natural materials such as stone and timber gradually have less embodied energy.

2.4.2 Application of sustainable design

Redesigning considers the impact of the initial design over its whole life cycle. Redesigning is an example of sustainability since resources used are reduced as well as the materials used and the energy consumed throughout its life. Reduction of material usage while designing thus saving money and reducing transport volume.

2.5 Exemplar in sustainable design

2.5.1 Piet Hein Eek Restaurant

The Restaurant of Piet Hein Eek is filled with the designer's own pieces, including his signature recycled wood furniture finished with a high gloss varnish. All pieces are unique and made from waste diverted into interior design, like the colorful bar made from old steel pipes. The "Old lampshade-lamp" is a collection of mix-match lights that as a collection create an

astonishing chandelier feature.



Figure 2.4: Furniture made from recycled wood

Source: <https://pietheineek.nl/en/restaurant/restaurant-information>

2.5.2 Andrea Langhi

The Pizzikotto restaurant located in Italy. It was designed by Andrea Langhi and it features a very interesting interior with all sorts of recycled materials. Most of the wood used here comes from packaging and the bathroom is a shipping container.

What's also interesting is that water bottles were used as pendant lamps and the whole space has a casual and fun look.



Figure 2.5: Pizzikotto restaurant

Source: <https://www.archdaily.com/621950/pizzikotto-andrea-langhi-design>



Figure 2.6: *Recycled wood products*

Source: *Dwell magazine*

In Africa South African product designer, Heath Nash, is best known for turning waste materials into covetable designs. Heath Nash is a designer and maker from Cape Town. After majoring in sculpture at UCT, Heath started using the paper-skills developed there to make lights, eventually leading to the exploration of local craft materials and techniques – wire, binding, recycled materials. This led to a range he calls other people’s rubbish made from old used plastic bottles. In recent years, Nash has exhibited worldwide, including Tokyo, Milan, London, Vienna, New York, Los Angeles, Helsinki and Stockholm. He was the South African Elle Decoration designer and lighting designer of the year in 2005/6, and won the British Council title of South African Creative Entrepreneur of the Year in 2006/7. Nash is a graduate of the University of Cape Town with a degree in Fine Arts. (Artistaday.com, 2007-2013). Heath Nash’s products could easily be classified into product design, their utilization and application takes effect in interior design and therefore instrumental to the theme. Critics have described the designer as one concerned with exploring the often unrecognized beauty in everyday objects and materials, notably plastic waste.



Figure 2.7: Recycled lighting products

Source: <https://tdsblog.com/lighting-product-south-africa/>

2.6 AFRICAN DESIGN

The appreciation of African culture is a vast and diverse discussion. Interior designers can help to impact this sustainable movement through the appropriate selection of interior finish materials, use of modified techniques and processes which both meets the needs of our client and support this sustainable commitment of change. This study is aimed to highlight for designers the important elements to consider, in the merge of both African inspired design with sustainable design when evaluating the different sets of materials to designing a restaurant, with consideration to all interior design aspects. In addition, it is meant to provide a framework for using the correct evaluation tools and evaluate practical applications to good use.

African inspired trends in interior design has been popular for a number of years. The vivid colors combined with earthy tones form the basis of this particular style. Further details such as animal prints, color patterns, virtual masks, wooden figures and print motifs further emphasize the splendor of the black continent and give space to the mystical note. The recipe for this type of decoration style is very simple. Inside the desired interior space, acknowledge the warmth of the sun and sand, but also the wealth of fauna and flora; basically the environment in general.

However, the simplest version of the African inspired interior can be done with minimal cost to the budget. In collaboration with aspects of sustainable design, by mimicking the lifecycles of nature it should be fundamental concept in achieving a truly circular economy. It involves taking into consideration the environment impact of the materials, resources, and end-of-life scenarios at the front end of a design project, and making choices that reduce the product of the environment.

In Africa, there lies a variety of design aspects and materials, symbols that explain the various concepts applied in art and design. They may include art of the native, African diasporas such as African American, Caribbean and other American art. The focus of African art and design plays a major role in this study, the idea is to understand on how to fully incorporate the elements and characteristics which can further applied in the design world. Art is a complex term however. The art world has sustained many art movements commonly referred to as “isms” of art. (Fisher 1993) gives his remarks on the difficulty involved in formulating a common definition of art. To him, the nature of art allows all the actors in the art fraternity –the audience, curators, editors, critics, art historians and theorists –play an important role in determining the direction and definition of art. African art should be broadly appreciated, especially by designers who speak volume in the industry when coming up with contemporary designs day by day. The different ideas involved and how to approach and execute the concept recommended.

This research is a foundation obligated to build the necessary foundation especially for designers who come up with different innovations. In order to come up with appealing designs, it is mandatory to understand the different elements of the African aesthetic and how they can be useful in achieving sustainable design for its users.

The arbitrary use of colors, conceptual ideas and abstraction of the regalia and sociocultural events in artistic format, which has formally, characterized the African art scene, and negatively labelled the west as primitive, fetishistic, idolatrous, perverse, folk art (Nkrumah, 1963, Autubam 1963: Dei-Anang 1975: Amenuke, Dogbe, Asare, Ayiku and Baffoe. 1991) amongst others became the lynchpin that stimulated their arts. The focus of this study, allows me to narrow down my choices in which best type of art and design suitable to help me execute my desired space at Katanazi bar and restaurant. The idea is to show the society that with the correct application of the aspect, it is significantly possible to achieve what is proposed and getting appreciation from the concept.

2.6.1 African masks

African masks can be traced back to well past Paleolithic times. These art objects were, and are still made of various materials; included are leather, metal, fabric and various types of wood. African masks are considered amongst the finest creations in the art world and are highly sought after by art collectors. Many of the pieces, some replicas, can be viewed in museums and art galleries in many parts of the world. Masking ceremonies in Africa have great cultural and traditional significance. Latest developments and understanding of Aesthetic principles, religious and ceremonial values, have brought about a greater insight into the ideas and moral values that African artists express in their art.

During celebrations, initiations, crop harvesting, war preparation, peace and trouble times, African masks are worn by a chosen or initiated dancer. It can be worn in three different ways: vertically covering the face: as helmets, encasing the entire head, and as crest, resting upon the head, which was commonly covered by material as part of the disguise. African masks often represent a spirit and it is strongly believed that the spirit of the ancestors possesses the wearer. Ritual ceremonies generally depict deities, spirits of ancestors, mythological beings, good and or evil, the dead, animal spirits, and other beings believed to have power over humanity. Masks of human ancestors or totem ancestors (beings or animals to which a clan or family traces its ancestry) are often objects of family pride; when they are regarded as the dwelling of the spirit they represent, the masks may be honored with ceremonies and gifts.

2.6.2 Color and Patterns

Color and patterns are an essential aspect of culture. They are used to express feelings and also as a form of communication. Wierzbicka, (1990) argues that color concepts are anchored in certain “universals of human experience”. She goes on to say that color sensations occur in our brains and not the world outside. So to be able to communicate our sensations we project them onto something in our shared environment. We realize that color is a way of communicating our sensations or feelings to shared environment.

2.6.3 Color Psychology

Whitfield et al, (1990) describe color psychology as the study of color as a determinant of human behavior. What Whitefield et al propose is that color has different meanings attached to it which can affect human behavior. Alcaide, J. et al, (2012) goes on further to explain that perception is not only related to the color of an object but can also be affected by everything else within the field of vision. The general look and feel of a space will determine how one behaves.

Color has long been used to create feelings of coziness or spaciousness. However, how people are affected by different color stimuli varies from person to person. However, studies have shown that people from the same region will have the same color preference. There are four psychological primary colors - red, blue, yellow and green. (see fig. 1 appendices). They relate respectively to the body, the mind, the emotions and the essential balance between these three. (Color Affects, 2008). The psychological properties of the four basic colors are as follows:

- **RED. Physical**

Positive: Physical courage, strength, warmth, energy, basic survival, 'fight or flight', stimulation, masculinity, excitement. Negative: Defiance, aggression, visual impact, strain.

Being the longest wavelength, red is a powerful color. Although not technically the most visible, it has the property of appearing to be nearer than it is and therefore it grabs our attention first. Hence its effectiveness in traffic lights the world over. Its effect is physical; it stimulates us and raises the pulse rate, giving the impression that time is passing faster than it is. It relates to the masculine principle and can activate the "fight or flight" instinct. Red is strong, and very basic. Pure red is the simplest color, with no subtlety. It is stimulating and lively, very friendly. At the same time, it can be perceived as demanding and aggressive.

- **BLUE. Intellectual.**

Positive: Intelligence, communication, trust, efficiency, serenity, duty, logic, coolness, reflection, calm. Negative: Coldness, aloofness, lack of emotion, unfriendliness.

Blue is the color of the mind and is essentially soothing; it affects us mentally, rather than the physical reaction we have to red. Strong blues will stimulate clear thought and lighter, soft blues

will calm the mind and aid concentration. Consequently, it is serene and mentally calming. It is the color of clear communication. Blue objects do not appear to be as close to us as red ones. Time and again in research, blue is the world's favorite color. However, it can be perceived as cold, unemotional and unfriendly

- **YELLOW. Emotional**

Positive: Optimism, confidence, self-esteem, extraversion, emotional strength, friendliness, creativity. Negative: Irrationality, fear, emotional fragility, depression, anxiety, suicide. The yellow wavelength is relatively long and essentially stimulating. In this case the stimulus is emotional; therefore, yellow is the strongest color, psychologically. The right yellow will lift our spirits and our self-esteem; it is the color of confidence and optimism. Too much of it, or the wrong tone in relation to the other tones in a color scheme, can cause self-esteem to plummet, giving rise to fear and anxiety. Our "yellow streak" can surface.

