PRODUCTION OF TYPEFACE USING THE LONG-HORNS OF ANKOLE CATTLE: A CASE OF MBARARA MUNICIPALITY

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A DISSERTATION SUBMITTED TO THE DIRECTORATE OF RESEARCH AND GRADUATE TRAINING IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTERS DEGREE OF ART AND INDUSTRIAL DESIGN OF KYAMBOGO UNIVERSITY

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DECLARATION

I, HIMBISA NIMROD, I hereby certify that the content of this report is original and has never before been submitted to any university for an award.

…….

Signature Date....……

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APPROVAL

This is to confirm that the dissertation entitled *Production of Typeface using the long horns of Ankole cattle: A Case of Mbarara Municipality* was carried out by HIMBISA Nimrod (18/U/GMID/19599/PD) and is now ready to be submitted for examination.

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DEDICATION

I dedicate this research to my family and supervisors for the academic support rendered towards me for the successful completion of my research. Lastly, I dedicate this research to all those who helped me with the necessary information during interviews regarding my research topic.

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I want to sincerely thank my friends and family for their unwavering support, encouragement, and understanding throughout this journey. Their patience and belief in my abilities were the pillars of strength that sustained me.

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FAO Food and Agricultural Organisation

ABSTRACT

The purpose of this study was to develop typeface from the long-horns of Ankole cattle with the aim of preserving the Ankole heritage through their creations. The objectives of the study were to; examine the long-horned Ankole cattle of Mbarara, explore ideas for creating long-horned Ankole typeface and develop typeface from long-horned Ankole cattle. The study had a population of 13 respondents who provided information through interviews and analysing documents in the possession. The study was qualitative and used descriptive approach. The findings indicate that long-horned Ankole cattle had numerous characteristics suitable for the creation of typeface, providing wide range of options to fully develop and create typefaces. The use of manual and digital process was essential in the refinement of the final characters. The findings could impact graphic designers by introducing a unique, culturally enriched typeface that can be used in various design applications. The study highlights how integrating cultural elements into typeface design using an exploratory research design can enhance the visual identity and storytelling aspects of graphic design projects. By creating typeface that embody the distinct features of the Ankole long-horned cattle, designers can add a layer of cultural significance and authenticity to their work. The study also recommends exploring other characteristics of the long-horned Ankole cattle for typeface creation, further expanding the variety of culturally inspired typeface available for use in the graphic design industry.

CHAPTER ONE
INTRODUCTION

1.0 Overview

This research aimed at designing new typeface derived from the long horns of Ankole cattle from Kashaari County in Mbarara municipality. This section focuses on the historical information related to the long-horned Ankole cows from western Uganda. The historical contribution of their horns towards the development of artifacts is critical in the enhancing the social economic interests of the local community of Mbarara municipality. Furthermore, it is crucial to comprehend the cultural significance and customs connected to Ankole long-horned cattle in order to preserve the area's rich legacy through typeface creation. Therefore, this chapter presents the background, statement of the problem, objectives, research questions, significance, study scope and definition of the operational terms.

1.1 Background to the study

The Ankole Long-Horned Cattle are raised in the semi-arid "cattle corridor" that runs along the Uganda, Rwanda, and Burundi borders in the Rift Valley. Here, the cattle live and thrive on scanty pasture and water. The Ankole Cattle were bred to produce long horns that protect them against lions, leopards and hyenas by forming a tight close-fitting circle as their horns face outward towards predators. These animals are valued as a source of wealth in the community because of their large numbers, size of the cows, and their horns that can grow to over 2.5 meters of maximum length and decorated skin colour. According to an article on Newly evolving pastoral and post-pastoral grasslands of Eastern Africa published by Lind et al. (2020) on November 10, 2020, in South-west Uganda and Rwanda, cattle were equated to royalty to the pastoralists of that region whose lives were intertwined with their cows and their lives rotated around their cattle. Amongst the Bahima community in Uganda, the day was divided into 20 periods where 95% of time was dedicated for cattle related activities. The diet of cattle keepers in this region excluded meat except the mixture of blood from the animals' veins with milk (Blanc, 2020).

The horns of the Ankole cattle are often sold to art lovers who transform them into artefacts to adorn beauty and for decorative purposes. These animals are good to rear because they endure extreme weather and require less food and water to survive (Bwindi National

Park, 2020). Slaughtering a healthy cow was tantamount to a form of cannibalism. Infertile cows and extra bulls were at times slaughtered for special occasions and no part of the slaughtered cow would be wasted. The animal hides and skins were used as mats, drum-coverings and clothing; cow dung was applied on the walls of buildings with decorative patterns locally referred to as Imigongo art while the horns were crafted into musical instruments and ornamental jewellery (*Figure 1*).

Figure 1. Products made out of cow horns.
Source: https://www.hornproductsuganda.com

1.2 Historical background of creating typeface

1.2.1 The History of European typeface

The art of typography has been practised since the first seals and coins were made in antiquity using punches and dyes (George, 1922). Typography, type-founding and typeface design began as closely related crafts which first emerged in mid-15th-century. When creating letters, each letter-form was engraved, at actual size, on the end of a steel rod called a punch which was used to strike a copper matrix from which a three-dimensional rectangular block of metal type was cast in an adjustable mould of which the block of type contained a raised letter image, in reverse, on its face. To print a page of text, the pieces were hand composed

or set next to one another, prepared with ink, and impressed on paper. These early typeface designs were crude and irregular forms. The paper used to print text from type had a thick, spongy quality and dampened before use to soften its fibres so that the printing ink would adhere to it (Adams, 1978).

The letter-forms used in systematized typography were modelled after the mid-15th century handmade letter forms, which embodied three thousand years of evolving letter design. The earliest forms of text were based on the scribal letter known as texture or textual is, which was produced by the strong Gothic spirit of black letter in the hands of German region scribes. Initially European typeface were black letter, followed by Roman serif, then sans serif and then the other types. William Caslon IV designed the serif-free typeface which were over 300 type faces in 1816 regarding the 42-line Bible. Early Spanish prints were Germans who started out using contemporary Roman typefaces but quickly switched to Gothic designs based on letter shapes from Spanish texts (Fi Forrest, 2021).

The use of the pointed pen for writing, steel engraving techniques, and Baroque and Rococo aesthetic trends all contributed to pave the way for the gradual transition to modern type in the 17th and 18th centuries. Vertical stressing replaced tilted stressing, and complete rounds were condensed. Crisp bracketed serifs developed into sharp, delicate and finally fine straight lines (Ellen, 2010). The details improved and became clear and accurate. Modern Romans were shaped with a rounder, less geometric shape in Britain and the United States than Didot and Bodoni's designs; a noticeable distinction is that European designs have two serifs at the top of the upper-case C, while Anglo-American faces have just one. The most significant creation of typefaces with reinforced serifs characteristic of the well-known Egyptian typefaces occurred in the nineteenth century. Slab-serif with sanserif typeface were mostly for advert purposes, designing title pages, without forgetting other eye-catching print designs. By 1820, most of the western countries had adopted modern Romans and italics for body texts.