- **GREEN. Balance**

Positive: Harmony, balance, refreshment, universal love, rest, restoration, reassurance, environmental awareness, equilibrium, peace. Negative: Boredom, stagnation, blandness, enervation.

Green strikes the eye in such a way as to require no adjustment whatever and is, therefore, restful. Being in the center of the spectrum, it is the color of balance - a more important concept than many people realize. When the world about us contains plenty of green, this indicates the presence of water, and little danger of famine, so we are reassured by green, on a primitive level. Negatively, it can indicate stagnation and, incorrectly used, will be perceived as being too bland.

2.6.4 Kamba Masks

The Kamba are nowadays most famous for their African blackwood (*Dalbergia melanoxylon*) carvings, although this is actually a very recent art form: The Kamba were introduced to the techniques of wood sculpture by Mutisya Munge, who had served in the colonial Carrier Corps in Tanganyika (now Tanzania) during World War I. There, he came into contact with Zaramo carvers,

who had themselves been influenced by the Makonde (see my pages on Makonde figurative carvings and Makonde masks). Munge collected Zaramo models, and on returning to Kenya took up carving as a full-time occupation.

Following Munge's efforts, a booming trade in carvings developed at the small town of Wamunyu, along the road from Machakos to Kitui, as evidenced nowadays by a welter of self-help and co-operative carvers' societies and their shops. Here, some 3000 people - many of them children - eke out a living with wood carving. Many more carvers are located throughout Ukambani, and elsewhere in Kenya (especially the coast), where they supply the tourist market. Anyone who has been to Kenya will undoubtedly have come across the miniature carvings of elephants and antelopes, lions, reptiles and birds, as well as the necklace pendants embellished by coiled wire, which are sold in hotel gift shops and tourist stalls throughout the country. No matter where you see or buy them, chances are that they will have been made by the Kamba - even the life-size Maasai warriors, which I once saw a German couple carting through Nairobi's Jomo Kenyatta International Airport on the way to the check-in desk.

These animal and human figures are far from traditional, but most the remunerative for the carvers. Spoons and ladles are an exception, as are the three-legged stools, often beautifully inlaid with wire coils.



Figure 2.8: *Kamba masks*

Source: *www.pinterest .com*

2.7 Exemplars in African design

2.7.1 Peter Dominick

Kidani Village in the United States of America was designed with three themes, Fabric, Proverbs, and Art. It's art is far more than just paintings hanging from the wall. The building was designed with all types of artistic creations in mind with an aim to express the beauty of the rich African culture. Kidani Village was designed by Denver architect Peter Dominick of Urban Design Group (now 4240 Architecture). African patterns have been used throughout Kidani Village.



Figure 2.9: Kidani Village

Source: <https://disneyworld.disney.go.com/resorts/animal-kingdom-villas-kidani/>

2.7.2 John Lancheter



Figure 2.10: Shaka Zulu, London NW1:

Source: <https://www.theguardian.com/lifeandstyle/2010/oct/02/shaka-zulu-london-nw1-review>

Shaka Zulu, a huge, new, South African-themed restaurant located right slap in the middle of Camden Lock, is like that. There are plenty of other huge Zulus, mixed with African reliefs on the walls, large African animal statues – you name it – all in a huge underground space set over two levels, one of nightclub and bar, the other of restaurant.

The food and wine keep up the South African theme. This needn't be a problem, because although it would be untrue to say that "cuisine" is the first thing you attach to "South Africa" in a word-association test, the country's restaurant culture has a reputation for being decent.

2.8 DESIGN PROCESS

“Design is a series of decisions that result in a series of good or bad consequences. Good design results from making informed decisions from a knowledge base, keeping in mind that the decisions we make have an influence on the people we’re serving. The design process is an approach for breaking down a large project into manageable chunks. Engineers, architects, scientists and other thinkers use the design process to solve a variety of problems.

I. Define the problem

The researcher was able to identify the problem as poor design and the root cause being the year the restaurant was built. In the case of poor design, a couple of things are not considered while designing a space for instance, Katanazi bar and restaurant has not adequately considered sustainable and African design in their design, that can be seen through the furniture and even the landscape.

II. Collect information

The researcher was able to get information on how the design is inconveniencing the customers as well as the employees. The customers normally have a hard time when taking their meals as the chairs are made up of metal which can hurt their backs.

III. Brainstorm and analyze ideas

The researcher therefore came up with some ideas as to help with the existing problem. One is to idea carefully design the restaurant furniture so as to ensure the customers are comfortable when having their meals.

IV. Develop solutions

The researcher was able to come up with the final solutions for the problems facing the site. The solutions included renovating the restaurant so as to keep up with the trends in design, making sure sustainable and African design is adequately applied.

V. Gather feedback

The researcher was able to gather feedback from some few customers, the employees and the manager so as to know if the solutions work for them. The feedback supported the solutions the researcher had for the restaurant. The people thought they would be the best solutions.

VI. Improve

The researcher made a prototype of the restaurant's design so as to test if his solutions would eventually work.

2.9 Conclusion/summary

This chapter provides detailed explanation of how interior designers and architects can integrate sustainable design with Kamba mask patterns to come up with sustainable restaurant interiors and outdoor design. Also deep description on how to use sustainable design materials and also minimizing the materials we use in our design is provided. Sustainable design is the philosophy of designing physical objects, the built environment, and services to comply with the principles of social, economic, and ecological sustainability (McLennan, 2004). The intention of sustainable design is to "eliminate negative environmental impact completely through skillful, sensitive design"(McLennan, 2004). The interior designer therefore should pay more attention to the sourcing of materials, type of materials and also the design process he/she embarks on during implementation.

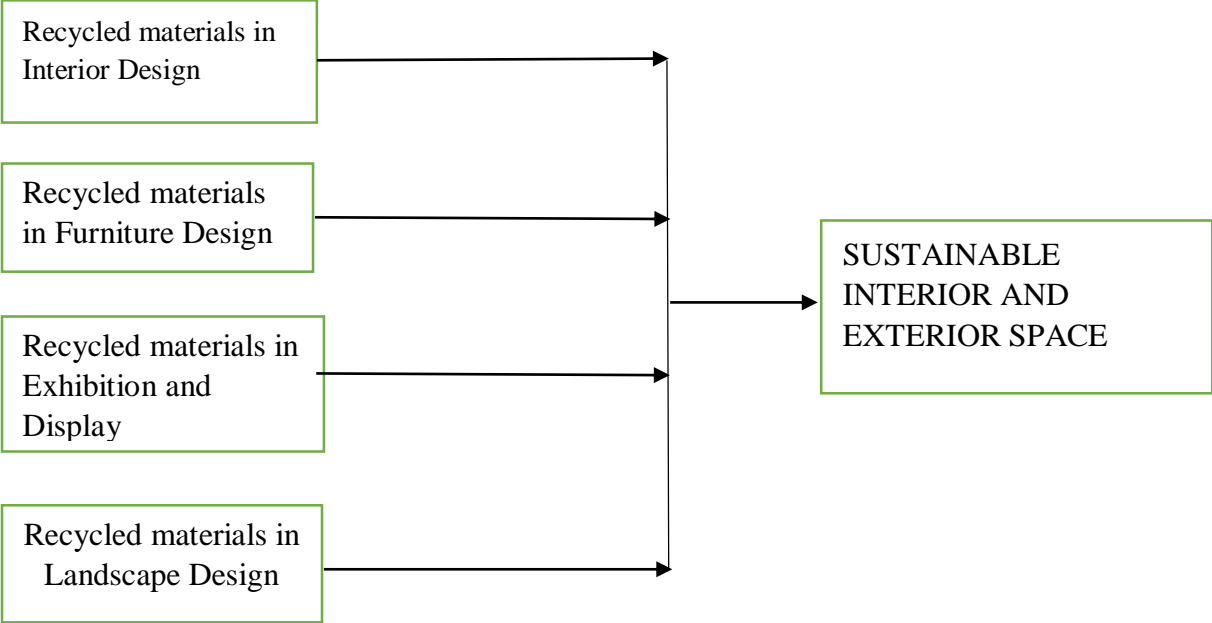
This study is geared towards integrating culture (Kamba mask patterns) with sustainable design in the design of restaurants with the case study being Katanazi bar and restaurant. The research aims at achieving sustainable restaurant and also reflect cultural element in the design. The researcher aimed at investigating the opportunities to the use of African mask patterns and sustainable materials. These approaches cut across all interior design components namely furniture, exhibition and display, interior architecture and landscaping which in turn leads to the practice of sustainable design.

During the research several gaps were identified: most interior designers are not adequately employing sustainable design in their work; African interior designers are trying to copy western culture in their designs instead of applying their cultural elements which they understand more deeply. In this research the researcher has explained integration of Kamba mask patterns with sustainable design for being familiar with Kamba culture. This study recommends interior designers to try to apply this method of design approach in order to retain our African culture which is fading away due to copying western culture.

Conceptual Framework

Independent variables

Dependent variable



Flow Chart 2.11: Conceptual Framework

Source: Author, 2019

CHAPTER 3

3.0 RESEARCH DESIGN AND METHODOLOGY

Foundations of a research are built and conducted over a structure called methodology. It is however described as a number of similar activities relating a search for information. “an activity undertaken in order to find things out in a systematic way, thereby increasing their knowledge” (sanders et al. 2009)

3.1 Introduction

This chapter will focus on the research design of the dissertation. It will involve the analysis strategy, analysis methods, analysis approach, the methods of data collections, the selection sample. Also it will involve the research process, type of data analysis used and data presentation methods of the project. This will help to further allow the research to critically evaluate the study’s overall validity and reliability. Endeavor of any research is to uncover the concealed reality that is yet to be exposed or revealed.