Since printing and typography had been a simple craft for centuries, it was to deal with so many difficulties of an industry-ruled overwhelmed society, which resulted in the compilation and typographical design of the text, which was more controlled by keyboards than manual typesetting techniques. Because of the industrialization process, besides *Garamond* and *Bodoni*, new contemporary typeface family such as *Futura*, *Times*

and *Helvetica* were successfully created, rapidly gaining the statuses of a trademark uniquely used for branding products or publications. In the subsequent and current era of digital typesetting, all designs from this era and the vast majority of typefaces currently in use have their roots. Graphic design evolved into a more or less separate field from the traditional typography of books. The conflict between these two streams had a considerable impact on how stylistically the typography of the 20th century developed. New generations of hitherto unrelated designers were introduced to typography by the advent of digital media. By the 20th century, computers had made the process of typeface design quite simple, which allowed the number of types to quickly grow to thousands today. (AnomieBOT, 2021).

The development of typography, type-founding, and typeface design can be seen by looking at the historical context of typeface creation. The art of typography has its roots in antiquity, when seals and coins were made using punches and dyes. Typography became an art form in the middle of the 15th century when letters were punched out with punches and hammered onto copper matrices to make metal type blocks (Brewminate, 2022). These early typeface designs had erratic shapes and shoddy construction. Black letter styles were the foundation of early European typeface, which later evolved into Roman serif and sans serif forms (Bilack, 2019). Gothic patterns based on letter forms from Spanish texts were a major impact on Spanish prints. The adoption of pointed pens, steel engraving processes, and other developments during the 17th and 18th centuries contributed to the development of modern type (Hind, 2011). These types include Futura, Helvetica, Flanklin gothic among others.

1.2.2 The history of African typeface

Ancient African writing is the world's oldest and largest collection of ancient writing systems, and is home to the world's first identifiable proto-writing (Amenuti, 2015). Evidence of such dates to pre-historic time indicates that Africa's oldest known writing system is over 6,000 years old. The purpose of writing has always been to communicate ideas, and humans have been doing so for at least 100,000 years in the form of engravings, such as those uncovered at the Blombos Cave in South Africa. Such engravings would later evolve into so-called proto-writing or identifiable symbols that were used to conveyed information but are not known to be part of language (Acient African history, 2017).

Many people automatically associate African typeface with rough writing, tribal images, and loosely geometrical characteristics when they want to use typography to evoke

an African sensibility in their work. Some of the most well-known African typefaces are influenced by the African Jungle, textiles, and regalia. Examples include African Elephant Trunk, Lagos Regular, and Afro flare regular. However, there is still a gap of developing more elegant African-inspired typeface. African typeface are qualified by the involvement of a vibrant culture and other ethnical sources of inspirations, which typically distinguish them from the European cultures. A wide range of activities thus being able to bring a fresh new look to the field of typography inspired typeface designers from Africa (Serge, 2014).

One of the top type designers in Africa, Osmond Tshuma, developed a historically-inspired typeface that concentrated on the effects of colonialism's legacy in South Africa as well. Even though his expertly designed typeface is called African, it has been adjusted to express a vocal message and a unique point of view that encourages dialogue, not the local culture. Senongo Akpem, the creator of the "African Textile" typeface, likewise creatively employed collage techniques while giving his project a festival feel by visually combining vibrant African textiles. Other typeface designers, like Studio Muti and John Kotze, defined their designs as playful and carefree, communicating the cultures to which they belonged of which I strongly believe is an important aspect when it comes to deriving inspirations from our cultures and thus relying on the visual language when using typography. Another notable typeface in Africa is the hand Typeface produced by Mark Salimu called Nando's in 2016. Nando's collaborated with South African sign-writer and artist Marks Salimu to create a new quirky typeface inspired by South African sign designs and the country's sign-writing tradition. Salimu hand-painted all of the letters and characters on wooden panels, which were then transformed into a unique typeface (Gosling, 2016).

The creations of these designers indicate a mindset that is spreading; cultural heritage that has been misappropriated and distorted for so long can and should be recovered to illustrate what is possible when minds are in search of truth and beauty. The opportunity is there, and black designers in particular are challenged to rewrite the typographic history of Africa and lead it into a promising new era. Through this research undertaking, an explorative view of the long-horned Ankole cows provides yet another opportunity of creating new afro centric typeface to the repository of existing typefaces of African heritage.

In Africa, traditional cultural aesthetics and modern design trends have combined to influence typography and graphic design. Due to the region's diverse indigenous art forms,

patterns, and symbols, which have a rich cultural legacy, the visual language of Africa has been influenced. The idea of combining these conventional components into contemporary design methodologies has gained popularity in recent years.

The work of renowned Zimbabwean graphic designer Saki Mafundikwa is one outstanding example of type design in East Africa. Through his book "Afrikan Alphabets: The Story of Writing in Africa" (2004) and his design firm, ZIVA, Mafundikwa has played a significant role in promoting African design and typography. He emphasises the significance of developing typographic systems that are representative of African culture which I strongly agree with. Additionally, the development of digital technology and the internet has given African designers new chances to present their work and collaborate with other designers around the world. It is possible to guarantee that the typeface appropriately capture the history and cultural significance of the Ankole cattle through collaboration between designers, historians, and cultural specialists. Together, these varied specialists may combine their expertise and inventiveness to produce typeface that are meaningful and genuine to their own cultures in addition to being aesthetically pleasing. Additionally, cooperative efforts might aid in the promotion of the long-horned Ankole typeface. Thus, cooperation is crucial to this study in ways that go beyond the typeface's technical advancement since this study intends to advance knowledge of the cultural relevance of typographic design in Africa and its potential for global influence by bringing these features to light.

1.2.3 The history of East African typeface

Much as typeface have been designed and widely used in Europe and other parts of Africa, East Africa has also made contributions towards developing typeface through different sources of inspiration that are significant to their experiences. Kevin Karanja, a Nairobi-based artist who produced a new commercial typeface called "Charvet," which means all-encompassing in French, was one of the designers who intended to showcase the cultural legacy of the continent and bring it into the digital era. This procedure took six (6) months to complete. Pencil sketches were used to create the first drafts of Karanja's typeface, which were later refined and developed using Adobe Illustrator and Type-face designer. He used his love of geometry as a source of inspiration to develop a magnificent typeface. This self-taught artist currently works as a freelance motion graphics designer, utilizing his background in

typographic design, time spent working in the advertising industry, and lifelong passion for video game animation. (Emile, 2016).

Figure 2. Charvet typeface. Source: trueafricanoriginal.com

1.2.4 Typography design in Uganda

The historical development of typeface in Uganda are traceable to engraving, one of the oldest art forms, found on prehistoric bones, stones and walls in the caves such as the Nyero Rock Paintings found in Kumi District. These inscriptions are related to the early century experiences of expressions, to partly summarise the forms of communication in Uganda kingdoms that was supplemented by drumming as a signal and the use of messengers who trekked long distances to convey the message. However, with the introduction of newspapers in the media industry of the early twentieth century, the use of typeface was expanded in the 1950s and 1960s for printing local newspaper and notices using movable typeface and later on plates for mass production. Typewriters, whose origin dates back to the early 18th century in the United States of America; were a resourceful means of organising typeface before assembling information before printing on paper. They were used to produce characters similar to those produced by movable printers. The typewriter had an array of keys with in-editable characters.

Through the development of the digital means of production using computers, the printing industry in Uganda embraced new technologies and adapted inherent typeface attached to the different software for design production. Graphic designers use available typeface that are free for users to download from the internet besides the default typeface in the computer design software. Information on the records of typeface developed and published by graphic designers in Uganda is scanty except for students in institutions that teach and train graphic design developed a few that. In an effort to supplement existing typeface with original ideas, the long-horned Ankole cows are a useful source of information to create original typeface for use by graphic designers.

1.3 Statement of the problem

Although the long-homed cattle are a cultural heritage and a source of pride to the community along the cattle corridor of western Uganda because of being drought and disease resistant, they are at the brink of extinction in Uganda. Much as the Ankole breed is listed as heritage assets that the contemporary man has inherited from legendary ancestors, there has been no exploration of Ankole long horns as an essential component of visual communication. Therefore, the study explores Ankole long horns as an inspiration for typeface design for posterity.

1.4 Purpose of the study

The purpose of this study was to preserve the long-horned cattle of Ankole through creating typeface derived from the shapes of their horns for posterity.

1.5 Objectives of the study

(i) To analyse the shapes of the long-horned Ankole cattle in regard to typeface creation.

(ii) To explore ideas for creating typeface derived from long-horned Ankole typeface.

(iii) To develop typeface derived from long-horned Ankole cattle.

1.6 Studio guiding questions

(i) What are the characteristics of the long-horned Ankole cattle?

(ii) What design forms can be created from the characteristics of the long-horned Ankole cows?

(iii) How can typeface be created from long-horned Ankole cattle?

1.7 Significance of the study

The study's findings will be substantial to;

The Ankole society as a souvenir of the long-horned Ankole cattle typeface to preserve the cultural heritage of the cattle keeping community through the existence of these typeface, thus the threat to the extinction of the long-horned Ankole cattle kept for generations that are yet to come. These typeface further become memorable artefact for the Ankole Kingdom that can enhance the beauty of magnificent horns. The herdsmen beyond Ankole region will gain pride in sharing the long-horned cattle typeface due to their characteristic values.

Institutions of higher learning will gain new inspiration from locally created fronts that have contributed to the array of characters used by graphic designers beyond the learning environment. Graphic designers will be inspired to adopt cultural heritage typeface to preserve their projects with characters that promote local culture. The research will also create awareness of the existing new typeface style that motivate the students in the design class to create other new typeface using available sources of inspirations in the environment.

Researchers and research users interested in typography will gain more insight from the potential use of existing animals that are highly regarded as valuable to the different sections of the community. Inspiration to create new knowledge from these typeface can further promote new research ideas for local content in the regions of the cattle keeping communities.

Provide guiding information for policy makers to develop policies of national interest towards creating ideas that can uphold the national heritage in the country. The new knowledge contributed aids the decision making processes that override existing challenges that may be a hindrance to the development of new ideas.

1.8 Scope of the study

The research scope range included three aspects of the geographical, content and time scope as presented in the subsequent subsections of this chapter.

1.8.1 Geographical scope

The study was carried out in Nyakisharara cell, Nyarubanga Village, Mbarara municipality in Kashaari County. It is approximately 22.4kms from Mbarara City Centre 9 kilometres (5.6 mi) and North-west of Mbarara, close to Bwizibwera and Ibanda road. The Mbarara

Municipality is surrounded by the Ibanda District to the north, Kiruhura District to the east, Isingiro District to the south-east, Ntungamo District to the south-west, Sheema District to the west, and Buhweju District to the north-west.

1.8.2 Content scope

The content covered the three objectives of the study. The information pertaining to objective number one was centered on the traits of Ankole long-horned cattle and their significance to the Ankole long-horned cattle community, the worth of long-horned cattle in Ankole, and finally the contribution of long-horned Ankole cattle to the social, political, and cultural life of the community. The second objective sought for content that explored ideas for creating long-horned Ankole typeface with characteristics that may represent the thick body appeal and a rusty red solid coating colour of the animals. Information on appropriate anatomy for the Ankole typeface was sought in relation to the main characteristics of the Ankole long cattle horns. The content on the third objective emphasised on developing typeface that culturally bond the Ankole cultural heritage values, the significant values of the long-horned cattle among the Ankole community for integrating ideas for newly designed typeface. Lastly, the content had also encompassed the contribution of the long-horned Ankole cattle to the social, political and cultural life of the community so that ecologically admirable typeface and characters of value are created as a trade mark for the Ankole region.

1.8.3 Time scope

The opportunity for undertaking this study covered a period of three decades on research undertakings that focused on the development of typeface from 1980 to 2020. Literature stretching beyond the three decades were integrated in the study to showcase the historical trends attributed to other aspects of the study.

1.9 Limitations of the study

There was a major problem of insufficient information as related to typeface based on the Ankole long-horned cattle. The herdsmen barely had enough information that was needed during the research. In addition to that, there was also insufficient secondary data to cite from other sources. I therefore had to use data related to other sources of information on the development on typeface outside the area of this research.

Physical access constraints: Farms that had the long-horned cattle were normally for the rich people and therefore access to such types of cattle was merely inevitable. To overcome such a challenge, an introductory letter was presented to access the farms as a university student conducting research.

It was difficult to find a slaughter house for the long-horned Ankole cattle to examine their horns. To successfully find a right slaughter house, I had to use chain referral method to find the necessary slaughter houses. An interaction with the slaughter house managers in their premises made it possible to gather additional information from the employees.

1.10 Definition of operational terms

In order to contextualize this as explained in the following paragraphs, the variable terms utilized in this research are defined.

Typeface Production

A design for a set of characters or typeface based on the Ankole long-horned cattle.

Long-horned Ankole cattle

A breed of domestic cattle with long horns mainly known as Watusi cows.

Typeface

A design for a set of characters or typeface based on Ankole long-horned cattle.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

In this chapter, the scholarly views of other researchers are presented in relation to the production of typeface from a broader perspective. As such, this chapter presents the theoretical framework, the three objectives that sought to examine the long-horned Ankole cattle, explore ideas for creating long-horned Ankole typeface and develop typeface from long-horned Ankole cattle of Mbarara.

2.1 Theoretical Framework

This study uses two theories. The theory of honest signalling in type design urges that the visual characteristics of a typeface can truthfully convey a message or brand's values, and personality. This theory emphasizes the importance of authenticity and consistency in typeface design, ensuring that the design accurately reflects the intended message. The study uses these principles in developing a typeface to create fonts that not only look aesthetically pleasing but also align with the long horns of Ankole cattle and communicate its features effectively. This approach ensures that the typeface serves as a truthful and reliable visual representation of the brand or message, enhancing trust and clarity in communication (Walker, 2001).

The study also uses 1987 theory known as Luc(as) de Groot's Interpolation Theory focuses on the optical behaviour of typefaces as their weight increases. The theory, which offers a formula for estimating intermediate typeface weights based on optical considerations, has had a big impact on type designers' methods all around the world. According to this theory, creating intermediate typeface weights involves placing them on a hollow curve, which generates values lower than those on a linear "average values" line. This theory guides typeface designers in achieving optically correct and aesthetically pleasing typeface weights. Within the world of type designers and typographers, Luc(as) de Groot's Interpolation theory is widely embraced and supported and is regarded as a fundamental idea in contemporary typeface design. It may be difficult to determine the "optically correct" characteristics of cattle typeface, which may be more complex and subjective, if Luc(as) de Groot's Interpolation theory is applied to the creation of long-horned cattle typeface because the theory depends on aesthetics and visual perception, which may not directly align with the

distinctive traits of long-horned Ankole cattle. Since it also calls for particular skills, equipment and automation during the development of typeface, Luc(as) de Groot's Interpolation Theory could be challenging to put into practice during the production of the long-horned cattle typeface.