Main objective of carrying out the research methodology is to identify and create problem solving solutions towards the society and the environment. Part of the purpose is to inform action, to prove a theory, and contribute to developing knowledge in a field or study. The research is a tool for building knowledge and for facilitating learning. To understand various issue and increase public awareness. It is also a means to fund, gauge and seize opportunities.

3.2 RESEARCH DESIGN

Research design refers to the overall strategy that one chooses to integrate the different components of the study in a coherent and logical way thus ensuring one effectively addresses the research problem. It is the blue print for collection, measurement and analysis of data (De Vaus, D. A. Research Design in Social Research. London: SAGE, 2001).

Design research is also referred to as design methodology that includes the study of how designers work and think. Design research focuses on the scientific (systematic and reliable) study of methods of investigation that can be applied by designers (Cross, 1993)

Design: Design is a creative process which integrates the physical qualities of a product with aesthetic considerations. It is both the result as the end product and the process which creates the result (Hardt, 2006).

The researcher will use a descriptive research design in this study. According to Gay (cited in Mugenda and Mugenda, 1999) a descriptive study is where data is collected in order to answer questions concerning the current status of subjects in the study. Descriptive research methods include observational method, case study method and survey/ questionnaire method. This research aimed at establishing what the restaurant customers thought mostly about the design of the site and what they thought should be improved.

3.3 TARGET POPULATION

This refers to the entire group of individuals or objects to which researchers are interested in generalizing conclusions. The target population, usually has varying characteristics, in this case the theoretical population.

- ❖ A group of people who actually participate in your study. They will be the individuals who will end up being interviewed or observing.
- ❖ The general extent to which we can apply the findings of our research, depend on the target population we are interested in.
- ❖ In this case the target groups will involve the customers who are regular visitors to the restaurant and bar, and also the staff of the hospitality premise.

3.4 POPULATION AND SAMPLE

Table 3.1: Population and sample

Category	Frequency	Percentage (%)
Restaurant manager	1	5
Waiter/Waitress	4	20
Restaurant customers	15	75
Total	20	100%

Source: Author, 2019

Population sampling is the process of taking a subset of subjects that is representative of the entire population. The sample must have sufficient size to warrant statistical analysis. The sample provides the information and data for the study. According to Parahoo (2006) non-probability samples can be useful with qualitative research as —the purpose of qualitative research is to contribute to an understanding of phenomenal and the sample can be ‘chosen’ to best provide the required data for the study.

The researcher will use random sampling to determine the sample of the population size that will facilitate the study. The researcher will choose random sampling as the sampling method suitable for the study since it is conducted where each member of a population has an equal opportunity to become part of the sample (Yates, D.S. and David S.M, 2008).

The population of the study will be the customers who are regular visitors to the restaurant and also the staff of the hospitality space.

3.4.1 SIGNIFICANCE OF THE POPULATION SAMPLE

- Restaurant manager and employees will provide useful information about the restaurant.
- Restaurant customers will help in having an understanding of their experience of the restaurant.

3.5 DATA COLLECTION METHODS

Data collection is the process of gathering and measuring information on targeted variables in an established systematic fashion, which then enables one to answer relevant questions and evaluate outcomes.

Before presenting the data collected, the researcher will analyze the data to understand it better and explain it further. The researcher will analyze data collected which will basically dissect the field notes whereby regularities and/or patterns will emerge from numerous observations made during fieldwork stage (Nachmias, 1996).

The study will be conducted using the following ways of data collection: observation (direct), Interviews (face to face communication), Case studies, taking photos, taking field notes, journals and magazines and goggle scholar.

3.5.1 Interviews

Generally, interview means a private meeting between people when questions are asked and answered. The person who answers the questions of an interview is called in interviewer. The person who asks the questions of our interview is called an interviewer. According to Dr. S. M. Amunuzzaman, an interview is a very systematic method by which a person enters deeply into the life of even a stranger and can bring out needed information and data for the research purpose.

The author will use semi structured interview guide as the main method of data collection which allowed for a fixed set of questions but with no fixed responses (Burns & Grove 2011) and allowed participants to expand on points made in the conversation. Semi-structured interviews allow for flexibility that the researcher had not anticipated when preparing the interviews. The author will use face-to-face interviews to collect primary data of the challenges of the current design rather than telephone interviews, as they were more personal and it was easier to explore participants 'experiences face-to-face (Macnee & McCabe 2008). The interview will last for between thirty (30) and Forty (40) minutes and followed an interview schedule (Tod 2006).

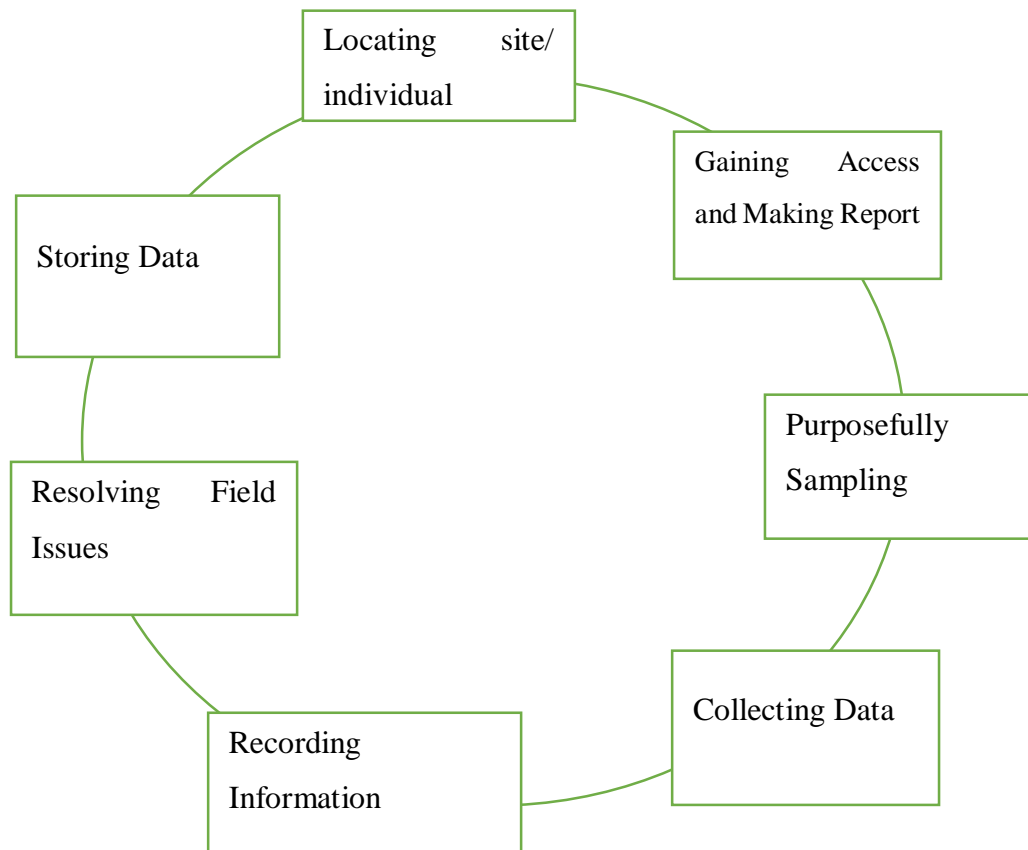


Chart 1: Data Collection Activities (Creswell, 2006: 118).

Source: Redrawn by author.2019

The interview will have an opening introduction, guiding questions and a final, closing statement; which will remain the same for each interview to ensure consistency. The questions which will be used for the interview will emerge from the literature review conducted prior to the commencement of this research study, and will be pilot tested to see if the questions would answer the research questions. Through the use of individual interviews, the author will have sought to understand personal attitudes and beliefs surrounding the topic (Jackson et al. 2008).

The interview will entail questions like:

- Are you familiar with the concept of recycled waste materials as being part of sustainable design?

- Are you familiar with the concept of African masks patterns as used in interior design?
- Do you think there are opportunities to the use of Kamba mask patterns in restaurant interior and exterior spaces to create an aesthetic interior space?

The interviews will be administered to the regular customers of the restaurant since they are more familiar with the restaurant as well as the employees and manager of the restaurant.

Advantages of an interview: one can be able to ask any question that the respondent finds it hard to answer using other means.

3.5.2 Observation

Observation, as a method of data collection will be employed as stated by Leedy (2005, pg. 144) to get full information, the researcher will participate in the daily activities at the area of study. Observation has been used in a variety of disciplines as a tool for collecting data.

Marshall and Rossman (1989) define observation as "the systematic description of events, behaviors, and artifacts in the social setting chosen for study" (p.79). Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study (Erlandson, Harris, Skipper, & Allen, 1993).

Observation involves the identification of the phenomenon to be observed, getting the right tools such as note books and information on how good wood and Kamba mask patterns can be used in interior spaces. Note taking will also be used to capture points and activities that required greater detail. Observation will allow the researcher to capture information that would otherwise be difficult to capture using other means. Observation is a continuous data collection tool that will be used by the observer/researcher at the site. Through direct observation by the trained eye, the researcher will keenly observe the behavior of customers around the restaurant in terms of space and even the design.