Luc(as) de Groot's Interpolation theory emphasizes the importance of visual aesthetics in typeface design. Applying this concept can help ensure that the cattle typeface accurately capture the distinct characteristics and aesthetics of long-horned Ankole cattle.
The theory promotes optical precision thus supporting the need for accurately representing the unique shapes and features of long-horned cattle in typeface creation. Therefore, by incorporating a well-established theory from the world of typography, this research can benefit from recognized best practices in design, enhancing the quality of the cattle typeface.

In conclusion therefore, both theory of honest signalling and Luc(as) de Groot's Interpolation theory, guides the research approach to precision, aesthetics, and the potential need for a balance between automation and manual adjustments in typeface production thus the theories being instrumental in influencing the creation of typeface based on the long-horned Ankole cattle as illustrated in the subsequent subsections of this report.

2.2 Examine the long-horned cattle

The concept of the "cattle complex," as explained by Klima (1970), underscores the deep emotional and cultural connection between cattle keepers and their animals. This connection can be harnessed in the design of typeface, where the stylistic shapes of the horns reflect the cultural heritage of the Ankole people. This is supported by Suci, Maryanti, Hardi, and Sudiar (2021), who emphasize the importance of shape, typography, and slogan interaction in product marketing, suggesting that the unique shapes of Ankole cattle horns can effectively communicate cultural identity through typeface design.

The multifunctional roles of male Ankole cattle, as outlined by Kugonza, Nabasirye, and Hanotte (2011), highlight their significance in both practical and cultural contexts. Female cattle, valued for milk production, income, and cultural heritage, also serve as symbols of wealth and status. The selection criteria for breeding, focusing on attributes such as body size, horn shape, and coat color, provide a framework for incorporating these characteristics into typeface design. This aligns with the study's objective of analyzing the

shapes of Ankole cattle horns for typeface creation, emphasizing cultural preservation through design.

Nakimbugwe and Muchunguzi (2003) further illustrate the centrality of cattle in the lives of the Bahima people, functioning as a "living bank" and a measure of prosperity. The involvement of cattle in rituals, festivals, and bride price payments underscores their deep-rooted cultural significance. This reinforces the importance of creating typeface that reflect the Ankole cattle's role in the community, thus affirming the study's focus on cultural heritage preservation.

Wurzinger et al. (2008) note the enduring commitment of cattle ranchers to maintaining Ankole cattle, despite changes in lifestyle over the decades. The long-horned Ankole cattle's status as a cultural emblem remains strong, and incorporating their distinctive features into typeface design can serve as a powerful tool for cultural transmission. This supports the study's relevance in ensuring that the Ankole cultural heritage is preserved through innovative means.

The historical context provided by Rege and Tawah (1999) and Petersen et al. (2004) situates the Ankole cattle within the broader Sanga cattle group, highlighting their unique physical characteristics such as the small hump, long horns, and red coat. These distinctive traits are crucial for developing typefaces that accurately represent the Ankole cattle, ensuring that the design elements resonate with the cultural and historical context.

The majestic appearance and cultural symbolism of the Ankole cattle, described by Bwindi Forest National Park (2020), further validate the significance of this study. The horns' protective function in mythology and their economic value in contemporary markets underline their importance. The study's focus on the longevity and physical attributes of the horns aligns with this cultural narrative, emphasizing the importance of these features in typeface design.

The traditional practices of herdsmen, as detailed by Wurzinger et al. (2008) and Ndumu et al. (2008), illustrate the intricate relationships between cattle and their caretakers. The grooming and selection processes, emphasizing coat color, body size, and horn shape, provide a rich source of inspiration for typeface design. The use of a rusty red color and thick typeface size in the design reflects these traditional criteria, ensuring that the typeface embody the essence of Ankole cattle.

Finally, the preference for a dark red coat color and specific physical attributes in cattle selection, highlighted by Kugonza et al. (2005), further supports the study's approach to typeface design. By incorporating these elements, the typeface not only capture the physical beauty of the Ankole cattle but also convey their cultural significance, aligning with the study's objective to analyze the shapes of Ankole cattle horns for typeface creation.

Overall, the literature underscores the cultural, economic, and aesthetic significance of Ankole cattle, providing a robust foundation for the study on the production of long-horned Ankole cattle typeface in Uganda. The deep emotional and cultural connections between the Ankole people and their cattle, as well as the cattle's distinctive physical traits, are crucial elements that inform the typeface design process, ensuring that the typeface serve as a meaningful representation of Ankole cultural heritage.

2.3 Exploring ideas for creating the long-horned cattle typeface

The human mind is considered unstable and therefore tends to mutate over time (Taylor & Francis, 2010). This instability implies that the mind preserves memories that are more adorable and meaningful. This research, therefore, seeks to identify literature that would enable the creation of legible, magnificent typeface which would be memorable for generations in the minds of the Ankole people.

Typeface carry strong emotional and social signals and can affect user engagement in significant ways. Hence, selecting the right typeface is a very important step in the design of a multi-modal artefact with text (Wang et al., 2020). For instance, the distinctive curvature and boldness of the Ankole cattle horns can be translated into typeface characteristics, creating a visual identity that evokes cultural pride and emotional resonance among the Ankole people. This connection enhances the memorability of the typeface due to its emotional and cultural relevance, directly aligning with the objective of creating a memorable and culturally significant typeface.

The Ankole typeface have been developed with long, thick characters just as the horns themselves to increase typeface legibility. As urged by Sanocki & Dyson (2011), sets of characteristics whose distinctiveness determines their membership identify letters. If being different is important, then improving letter design should improve legibility. For example, the unique length and thickness of Ankole horns can inspire elongated and bold letterforms

that stand out, thereby improving readability. This concept of distinctiveness is crucial for the Ankole typeface, as it needs to be easily recognizable and legible, reflecting the unique physical traits of the cattle.

Rello et al. (2016) provide evidence that readability, measured via mean fixation duration, increased significantly with typeface size. This finding is relevant to the Ankole typeface design as it suggests that incorporating larger typeface sizes could enhance readability. Applying this to the Ankole typeface means creating larger, more prominent letterforms that mirror the impressive size of the Ankole cattle horns, thus ensuring that the typeface is not only distinctive but also highly readable.

A typeface can be represented digitally using one of two techniques. The first method involves collecting already-existing external designs through digitization or some sort of auto-tracing system. This indicates that the design itself was created manually before the usage of a computer. This method is valuable as it allows the incorporation of traditional artistic elements into modern digital typeface. For the Ankole typeface, this could mean digitizing traditional Ankole art patterns and motifs to enrich the typeface design, ensuring a blend of cultural heritage with modern typography.

Utilizing a computer as a tool to develop the letter shapes is the second way to create a digital typeface. Each of these categories such as visual direct manipulation tools, programmable tools, and parametric features tools, applies to these tools (Shamir & Rappoport, 2006). This study addresses the research question for the design ideas, which are most appropriate for creating typeface. For example, programmable tools can allow for precise control over the curvature and thickness of the typeface, ensuring that each letter mimics the unique attributes of the Ankole horns, achieving both aesthetic appeal and functional readability.