Non participant observation required the researcher to observe without interfering with the ongoing activities. This method will allow the researcher to record non-verbalized phenomenon and visual elements that could only be recorded using visual observational tools.

3.5.3 Photography

This is actually involves taking photographs of the research site. To give a visual representation of the current situation of the site (current site conditions). The researcher will take photographs of the site as a way of collecting data, analyze them and report her findings. The photography will constitute the interiors, exhibition and display, landscaping and furniture of the restaurant. Photography will be used to capture diverse facets of the living and working environment at Katanazi bar and restaurant to present a real time visual illustration of the data.

Photography also serves as a recording tool of the current situation of the area of study. Photos will be taken by the researcher to keep as record so as not to miss the needed design details. The advantage it has over observation is that the data one collects from this method can be stored unlike observation where it can fade away.

3.5.4 Case studies

Anderson (1993) sees case studies as being concerned with how and why things happen, allowing the investigation of contextual realities and the differences between what was planned and what actually occurred. Yin (1993) suggests that the term refers to an event, an entity, an individual or even a unit of analysis. It is an empirical inquiry that investigates a contemporary phenomenon within its real life context using multiple sources of evidence.

Case study is not intended as a study of the entire population. Rather is intended to focus on a particular issue, feature or unit of analysis. This method enables one to understand the complex real-life activities in which multiple sources of evidence were used. The used of case study to probe an area of interest in depth is particularly appropriate. Case studies become particularly useful where one needs to understand some particular problem or situation in great-depth, and where one can identify cases rich in information. As Noor (2008) explains, some the strengths of the case study method are that it enables the researcher to gain a holistic view of a certain phenomenon or series of events and can provide a round picture since many sources of evidence can be used. Another advantage is that case study can be useful in capturing the emergent and immanent properties of life in organizations and the ebb and flow of organizational activity. The

case study approach was used in this research as a tool for data collection to establish a good analysis of the site.

3.6 DATA ANALYSIS TOOLS

According to JF Hair (Hair 2010). Analysis of data is the process of inspecting, cleaning, transforming and modelling data with the goal of discovering useful information.

3.6.1 Qualitative Data Analysis

Qualitative data refers to non-numeric information such as interview transcripts, notes, video and audio recordings, images and text documents. The research her will use content analysis, narrative analysis, and framework analysis.

Content analysis. This refers to the process of categorizing verbal or behavioral data to classify, summarize and tabulate the data.

Narrative analysis. This method involves the reformulation of stories presented by respondents taking into account context of each case and different experiences of each respondent. In other words, narrative analysis is the revision of primary qualitative data by researcher.

Framework analysis. This is more advanced method that consists of several stages such as familiarization, identifying a thematic framework, coding, charting, mapping and interpretation.

3.7 DATA PRESENTATION TOOLS

This refers to the organization of data into tables, graphs or charts, so that logical and statistical conclusions can be derived from the collected measurements. Presentation of data requires skills and understanding of data.

Presenting the data includes the pictorial representation of the data by using graphs, charts, maps and other methods. These methods help in adding the visual aspect to data which makes it much more comfortable and quicker to understand. Various methods of data presentation can be used to present data and facts.

As text – Raw data with proper formatting, categorization, indentation is most extensively used and very effective way of presenting data. Such format is widely found in books, reports, research

papers and in this article itself.

In tabular form – Tabular form is generally used to differentiate, categorize, relate different datasets. It can be a simple pros & cons table, or a data with corresponding value such as annual GDP, a bank statement, monthly expenditure etc.

In graphical Form – Data can further be presented in a simpler and even easier form by means of using graphical form. The input for such graphical data can be another type of data itself or some raw data. For example, a bar graph & pie chart takes tabular data as input. The tabular data in such case is processed data itself but provides limited use. Converting such data or raw data into graphical form directly makes it quick and easier to interpret.

3.8 Logical Framework

Table 3.2: Logical Framework

Objective:1 The main objective is to establish how sustainable design and African design concept can be applied in the interior and exterior spaces of to achieve an appealing sustainable hospitality space.				
Data Needs	Data Source	Data Collection Tool	Analysis Method	Expected Output
How Sustainable design African design can be applied to achieve Appealing sustainable hospitality space	Library research	Literature Review	Descriptive analysis Content analysis	Knowledge on sustainable design and African design concept
Objective 2: To investigate how patterns have been applied in restaurant furniture design.				

Data Needs	Data Source	Data collection Tool	Analysis Method	Expected Output
Investigate the application of Kamba mask patterns in restaurants furniture	Library Research Documentation Site	Observation Photography	Descriptive analysis Visual analysis	Knowledge on how patterns have been applied in restaurant furniture

Objective 3: To explore the relationship between pattern and color and how they can be effectively utilized in restaurant interior design.

Data Needs	Data Source	Data collection Tool	Analysis method	Expected Output
To explore the relationship between pattern and color and how they can be effectively utilized in restaurant interior design	Library research Literature	Literature Review	Content analysis Descriptive analysis	Knowledge on how pattern and color can be effectively utilized in restaurant interior design

Objective 4: To evaluate how to come up with sustainable methods and materials which can be used in design of Katanazi Restaurant and bar.

Data Needs	Data Source	Data Collection Tool	Analysis Method	Expected Output
To explore the relationship between pattern and color and how they can be effectively utilized in restaurant interior design	Library research Literature	Literature Review	Content analysis Descriptive analysis	Knowledge on how pattern and color can be effectively utilized in restaurant interior design

Source: Author, 2019

3.9 CONCLUSION

The methodology adopted for research was mainly qualitative. It was aimed at establishing whether sustainable design has been incorporated into the interiors and exteriors of bars and restaurants and also to determine how contemporary designers have incorporated different cultures in their designs. The study also sought to present thorough descriptions of the views elicited by the customers and also through observation, on the general outlook of Katanazi bar and restaurant. Data collected included both primary and secondary. Secondary data was based on the concerned areas of this study from publications such as books, reports, articles, journals, academic papers as well as web resources. Primary data comprised of a selected group of people related to the case study such as; the director, manager, waiters and customers from the restaurant and also interior designers. Much of the information was collected through in-depth interviews and observation. Data analysis involved field notes, narratives, records and photographs.

CHAPTER 4

4.0 SITE ANALYSIS AND INTERPRETATION OF FINDINGS

This chapter reviews the description and qualitative information linked in the analysis of the site in pictorial form that give a narrative of the site. It will also focus on the analysis of the data collected through the various methods of data collection, giving the depth comprehension on the topic of study and how it will provide a problem solution with regards to the objective of the study. The main objective of this chapter is to present the raw nature of data both in qualitative and quantitative manner after it has been arranged in meaningful order to ease the understanding. The presentation will be in form of pie charts and once it is presented, the presentation findings will then be addressed with the aim to answer the research question thereby achieving said objectives. Of which after the chapter will come to a conclusion.

The purpose of this chapter is to outline the profiles of the site of interest. This study will use comparative case study designs to evaluate both interior and exterior materials used at Katanazi bar and restaurant and the researcher's suggested materials. The amenity was built using standard design practices.

❖ **Context-** The analysis will assist in considering the characteristics of the site and adjacent or adjoining site at the outset of the design process as well as any constraints or opportunities to ensure that those are reflected in the design. The effectiveness of the site analysis will assist in implementing long-lasting suitable building design principles, such as recycling materials to produce a product that will ultimately result in long-term environmental and financial saving.

❖ **Application-** This chapter applies to all development applications for multi-dwelling interactions such as those that may include subdivision of space, lava trine utility, and other land use applications

❖ **Objectives-** In this chapter, the objectives to consider the constraints and opportunities of the site for the proposed design development, ensure compatibility between the site and the proposal. Also maximize the potential for a sustainable design, minimizing overshadowing impacts of a

development on adjoining dwellings. Ensure the sustainable design is compatible with the natural landscape and any identified natural hazards. Ensure further recommendation of design using materials and finishes that are not intrusive upon the landscape.

❖ **Controls and Performance criteria-** This section ensures that the characteristics of the site and its surroundings have been adequately considered through preparation of a thorough site analysis. In coming up with the sustainable space, the design application should show: existing natural vegetation within the landscape, opportunities to a sustainable space having regards to natural lighting access (help to control electricity cost).

4.1 Qualitative Analysis

4.1.1 Geographical location

The site of interest is located in a pleasant surroundings, that offers elegant refined personal service, with a unique and authentic cuisine and is situated in Kirichwa road, Kilimani. The facility is built with an ancient structure and design with the basic materials used in the construction being: wood, concrete blocks, stone and leather. The restaurant has same type and style of furniture both indoor and outdoor furniture.

The site can be described as an open place for social gatherings, considering its spacious landscape appearance. Its interior is subdivided into two, comprising of the bar setting and the restaurant area. Further into the amenity is the open space surrounding with also constitutes of a bar locale at the center, surrounded by a sitting arrangement within roofing for customers.

They provide good and healthy meals. With little consideration to the design concept and spatial planning its design, both from landscape to the interior lacks in aesthetics and prowess. Taking into consideration the four areas of interior design, there is no clear design concept for the space or a consideration for one as well as poor spatial planning. There are no trends and styles to consider in the furniture design even with the existing space.

4.2 Site inventory analysis

4.2.1 Landscape area

With landscaping design there is a lot of negligence of space; the human environment lacks the elements necessary create an appealing considerable space for social interactions. Absence of soft landscape materials and water feature (pool) raises a lot of questions as far as the basic elements of a recreational; facility are concerned.