It is vital to have a clear understanding of the typeface's purpose because typeface design can be a lengthy process (Clarke, 2021). The traditional aim of type design is to create balance and harmony amongst different forms. A letter should never stand out in a word; rather, it should cohere with its neighbours to better form a word unit and sub-lexical units as well (Sanocki & Dyson, 2011). All the authors prescribed harmony amongst the characters of which it should be connected to the source of inspiration, just as the Ankole typeface. For instance, the harmony between letters in the Ankole typeface can be achieved by ensuring

that the design elements derived from the Ankole cattle, such as the horn shapes, are consistently applied across all characters. This creates a cohesive visual experience that reflects the unity and balance found in traditional Ankole cultural artifacts. Considering these results, it could be argued that there is hardly any research carried out regarding the development of long-horned cattle typeface, which gives the researcher a greater advantage for developing the Ankole typeface. It is interesting, however, that research carried out on typeface in general has a great impact on this study. The principles of distinctiveness, emotional impact, and readability discussed in the literature provide a solid foundation for the development of a unique and culturally resonant Ankole typeface.

By grounding the development of these typeface in established theories of typography and emotional engagement, the research aims to create a typeface that is not only visually distinct but also deeply resonant with the cultural heritage of the Ankole people. The distinctiveness and legibility principles discussed by Sanocki & Dyson (2011) and the emotional impact highlighted by Wang et al. (2020) provide a robust theoretical framework for designing a typeface that stands out and maintains harmony, reflecting the unique attributes of the Ankole cattle.

2.4 Production of long-horned cattle typeface

It is important to consider how technical, time-consuming, and expensive you want to get into typeface production before you get started. How much time and money you choose to invest in developing your typeface will depend in part on how it will be used. Last but not least, if you are developing a typeface that will be used by others, you will probably need to devote a lot more time to the process and spend money on some expensive software (Ewer, 2016). This consideration is crucial for the development of the Ankole typeface, as the intended widespread use among the Ankole people and beyond will require significant investment in both time and resources to ensure a high-quality, versatile typeface.

It can be awkward and time-consuming to first define letter-forms by hand before computerizing certain shapes once your design is established. However, the first few characters must be crafted in graceful shapes on paper before being digitally refined (Clarke, 2021). This study emphasizes developing preliminary drawings of the typeface on paper based on the features of the Ankole cattle before refining them digitally using a Wacom drawing tablet. For example, the unique curvature of the Ankole cattle horns can be sketched

to capture their elegance and then translated into digital form to maintain the integrity of the original shapes. This process ensures that the distinctive physical traits of the Ankole cattle are accurately represented in the typeface design.

Schenker (2018) claims that knowing the typeface anatomy is essential for a designer since it aids in selecting the appropriate typeface for particular projects and objectives. The literature review shows that when you understand the typeface anatomy, you will be able to develop a perfect typeface. Therefore, the Ankole typeface anatomy will be created based on the anatomy of the long-horned cattle. For instance, understanding the proportion and balance of the horns can inform the design of the ascenders and descenders in the typeface, ensuring that the final product is both aesthetically pleasing and functionally effective. This detailed anatomical approach guarantees that the typeface not only looks good but also serves its intended purpose well, resonating deeply with the cultural heritage of the Ankole people.

Monitor (2021) suggests apart from selling the horns, there is much more you can do with them after the slaughtering process. This concept of value addition is highly relevant to this study since both the crafting of physical horns into valuable items and the creation of typeface from the symbolic representation of these horns underscore the importance of value addition, cultural significance, and economic potential in the context of Ankole cattle. creating valuable items out of the horns which the study objective derives it's inspiration of creating more valuable items out of the cow horns. By developing a distinctive and culturally resonant typeface, you are effectively adding a layer of value to the way information about Ankole cattle is presented and perceived. This not only enhances the cultural significance and economic potential of Ankole cattle but also ensures that the typeface themselves become a valuable tool for communication and education, much like the crafted items derived from the horns.

In a world rife with unsolicited messages, typography must often draw attention to itself before it will be read. Yet in order to be read, it must relinquish the attention it has drawn (Robert, 1992). The concept that typography must draw attention before relinquishing it to be read is directly applicable to the production of long-horned Ankole cattle typeface in such a way that the typeface must first capture the audience's attention through striking designs that reflect the cultural and aesthetic significance of the Ankole cattle in Uganda. Once attention is secured, the typeface must be easily readable to effectively communicate

information. Balancing visual appeal with readability ensures that the typeface are both engaging and functional. This approach ensures that the cultural heritage and unique characteristics of Ankole cattle are highlighted while during the development of the typeface.

2.5 Summary of Literature

Klima (1970), underscores the deep emotional and cultural connection between cattle keepers and their animals. However, he does not specify the type of cattle in this context of which this study addresses, by giving detailed characteristics of the Ankole long-horned cattle. The historical context provided by Rege and Tawah (1999) and Petersen et al. (2004) situated the Ankole cattle within the broader Sanga cattle group, highlighted their unique physical characteristics such as the small hump, long horns, and red coat, however did not give a deeper insight of the horn characteristics which gap this study explores much further.

Under the second objective, the literature provides various insights into the creation of legible and memorable typeface that are culturally significant to the Ankole people as urged by Wang et., (2020) and legibility principles discussed by Sanocki and Dyson (2011). However, The literature generally discusses principles of typeface design but lacks specific application to typeface inspired by Ankole cattle which the study intends to digitize to enrich the typeface design, blending cultural heritage with modern typography. While emotional impact and cultural significance are recognized, there is a lack of specific strategies for achieving these in the context of Ankole typeface which this study addresses.

The literature emphasizes the importance of considering the technical, time-consuming, and expensive nature of typeface production. Ewer (2016) points out that the investment in time and resources depends largely on the intended use of the typeface, with widespread use requiring significant investment. Clarke (2021) suggests that initial letterforms should be crafted by hand before digital refinement, a process that maintains the elegance and distinctive traits of Ankole cattle horns which Schenker (2018) supports by adding that the necessity of understanding typeface anatomy to develop aesthetically pleasing and functional typeface. However, the literature does not specifically address the detailed application of Ankole cattle characteristics in typeface design and thus this study

will develop typeface by critically analyzing and incorporating the unique features of Ankole cattle horns, ensuring the typeface are culturally significant and visually distinct.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the research study, descriptions of the population, sampling frame and sample size, and sampling methodology. It also covers the types and sources of data, data collection strategies, and the tools used for data analysis and presentation.

3.1 Research design

This investigation used an exploratory research design. The main goal was to investigate how to make a traditional typeface using cow horns. Exploratory research is a methodological approach that seeks to explore research questions without clear, pre-defined outcomes. It is particularly useful when little is known about the phenomenon and aims to generate new ideas, discover patterns, and identify variables for further research (Creswell & Poth, 2018). The main goal was to investigate how to make a traditional typeface design using cow horns. With the ultimate goal of inventing a typeface that expresses these specific qualities, the study's manipulation of the Ankole cattle horns included tasks such as weighing, creating color samples, evaluating horn sizes, and sampling horn textures, among others. Research design, according to Ahuja (2010), is essential in determining the methods and metrics used for data collection and analysis, ensuring a harmonious balance between relevance to the research objectives and the methodology of choice.

This study used an exploratory research design and gave a thorough account of the steps taken to create a typeface using the horns of long-horned Ankole cow. The study effectively explained the complex steps of creating typeface that accurately portrayed and conserved the Ankole cultural history through narrative explanations. According to Teherani et al. (2015), this research strategy directs the researcher to explore and describe the processes taking place inside a particular study setting.

3.2 Population, sample size and sampling technique

The study comprised of the population of 20 respondents who are involved in rearing long-horned Ankole cattle in Mbarara. The information is presented in the subsequent sections of this report.

3.2.1 Study Population

The population of 20 respondents comprised of five (5) herdsmen, two (2) local council chairpersons, four (4) cultural elders, two (2) slaughterhouse managers and seven (7) graphic designers. These categories of population were directly connected to the keeping and rearing of long-horned Ankole cattle, an aspect that is pertinent to this study. The respondents were selected basing on both existence of the long-horned cattle on their farms and their knowledge on the Ankole long-horned cattle in relation to the Ankole cultural heritage. The respondents that will be selected from herdsmen are residents in Nyarubanga Village, which is found in Mbarara municipality.

3.2.2 Sample size

There were 13 respondents in the sample who included two (2) herdsmen, two (2) local council chairpersons, three (3) cultural elders, one (1) slaughter house manager and five (5) graphic designers. The category of this sample size was helpful in providing the necessary information needed to undertake this study. Each of these samples contributed significantly to the provision of relevant data for the objectives this study sought to achieve. To reach a desired level of precision, the complete population should be sampled in tiny populations. (Israel, 1992).

3.2.3 Sampling technique

Three sampling techniques were applied in this study as follows; Random sampling was used to select the cultural elders, slaughter house managers and the graphic designers. This is because all respondents in these categories seemed to be well equipped with the right information. Snowball is another sampling technique that was also applied on other respondents who included both herdsmen and horn collectors for their diverse knowledge on the long-horns of Ankole cattle. Lastly, purposive sampling technique was applied to select local council chairpersons because they had knowledge on the cattle grazing areas. It is very essential to choose the adequate technique of sampling (Sharma, 2017).

3.3 Methods of data collection

Data was collected using the following techniques: observation, interviews, and documentary analysis.

3.3.1 Observation

The researcher used direct visual observation by visiting various Ankole herdsmen with long-horned cattle in Nyarubanga Village, Ankole cultural centres, free-lance graphic designers, and tertiary institutions where graphic design practice and display done. This involved the use of digital cameras to take still photos of the long-horned cattle and their horns, observed and examined from the slaughterhouses. In addition to that, videos of the cattle while grazing were also recorded to get different horn views that could be used in the study. This was purposely done to memorize the information collected and also to avoid altering the original data from the various sources. Taylor and Steele (1996) reaffirm that the two skills necessary for observation are seeing and listening, and they go on to say that observation gives researchers the chance to record activities, behaviour, and physical characteristics without having to rely on subjects' willingness or capacity to respond to questions.

3.3.2 Interviews

Two categories of interviews obtained information on the three objectives. In-depth interviews and focus groups with various respondent classifications are among them.

3.3.2.1 In-depth interviews

In-depth interviews were useful for particularly objectives (i) and (ii), which focus on analysing the shapes of the long-horned Ankole cattle and exploring ideas for creating typeface from them. This type of interview was done specifically with the herdsmen, slaughter house managers and Local council authorities who gave deeper insights into the cattle’s characteristics and how these can be translated into typeface designs thus allowing thorough exploration of the subject matter. To ensure the success of this study, the researcher made appointments with selected respondents to be interviewed, made preparations and utilised open ended questions for the study. Kakooza (2002; p. 20) defines an interview as "a conversation in which a researcher attempts to elicit information from the subject and independently records it."

3.3.2.2 Focus group discussion

Focus group discussions was helpful when interviewing graphic designers and elders. This was favourable for the designers during work hours and the elders during evening time when having a community gathering. They can facilitate the group's concentration on the primary study topic and facilitate the comparative analysis that follows (Colucci, 2007).

3.4 Tools of data collection

The tools of data collection were used to gather information on the three objectives as explained in subsequent subsections.

3.4.1 Documentary analysis checklist

The documentary analysis checklist provided a list of resources that was relevant for supporting the research activities, making it possible to access resourceful relevant data to be used in satisfying the objectives in the study. The checklist included journals, articles, typeface used in product branding, dissertations, e-books, newspapers that were helpful in obtaining the information on long-horned Ankole cattle typeface. The use of documentary analysis helps to evaluate the relevant items that are required in order for research activities to realize its intent (Owen, 2014).

3.4.2 Interview Guide

The interview guide included open-ended questions that were verbally administered. Predetermined questions were raised to gather information from respondents. The guide had questions that catered for the three objectives of the research, which respondents satisfactorily responded to by participants in the field. Data from respondents was recorded and utilised during studio practice where practical production of work was further enhanced. Hammer and Wildavsky (2018) affirm that the open-ended interviewing requires the cultivation of a relationship that is very crucial in this study.

3.5 Procedure of data collection

The procedure involved getting an introductory letter from Kyambogo University to respondents in the field. This letter was used to access the farms that had long-horned Ankole cattle, slaughterhouses, cattle markets and graphic designers. Data was collected for analysis

in this report. Ethical considerations followed as a means to seek respondents' consent to participate in this study.

3.6 Validity and Reliability of data

Reliability and validity of data was achieved through a meticulous process of data collection and analysis, ensuring the quality and accuracy of the information obtained. To enhance reliability, pilot testing of the guiding questions and interview protocols was conducted with a small sample group to identify ambiguities and inconsistencies. Standardization of all data collection instruments, including interview guides and document analysis templates, ensured uniformity in the questions posed to respondents. Regular consistency checks were performed throughout the data collection process to cross-verify the data for any anomalies.

To ensure validity, content validity was established through reviews by subject matter experts, including research supervisors, to ensure comprehensive coverage of relevant aspects of the research topic. Triangulation was employed to validate the data by comparing information obtained from multiple sources and methods, helping to identify discrepancies and corroborate findings. Feedback from initial rounds of data collection was incorporated into the instruments, and iterative refinements were made to improve their validity. External reviews by independent experts provided an additional layer of validation. These comprehensive measures significantly strengthened the reliability and validity of the data collection instruments, ensuring that the data collected was consistent, accurate, and trustworthy. Measures of a device's quality, such as reliability and validity, are crucial for ensuring the authenticity and dependability of the data collected (Kimberlin and Winterstein, 2008).

3.7 Data analysis

Field data was analysed basing on emerging themes. The procedure involved sorting, analysing and synthesizing. The final data was arranged based on various themes that reflected the study objectives as represented in chapter four.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter discusses the results of the typeface-making process using long-horned Ankole cattle in the western region of Mbarara district as presented in the sub-sections of this report. The presentation and interpretation of the findings were organised based on the set objectives of this study that sought to address the underlying issues based on these objectives of sought to: Examine the long-horned Ankole cattle of Mbarara; Explore ideas for creating long-horned Ankole typeface; Develop typeface from long-horned Ankole cattle of Mbarara.

4.1 Characteristics of the long-horned Ankole cattle

This objective examined the characteristics of the Ankole long-horned cows with the aim of generating ideas for developing most appropriate typeface to preserve the cultural heritage of long horns that define this regions cattle for posterity. The Ankole cattle horns were long and thick, grew to a length of 1.8 meters. Cows had longer horns than the bulls; the horns of the cows measured between 1 and 1.8 meters while that of the bulls were between 0.83 meters to 1.3 meters in height respectively. It therefore provided the prerequisite dimensions for the creation of horn-shaped typeface. The thickness of the horns presented forms to ensure the desired bold features related to the weight of the Ankole cattle horns. The characters settled firmly on the baseline in reflection of the large horns firmly attached to the head of the cow.

Information on the characteristics of the long-horned Ankole cattle is reflected in the subsequent section of this objective, illustrated by the underlying figure.