Figure 4.1: Outdoor landscape

Source: Author, 2019



Figure 4.1.1: Diagonal parking

Source: Author, 2019

However, there is ample parking for visitors. There is a back-in angle/diagonal parking. It is a great technique intended to improve the safety of on-street parking. Vehicles preparing to enter a parking space drive slightly past the space, signal and then back into the space. The general landscape of the restaurant from the entrance which extends to the exterior is made up of (**kokoto**)

4.3 Interior architecture

The interior architecture walls are solid, made of concrete painted beige and cream. The ceiling is made of wooden stripes just beneath layers of corrugated sheets and the ceramic tiles and wood make part of the floor as shown in the figures below. There is poor lighting within the interior which most of the staff members uttered as the main problem. There is evidence of bulb holders that lack bulbs, hence the darkness, exposed wires within the ceilings. Worn out tiles and wooden floor.

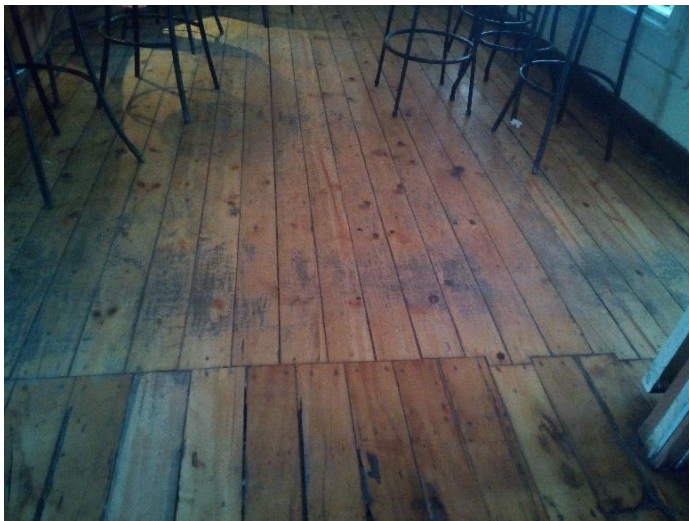


Figure 4.2: Worn out wooden floor

Source: Author, 2019



Figure 4.2.1: Worn out ceramic tiles

Source: Author, 2019



Figure 4.2.2: Wooden ceiling

Source: Author, 2019

4.4 Furniture Design

The interior bar furniture is one leathered upholstered, metallic chairs, have side tables, circled table tops, spacious enough to place drinks. The counter height chairs are also metallic but don't measure up to the recommended standard customs



Figure 4.3: Restaurant area metallic chairs

Source: Author, 2019



Figure 4.3.1: Bar grill metallic chairs

Source: Author, 2019



Figure 4.3.2: Outdoor furniture

Source: Author

4.5 Exhibition displays

The restaurant lacks proper business branding since there are no billboards for directions, menu regardless services offered by the hotel are not outlined on the entrance signage. The displays been used include the indoor bar and the outdoor restaurant. The interior display unit is made of wood.



Figure 4.4: Exhibition and display Unit

Source: Author, 2019



Figure 4.4.1: Laminated kitchen cabinet

Source: Author, 2019

With all this in mind the research looks to improve the designs at Katanazi bar and restaurant, using a design approach and successfully apply the considerations on the four different areas of interest to give the space more elegance, with the necessary elements and achieve a sustainable space.

The following is a tabulation SWOT analysis describing the pictorial interior space and the furniture.

Table 4.1: SWOT analysis of the present features within the site. (source: Olpha, 2019)

	Strengths	Weaknesses	Opportunities	Threats
Floor		Uneven distribution of tiles due to wearing out.	The terrazzo floor provides possibilities of redesigning it with other materials like tiles	Due to uneven surface, clients are predisposed to physical injuries through chair/table imbalance
Ceiling	Wooden ceiling adds the much needed aesthetic value to the restaurant ambience.	When wood is not well treated, water and rodents attack it hence weakening it	Wood ceilings can be easily replaced with other ceiling materials or redesigned	Water and rodent attack ceiling can lead to physical harm of clients and workers Wood can also

	Since wood is a poor conductor of heat, clients are protected from the scorching heat		through painting so as to suit the clients' needs	lead to faster spread of fire
Furniture	Most of the furniture is made from metal hence strong and stable	Arrangement of the furniture is crowded hence uses a lot of space	The available metal chairs and tables can be remodeled accordingly	Metal chairs lack rubber cushion between the legs and the floor hence cause wear out of tiles/floor and a lot of noise when pulling them.
Walls	The restaurant area has less walls which translates to more natural light penetration hence an energy efficient restaurant	Less walls impact heavily on the much needed decoration and redesigning		

Source: Author, 2019

4.6 Analysis of response

This is a presentation of the data collected on the study based on the views of the sample participants who were selected at random. Each of the methods of data collection yielded different results that were represented by use of pie charts and some of which were not represented through quantitative methods used qualitative methods of data analysis.

4.6.1 Target population

With the sample selection method being random, the target population constituted of both male and female of different ages and a target population consisting of professionals who work within the restaurant, and often visit the site on a regular basis during leisure time and meal hours and also the staff in particular the waitresses. The data collection was based on key informants such as the staff and customers acquiring information about the site and the type of hospitality treatment to undertaken and whether there should be improvement consideration on the existing space.

4.7 Quantitative Analysis

From the series of questions that the researcher gave the respondents so as to get information on the design of the bar and restaurant, the following is a summary of the responses given represented in pie charts and bar graphs.

A population of fifty (50) respondents comprising of managers, customers, waiters and waitresses were randomly selected and interviewed. The researcher in this section sought to establish the response rate to interview guides issued to the respondents, as shown in Chart 4.1 below. Out of the total number of respondents only forty-five (45) were able to participate in the interviews which was a response rate of eighty percent (80%). This survey can therefore be said to have been successful.

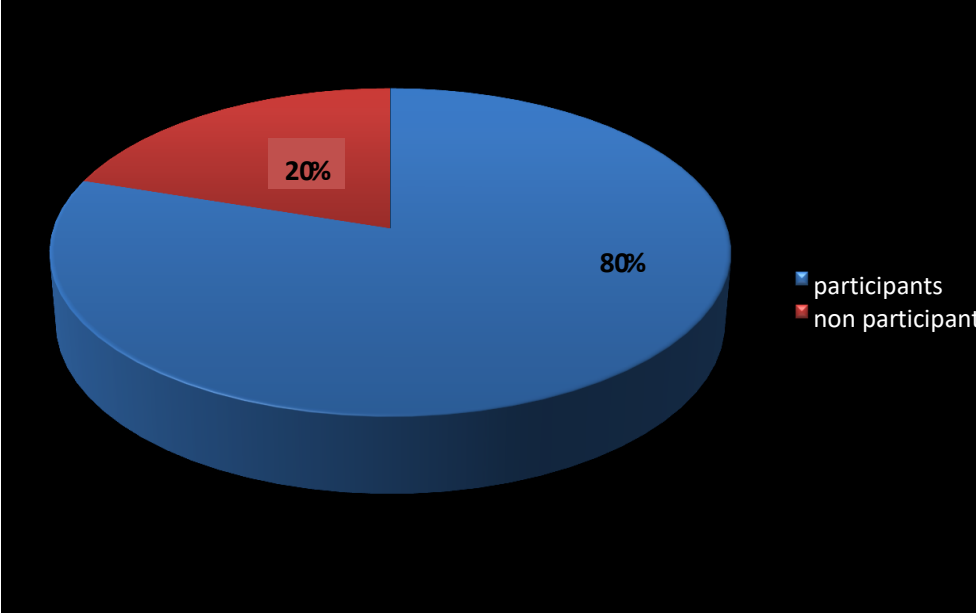


Chart 4.1: Analysis of respondents

Source: Author (2019)

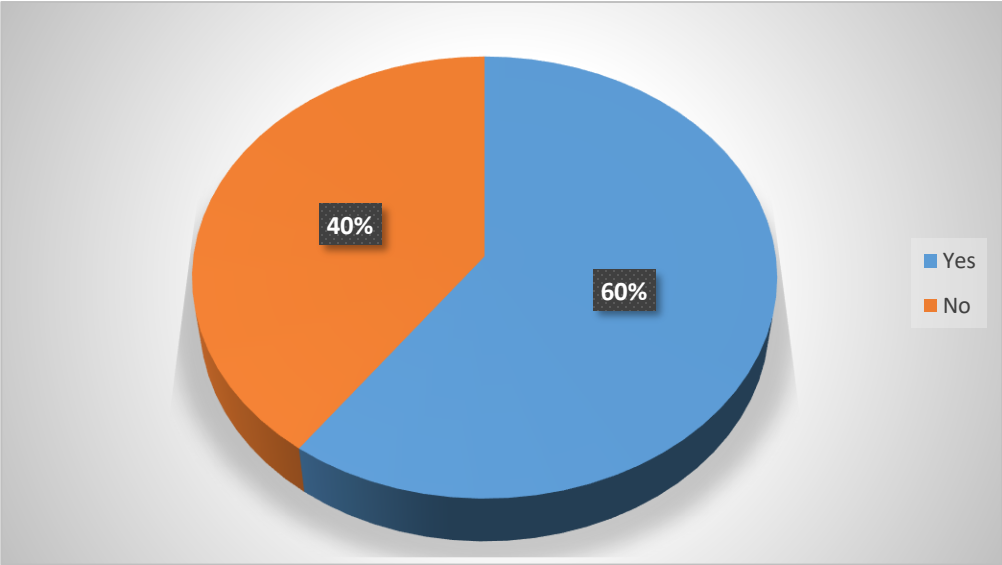


Chart 4.2: Response to the concept of recycled waste materials as being part of sustainable design?