Figure 3: Measurements of the horns from the Ankole longed cattle. Source: Author

The technical measurements of the horns was done to determine the width, height, diameter and radius of the long-horned Ankole cattle as illustrated in *Figure 3*. Specific dimensions involved the use of instruments such as the ruler, pencil, tape measure, sketchbook to document the processes. Through the process, the width, height, diameter and radius of the horns were determined from the abattoir in the field.

The measurements in *Figure 3*, were drawn in a sketch book to create an impression of the horns shapes and forms relevant to the construction of the typeface characteristics in this research.

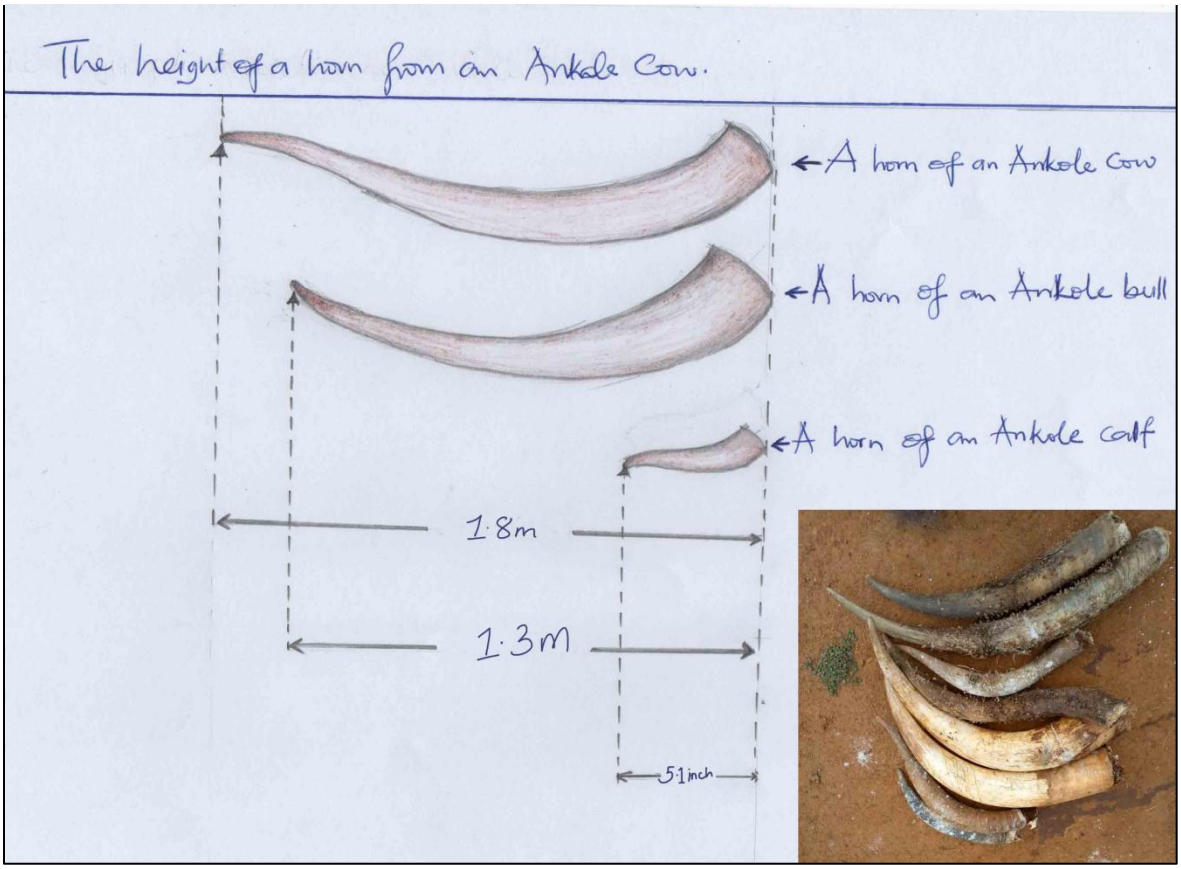

Figure 4: Detailed drawings of the long-horned Ankole cattle. Source: Author

The dimensional drawings in *Figure 4* indicate that the Ankole cow has longer horns in comparison to the bull and calf. Most bulls tend to have a single curved horn while the cows have double-curved horns. The cows' horns have a huge curve that stretches from the base of the horn as it slightly curves at its top.

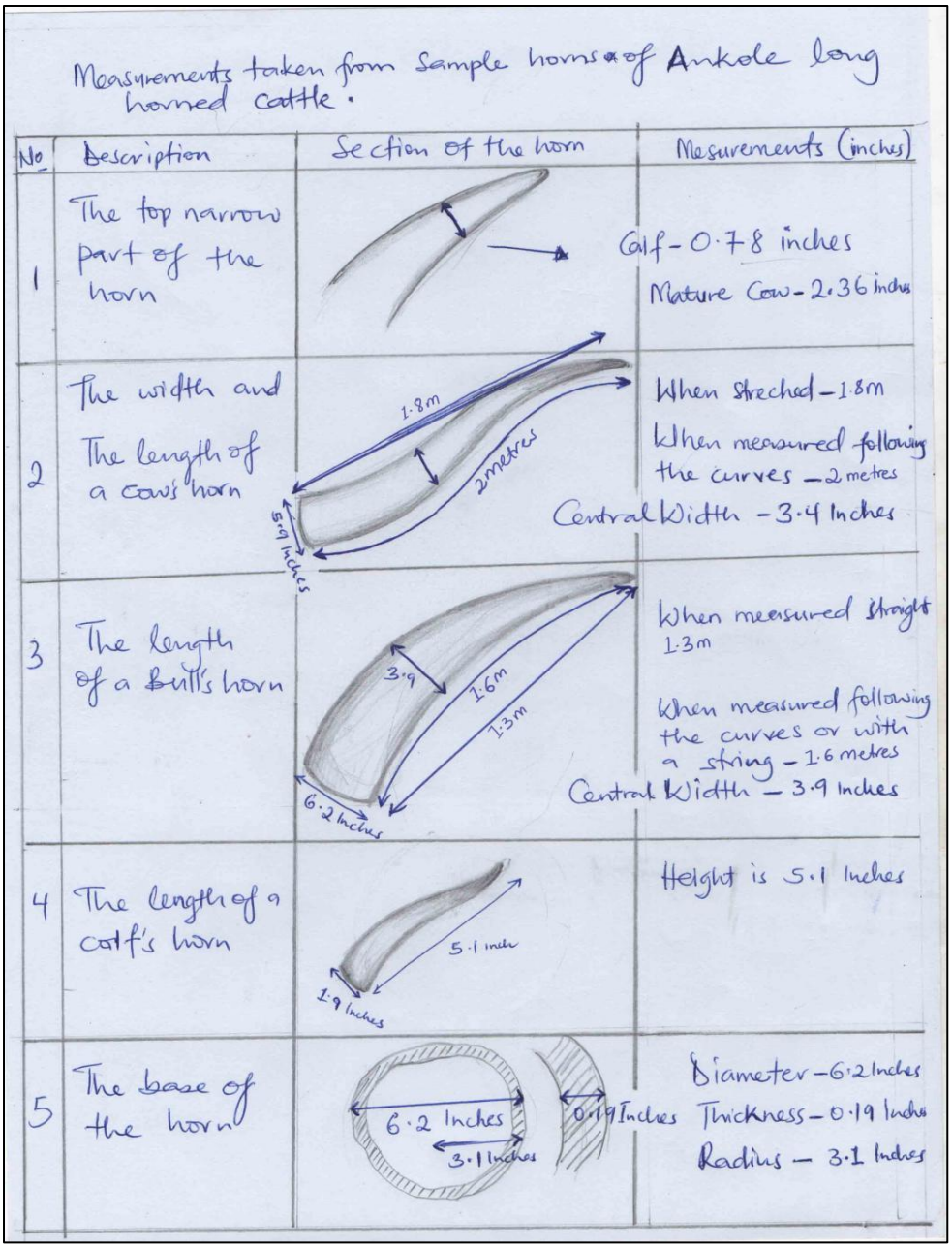

Figure 5: Descriptive measurements of the Ankole cattle horns. Source: Author.