Source: Author, 2019

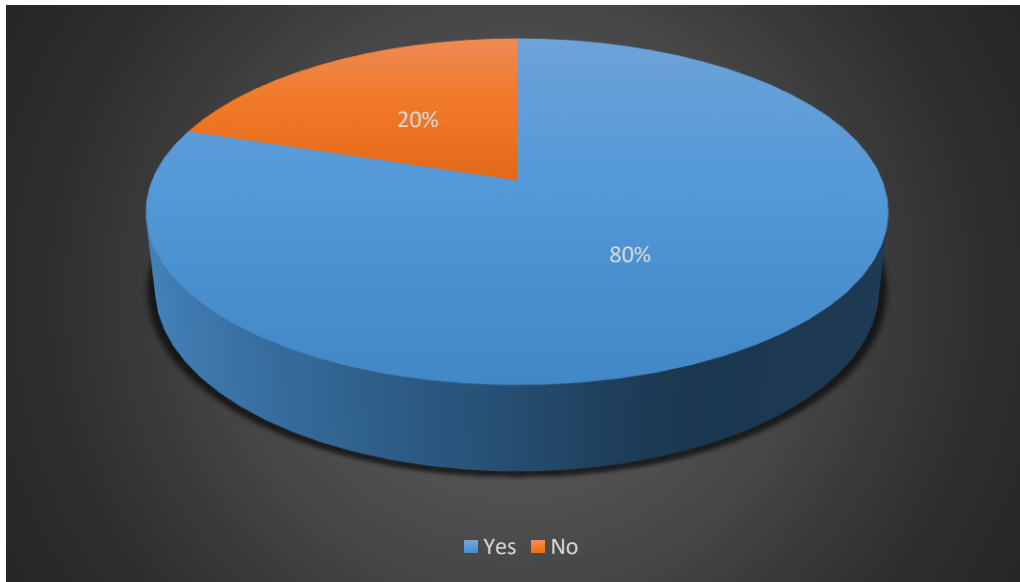


Chart 4.3: Response to concept of African masks patterns as used in furniture design?

Source: Author, 2019

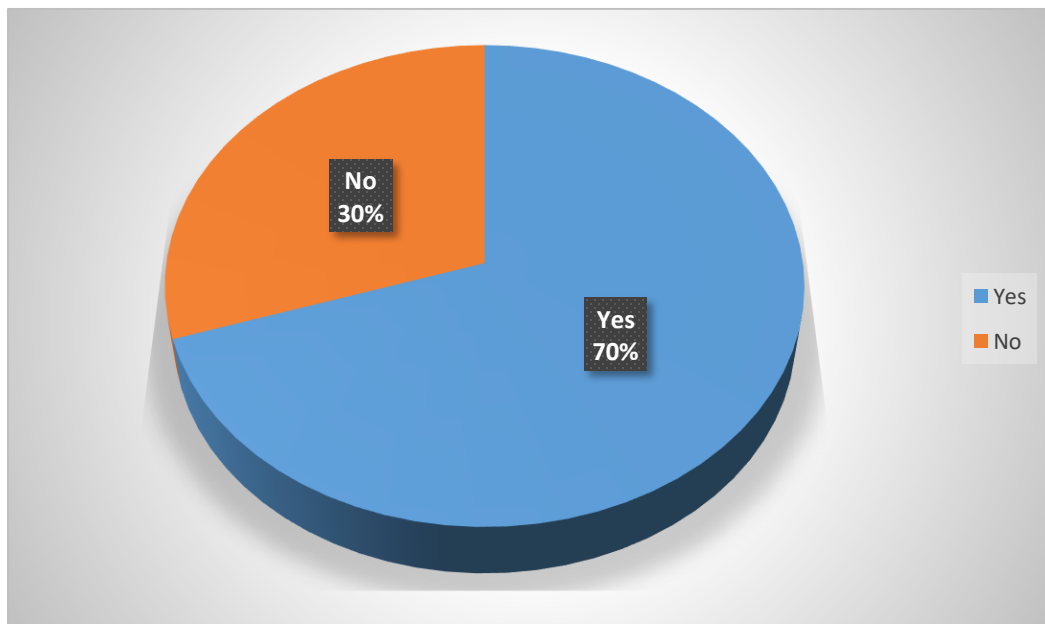


Chart 4.4: Response to the opportunities to the use of Kamba mask patterns in restaurant interior and exterior spaces to create an aesthetic interior space?

Source: Author, 2019

4.8 PRESENTATION OF FINDINGS/ ANSWERS TO RESEARCH QUESTIONS.

With every research there is a goal to achieve to the set objectives that carry the researcher through the case research, with the aim to achieve target objectives and answer research questions. The researcher having analyzed all the data acquired came to a conclusion that a lot needs to be changed from both the interior and exterior spaces.

The researcher found out that they haven't exhausted sustainable design and African design in the initial design of the bar and restaurant. The restaurant does not consider sustainable design as much as it should. The researcher was able to find substitute materials that are sustainable and processes that will contribute to a sustainable environment. The researcher was also able to come up with one theme for the interior design since the initial design had no particular theme. The researcher also found out that the landscape is in a bad situation due to overgrown trees, trimming them would help curb the situation. A sustainable approach with the elements discussed from chapter two of this research is vital if the site is to maintain its long-term reputation and gain further recognition from the public.

4.9 CONCLUSION

The research carried out is an added verification done on the different design aspects done in the research of recreational amenities. The different layouts used, drawn patterns, color schemes and most importantly existence of the neglected space, their effects on local both local and international customers. The research gives a view on the kind of the restorative spaces that the respondents would prefer, with response such as ambience, experience and interactions. The research further gives room for experimentation and personalization hence providing an opportunity as a designer to maximize an approach of sustainable space hence maintain a serene, balanced and appreciative environment.

CHAPTER 5

5.0 SUMMARY OF FINDINGS CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

With the previous chapters giving an overview of the study, together with the studies literature review that looked at pervious works of other designers with an insight to sustainability and African design, followed by the research methodology where research was carried out and the data collected and analyzed. In this final chapter we look at the summary of the said data findings, give recommendations and solutions for each of the four areas of specialization to conclude with a summary of the whole chapter and suggestions for further study on the matter that is a sustainable design.

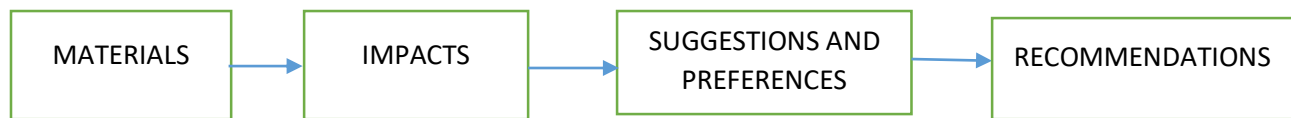


Figure 5.1: Flow chart

Source: Author, 2019

5.1.1 Summary of Data Analysis/ Findings

From the yielded data by involved respondents, the following can be concluded:

- Sustainable design is a quickly picking pace in the built environment as many professionals are noticing the detrimental effects of confined spaces that lack restorative qualities for the users
- In spaces such as restaurants the society are looking for an experimental space that is stimulating and pleasurable
- Places of social interaction such as restaurants should offer restorative aspects for the wellness of its users
- Exposure to different design elements and implications enhances cognitive and overall productivity

- The main aim of a sustainable African inspired design is to create spaces that reconnects us with our own culture and make use of the locally available raw materials other than importing
- A successful design is one that helps define its surroundings

The researcher went deeper in the Kamba culture to point out the unique aspects of Kamba color and patterns. From this she noticed that different colors have different meanings according to the Kamba. The researcher after examining color and patterns of the Kamba also established that it is in fact, possible draw inspirations from the Kamba culture such as use of color and patterns on the walls, abstraction of furniture pieces from the patterns and shapes of Kamba masks. The researcher therefore proposes how color and patterns can be used to improve the quality and experience of the interior and exterior spaces at Katanazi restaurant.

5.1.2 Recommendations

The idea behind being an interior designer in this particular project is to conceptualize and produce aesthetic, functional and safe designs for interior spaces in residential, commercial, cultural, institutional and industrial buildings.

5.2 Interior design

As mentioned much earlier on the literature review chapter, a good sustainable design is one which provides a solution in the face of a problem. Recommendations to be made are to be considered with regards to what the users desire, design that is environmental friendly, appealing and longlasting. in the interior design of Katanazi bar and restaurant the above factors are the influence behind the researcher's recommendations for the space. Focused on achieving a sustainable design, patterns with sustainability and insights from the findings in chapter four the following are the recommendations for the space of Proposed concept layout of the restaurant.

5.2.1 Lighting

For lighting, the researcher proposes the use of recycled wine and colored beer bottles to create ambient environments and also create therapeutic illuminations in the bar counter and interior lounges. These areas do not necessarily have to be allocated too much lighting but warmer illusion lights. This combined with Kamba mask patterns branded lampshades made from responsibly sourced materials would uplift the Katanazi bar to give them more aesthetic appeal.



Figure 5.2: Fantasy lamps from recycled wine bottles

Source: <http://weburbanist.com>

5.2.2 Ceiling

Recycled Wood Ceilings from Nail barn wood to your ceilings produces genuine country flavor. With or without weathered paint, rugged antique wood has a rich texture and color that cannot be mimicked. Removing nails and staples may make it labor intensive, but it gives a similar feel to barn wood and is much easier to find. Use old stockade fence pickets with the ends cut off for another source of easy-to-find and generally free wood for your ceiling. As with hanging metal, be sure to locate the joists and screw into them for the best results.



Figure 5.2.1: Sample ceiling from recycled wood

Source: www.woodtrac.com

As opposed to the MDF boards used in designing the kitchen cabinets, recycled timber should be used to enhance their sustainability and significantly reduce environmental and health concerns to the kitchen staff and other users. These have however to be combine with sustainable stone or marble tiles for the table tops as laminates are unsustainable. Natural stone for example should be considered as it offers a broad spectrum of colors ranging from light grey through brown to blue, with deposits of snails and shells making every stone absolutely unique. Stones come in all shapes and guises smooth or rough, rugged or modern, warm or cold to lend architecture a distinctive character. The diversity of natural stone is revealed in the vast design scope it offers in terms of colors, textures and surface finishes which can be crafted by hand or machine. The natural stone can also be used in flooring activities both exteriorly and interiors. Tiles from stained glass are however the best recycled material for such placement.



Figure 5.2.2: Recycled glass countertops



Source: www.kitchendesignr.com

5.2.3 Flooring

The flooring is one of the key elements of interior architecture which when it comes to restaurant design must be considered with a lot of care. The floor is one of the parts of a building which experience more wear and tear due to heavy trafficking. The material selected for floor finishing should be durable and environmentally friendly (sustainable). The material should also have the ease in cleaning. The ease with which the material covering the floor is cleaned will lessen the worker of cleaners thus saving energy which could be wasted. The researcher proposes bamboo and cork flooring which are sustainably sourced for the bamboo and cork trees grow and mature faster. The wood floor finishing is non-slippery so the risk of customers slipping or tripping is solved and also sound absorption is perfect.



Figure 5.2.3: Bamboo flooring

Source: <http://www.todayshomeowner.com/sustainable-flooring-bamboo>

Sustainable flooring is achieved by use of materials that doesn't deplete natural resources when harvested. In fact, both bamboo and cork regenerate themselves and can be maintained indefinitely. In the side of flooring opt for materials that come from sustainable sources and do not use harsh chemicals in the production process, such as bamboo, cork, linoleum and wood, which are also recyclable or biodegradable, and products with minimal chemical treatments in their finishing. The natural slate and stone provide good green options as they have built-in durability, essential when they have to cope with such a high level of traffic. The flooring must use wood that is sustainably sourced or recycled timber from other products; natural linoleum uses linseed oil from flax with other plant materials and can be 100% biodegradable.

5.2.4 Wall finishes and color schemes.

The choice of color will also be significant as color psychology plays a significant role in Color has an incredible effect on mood, perception, and likes and dislikes. It's programmed into the human mind. The reptilian mind is the part that is programmed to survive. It's what makes one instinctively know that fire is bad, that red is danger, and that green is comforting. Humans developed over millions of years and color is a big part of our perception. It's why orange is often used to make products that are high priced look more inviting because psychologically it makes them seem more affordable. And it's why red is the most prominent color in fast food logos –red stimulates appetite. And it's why one will have trouble eating food that is blue. The researcher therefore proposes a combination of orange and some shades of red and other colors that are relevant to dining places. The researcher also recommends wall finishes that are painted with water-based paints, and also tinted walls and windows for lighting.

5.3 Furniture

For this project, the researcher intends to creatively fuse current furniture trends like the mid-century modern furniture designs with the Kamba mask patterns inspiration while still paying attention to the sustainability of the materials and their portability to give the spaces a cultural identity. According to Karim Rashid, an object is meant to be a reflection of its user, it is supposed to be self-contained, the message is very simple and human, soft and engaging.

Material: Wood is a suitable material for creating interesting pieces of furniture. Furniture pieces will be very hard-wearing and easy to maintain without forgetting that as it reaches its maximum use it does not end up as waste rather wood can become manure and be useful upgrading minerals in the soil. Well- made furniture pieces with Kamba mask patterns will spruce up the restaurant spaces creating areas of interest.

Soft furnishing: Upholstery and cushions should be used in the bar and restaurant areas. The Kama mask patterns could possibly act as the medium of non-verbal communication to the customers for the locals while letting the international visitors enquire what the words mean in an aim of keeping them fascinated.



Figure 5.3.1: Furniture with African patterns

Source: <https://www.webstaurantstore.com/>



Figure 5.3.2: Outdoor furniture with comfortable cushions

Source: outdoor patio (www.google.com)

5.3.1 Bar stools

The bar stools recommended are very comfortable unlike the ones used at bar of the restaurant. Their seats are padded.



Figure 5.3.3: Bar stools

Source: <https://www.interiorflair.co.uk/product/upholstered-black-pattern-fabric-bar-stool>

5.4 Exhibition and Display

The exhibition and display of a restaurant serves the purpose of advertising drinks and foodstuffs, cautions and directions, aesthetic value and entertainment. Therefore, their contribution to the entire interior environment is significant enough hence sustainability is paramount.

Display units: The researcher proposes to use the Kamba mask patterns as an inspiration for the in-wall storage, in wall storage blend in into the décor rather than standing out and this makes them suitable for minimalist contemporary interiors. And because of that, a large built-in piece of furniture can look slenderer and smaller than a free-standing one with the same dimensions. Moreover, built-ins provide lots of storage. They can occupy an entire wall without making the room feel considerably smaller. They help create a cohesive look throughout and can be combined and coordinated with the rest of the décor, they can also be tailored to fit your specific needs.

Lighting can also be easily integrated into the built-in furniture and this can bring about a wonderful aesthetic effect. Visibility in the drinks on display also depends on the lighting and therefore the two should blend harmoniously. The display stand should be designed from recycled materials that can be modified to stand out and be aesthetically appealing.

Signage: To solve the problem of pasting notices directly on the walls, there should be a centrally placed notice board that blends in with the elements in the space and color. Recycled wood is the best framing material for this. Other features such as menus can be done in illuminated and reflective materials that do not have to consume excessive energy. Signage schedules have also to be erected at strategic points that lie at the eye level ranges to avoid strain. The restaurant logo and slogan needs to be a point of focus.

The researcher recommended for the restaurant to come up with a bigger, precise and visible billboard at the restaurant main entrance and installed with accent light systems so that it is visible even at night. Incorporate light on the high bar shelves and cabinets so as to enable customers to identify their favorite drinks. Also incorporate light exhibitions with gardening so as to create an appealing functional space.



Figure 5.4.1: Display for drinks

Source: back bar designs (www.google.com)



Figure 5.4.2: Television stands

Source: television stands (www.google.com)

5.5 Landscape design

The existing landscape has overgrown trees and unmaintained pathways. The car park area is not even defined; it is just an area where grass no longer grows. The small garden near the entrance is not maintained as well. The recommendation for the landscape is to make it sustainable and a healthy environment by having defined pathways to all buildings in the plot, having a defined car park area to prevent dust from filling the landscape. The landscape will also have a swimming pool and some relaxing areas.

The landscape complements the interior environment of the restaurant hence the following are recommended;

- a) The planting of drought resistant plants within the landscape to aid survival during the dry seasons are recommended.
- b) Planting more vegetation (grass) on the bare parts of the landscape and places with less vegetation is recommended.
- c) The used water in the kitchen should be recycled and used to water plants in the landscape.

- d) Designing a modern car park area for the house to create some order in the entire compound.
- e) Design of a modern gazebo for relaxation is recommended
- f) Trees and shrubs should be planted to make the more appealing.

The researcher recommends sufficient landscape lighting, and also soft landscape features such as water features, outdoor bench and a pergola. Outdoor light is mandatory because it transforms the garden into a usable space at night. The light can be used to illuminate the garden benches and shadowy corners of the restaurant outdoor environment. And also for security reasons as illustrated below.

There is need to develop a waste management plan in the landscape to restore its sanctity. Majority of the clientele prefer dining from the exterior space and so the need to emphasize on its efficient design, sustainability and aesthetics. The walkways and drive ways are to be designed by naturally available materials such as natural stone. Recycled stone and bricks however provide color varieties for landscape design especially for walkways and borders.



Figure 5.5.1: Retaining walls

Source: Landscape ideas (www.google.com)



Figure 5.5.2: Walkways

Source: Landscape ideas (www. Google.com)

To enhance shades the researcher proposes that the available mature trees be retained as they also enhance the scenic beauty of the environment. To minimize cost expenses, native and locally available plant and grass varieties will be used in the lawns. Landscaping with native wildflowers and grasses improves the environment. Natural landscaping brings a taste of wilderness to urban, suburban, and corporate settings by attracting a variety of birds, butterflies and other animals. Once established native plants do not need fertilizers, herbicides, and pesticides or watering, thus benefiting the environment and reducing maintenance costs. Gardeners and admirers enjoy the variety of colors, shapes, and seasonal beauty of these plants. The researcher also proposes the uses of climbers on the concrete wall to enhance the aesthetic beauty and harbor wildlife. Climbers come in a variety of colored flowers and species hence will provide color to the scenery.



Figure 5.5.3: *Shrub varieties*

Source: *www.cutabovefw.com*

The researcher recommends sufficient landscape lighting, and also soft landscape features such as water features, outdoor bench and a pergola. Outdoor light is mandatory because it transforms the garden into a usable space at night. The light can be used to illuminate the garden benches and shadowy corners of the restaurant outdoor environment. And also for security reasons.



Figure 5.5.4: *Outdoor lighting*

Source: *Landscape ideas(www.google.com)*



Figure 5.5.5: Outdoor shades

Source: www.landscapemagazine.co.uk/

The researcher will also add a swimming pool to the landscape to serve as a recreational center that attracts people from all age groups.



Figure 5.5.6: Swimming pool

Source: *Landscape ideas*(www.google.com)

The implementation of these recommendations as per the four electives in interior design will result in a holistic sustainable environment that is healthy, aesthetically pleasing and functional therefore, resulting in a modern sustainable interior design for Katanazi bar and restaurant.

5.6 Conclusion

There is a dire need for a design revamp of the premise as advocated by the respondents. The existing design and the choice of materials are unsatisfactory and unsustainable to users and the environment at large. There is a limitation on the strengths and opportunities through the participatory SWOT analysis conducted by the researcher. The demand for a more sustainable interior architecture, furniture, exhibition and display and landscaping is the only solution towards keeping the premise environmental friendly and at the same time be able to withstand the rising completion from the neighboring restaurants. Aesthetic beauty is also significant and should be the point of focus so as to attract the young adults who happen to be the majority clientele. The choice of the concept of recycling based design was encouraged overwhelmingly by the respondents. The researcher discovered that there was need for design to be an agent of the recycling activism as it is a better tool of enhancing aesthetics, functionality and contemporary themes into the forms developed from recycled materials. The researcher could therefore proceed to recommending appropriate concepts and material that could be recycled in the design process towards the realization of the title.

5.7 Suggestions for further studies

This research mainly focuses on the use of African mask patterns and recycling in designing an interior space. It was in no way exhaustive. Being an exploratory study of an area that has not been ventured into by many researchers, it has opened up various opportunities for further research. The research was on interior design but it is known that design as a discipline has various areas of specialization namely; Graphic, Product, Illustration and Fashion and Textile design. Therefore, research needs to be done to investigate how African masks or recycling can be used in these areas of design specialization.

From this study it has been established that there are various ways in which recycling and African mask patterns can be incorporated in interior spaces. The data used in this study is viable based on the number of respondents interviewed. Further to this study, more work needs to be done in terms of increasing the number of respondents and selecting respondents from a different region

The researcher recommends the following key areas as follow-ups to the current study:

- A study on managing waste through re-use and recycling in interior design application. This will help solve environmental issues to a certain percentage. Mostly, waste is managed through dumping instead of creatively recycling and re-using it.
- A research on waste as a solution to interior design problems is necessary to ensure that local designers stop over relying too much on imported products in solving interior design problems.
- The African culture should be encouraged by researching on different ways that this vast culture can be incorporated in interior design.

6. REFERENCES

- Binder, D.A. and G.R. Roberts. (2003) Design-based methods for estimating model parameters." In *Analysis of Survey Data* (R.L. Chambers and C.J. Skinner eds.) Chichester Wiley. p. 29-48.
- Bloom K. C. & Trice L. B. (2007) Sampling. In *Introduction to Nursing Research Incorporating Evidence-Based Practice* (Boswell C. & Cannon S., eds), Jones and Bartlett Publishers, Boston, p. 121-140.
- Chambers, R.L. and C.J. Skinner eds (2003) *Analysis of Survey Data*. Chichester. Wiley. 398 p.
- Chao Huang, Long. December 2018. *Sustainability*, Volume 10, Issue 12.
- Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, California: Sage Publications.
- Creswell, J. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, California: Sage Publications.
- Creswell, J. (2003). *Research design: Qualitative, quantitative and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Cutlip, K. (2012). *Green Living, how to Use Recycled Wood*. Retrieved 01 24, 2012, from greenliving.nationalgeographic.com.
- Daniel Vallero, C. B. (2008). *sustainable design, the science of sustainability and green engineering*. Canada: Wiley and sons inc.
- Dorst, Kees; Cross, Nigel (2001). "Creativity in the design process: Co-evolution of problem–solution"
- Ecobles, (2008, 05 28). <http://ecoble.com/2008/05/28/ten-clever-furniture-designs-from-recycledmaterials/>. Retrieved 11 01, 2012, from *tenclever furniture designs from recycled materials*.

Environmental Protection Agency, (2009), Wastes - Resource Conservation -Reduce, Reuse, Recycle. Fairchild

Flick, U. (1998) an introduction to qualitative research. Thousand Oaks, CA. SAGE Publications, Inc.

Gubrium, J. F. & Holstein, J. A (2003) Postmodern interviewing. Thousand Oaks, CA.: SAGE Publications, Inc.

Heath, Elizabeth (2010). Anthony Appiah; Henry Louis Gates (eds.). Encyclopedia of Africa. Oxford University Press. pp. 88–89, 14–15.

John w.creswell, University of Nebraska. Design research, qualitative and quantitative mixed method Approach 2nd edition.

Kerlinger, F. N. (1986). *Foundations of Behavioral Research*. New York: Holt, Rinehart and Winston.

Kothari, C. R. (2004). *Research Methodology: Methods and Techniques* (2nd Ed.). New Delhi: New Age International limited.

Kumar, R. (2005). *Research methodology: a step-by-step guuide for beginners*. London: Sage Publications.

Lauriel, Brenda. 2003. "Design research: Methods and perspectives." Cambridge, Massachusets, London, England: The MIT press.

Lehtonen, R. and E.J. Pahkinen. (2004). *Practical Methods for Design and Analysis of Complex Surveys*. Second edition. Chichester. Wiley.

Loehrlein, M. (2009). *Sustainable Landscaping*. Retrieved 01 24, 2012, from <http://sustainablelandscaping.us>.

Loehrlein, M. (2009). *Sustainable Landscaping*. Retrieved 01 24, 2012, from <http://sustainablelandscaping.us>.

Loehrlein, M. (2012). *sustainable landscaping*. Retrieved 11 01, 2012, from <http://thesustainablelandscape.com/>.

MCLENNAN, JASON F. 2004. *The Philosophy of Sustainable Design*. kansas: Rolland enviro 100.

McLennan, John F. 2004. "The Philosophy of Sustainable Design." In *The Philosophy of Sustainable Design*, by John F. McLennan. kansas city: eco tone publishing company.

Mugenda O and Mugenda A. (1999), *Research Methods; Quantitative and National Council for Interior Design Qualification, Inc.* 2004

Pambaboma. (2012). *interior-decor-accessories-made-from-recycled-materials*. Retrieved 11 01, 2012, from <http://www.pambaboma.com>.

Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods*. Newbury Park, Calif.: Sage Publications.

P.T. Anastas and J.B. Zimmerman (2003). Design through the Twelve Principles of Green Engineering. *Env. Sci. and Tech.*, 37, 5, 94A-101A.

R Carlson, J Corliss - *Games and Culture*, 2011 - journals.sagepub.com

Reis, H. T. & Judd, C. M. (Eds.) (2000). *Handbook of research methods in social and personality psychology*. Cambridge, UK: Cambridge University Press.

Ruff, C.L., & Olson, M.A. (2009), The attitudes of interior design students towards sustainability, *International Journal of Technology and Design Education*

R. Nowosielski, A. Z. (2007). Recycling's technology, *Achievements in Materials and Manufacturing*, 85-88.

Rott.Michael Longnecker, 2008 An introduction to statistical methods and data analysis,6th edition.

University for the Creative Arts. (1995). *The Centre for Sustainable Design*. Retrieved 10 28, 2012, from <http://cfsd.org.uk/>.

Winchip, S., (2007), Sustainable design for interior environments, New York: www.vetrazzo.com, USA

7.0 APPENDICES



University of Nairobi

College of Architecture and Engineering

School of The Arts and Design

7.1 Appendix

SEMI STRUCTURED INTERVIEW GUIDE

The researcher is a final year B.A. Design student at The School of Arts and Design, University of Nairobi, seeking to study ***KAMBA MASK PATTERNS AND RECYCLING IN THE CREATION OF AESTHETIC RESTAURANT INTERIORS, NAIROBI KENYA.*** Kindly assist by filling in the Interview Guide. The report will strictly be for scholarly purposes only.

In this section, please tick the correct answer.

Manager []

Waiter []

Waitress []

Customer []

Are you familiar with the concept of recycled waste materials as being part of sustainable design?

Yes..... No.....

Are you familiar with the concept of African masks patterns as used in furniture design?

Yes..... No.....

Do you think there are opportunities to the use of Kamba mask patterns in restaurant interior and exterior spaces to create an aesthetic interior space?

Yes..... No.....

If yes in the above, in what ways and manner? You can tick more than one.

As interior finish material.....

For décor purposes.....

Thank you for taking time to respond!

TIME SCHEDULE

B.A. Design Project Paper Timeline

MABUKA NYAMOITA OLPHA– B05/1119/2017

Academic Year 2019 – 2020

Table 7.5: Time schedule

NO	Activity to be done	Date	Responsible
1	Project paper guidelines discussion	11/9/2019	MM/ALL
2	Chapter 1 Draft	18/9/2019	ALL
3	Chapter 1 – Critique, Discussion & Correction	25/9/2019	INDIVIDUAL
4	Chapter 2 Draft	2/10/2019	ALL
5	Chapter 2 – Critique, Discussion & Correction	9/10/2019	INDIVIDUAL
6	Chapter 3 Draft	16/10/2019	ALL
7	Chapter 3 – Critique, Discussion & Correction	23/10/2019	INDIVIDUAL
8	Chapter 4 Draft	30/10/2019	ALL
9	Chapter 4 – Critique, Discussion & Correction	6/11/2019	INDIVIDUAL
10	Chapter 5 Draft	20/11/2019	ALL
11	Chapter 5 – Critique, Discussion & Correction	4/12/2019	INDIVIDUAL
12	Handing In- (Tentative)	18/12/2019	ALL