The measurements in *Figure 5* indicates descriptive dimensions of the Ankole cattle horns. Cows, bulls, and calves have different dimensions that determine their length, radius and form. The length of the cow's horn is approximately 0.2 meters longer than of the bull. As for the width, the bull's horn is always wider and thicker, making it heavier in comparison to the cow's horn. The base of the mature cow's cow measures 6.2 inches wide with thickness of 0.19 inches.

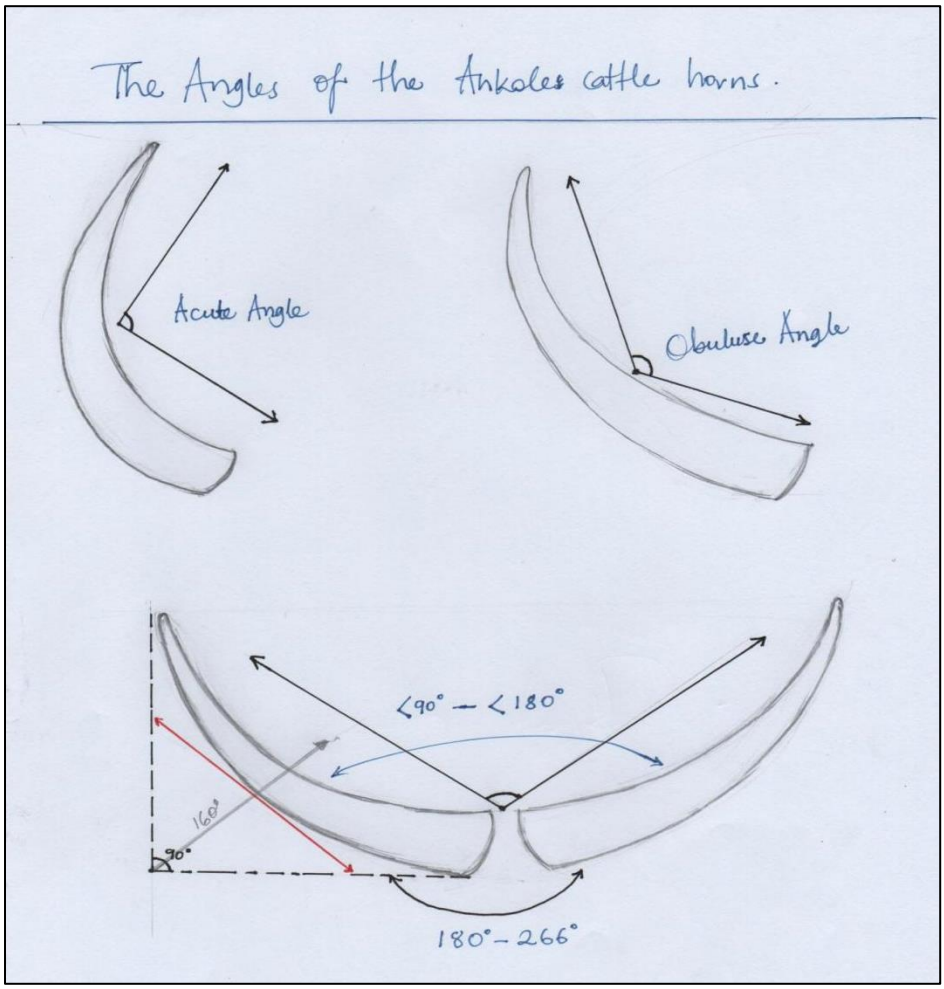

Figure 6: Angular dimensions of the Ankole long-horned cattle. Source: Author.

Horns of long-horned Ankole cattle stretch less than 180 degrees from the internal measurements while the outer measurement is between 180 to 266 degrees as indicated in *Figure 6.* Most of the cattle horns elevate at a degree of 160 degrees from the scalp. The technical measurement of typeface is achievable through an interpretation of these details.

Figure 7: Dimensions between horns of Ankole long-horned cattle. Source: Author.

The distance between the horns vary depending on the cattle as indicated in *Figure 7*. In some cows, the distance in-between the two horns is always wider in the middle compared to the distance in-between at the bottom and the top. Such horns tend to curve upwards trying to form an 'O' shape. Some other cows have their horns widely spread apart as the distance between the horns increases gradually from bottom to the top. The distance can stretch between 1.8 meters to 0.9 meters as indicated in *Figure 7.*

Figure 8: Shades of long-horned Ankole cattle. Source: Author

The shades of colour found in the horns of long-horned Ankole cattle vary as indicated in *Figure 8.* The colours include bronze, wheat, brunette, saddle, cedar, tortilla, umber, tawny, peanut, tapestry, ivory white, davy and silver gray. Brown is the most dominant colour in the horns. These shades of colour are ideal for aesthetic values in the development of the new typeface from the long-horned Ankole cattle. However, other colours include silver grey and ivory grey are applicable creating tones in black and white printed typeface.

The horns have a rusty red cast and may be solid in colour or be speckled as shown in *Figure 8*. The creation of new typeface can be enhanced with a rusty-red kind of textural appearance that are marked with a large number of small spots or patches of colour that are solid.

Figure 9: Colour range on the top horns of Ankole cattle. Source: Author.

The illustration on *Figure 9* indicates the colour values on the tips on the rest of the horns. Most horns have different colour variations and tones. The top part of the horns appears darker as the colour fades out to the bottom or lower parts.

Figure 10: Horn textures of the Ankole cattle. Source: Author.

The horns are composed of a bony-core that gives them a rough textural structure as indicated in *Figure 10*. Textured horns covered with a sheath of keratin are composed of thick and thin lines. The thin lines appear vertical and the thick lines mostly tend to go round in circles at the bottom part or the base of the horns. The horns' texture is so rough and the surface has some sharp edges that can be scratchy when felt with bare hands. A few parts of the horn were smooth in the middle parts.

4.2 Ideation of typeface from long-horned Ankole cattle

This objective explored different typeface designs based on the characteristics of the long horns of the Ankole cattle. The generation of these ideas involved the manipulation of the horn characteristics to create new and usable typefaces from the horns of Ankole cattle for possible use in the industry. These characters, modified using digital software, displayed the integration of the horn characteristics discussed in the subsequent subsections of this report.

Figure 11: Textured, coloured and drawn horn typeface.

The illustration on *Figure 11* represents drawings derived from the horns of the long-horned Ankole cattle. The typeface generated reflect the colour and texture identified in *Figure 8.* The characters were created bearing lines that reflect of the long-horned Ankole cattle. The lines followed the textural appearance of natural horns with vertical lines in some typeface samples.

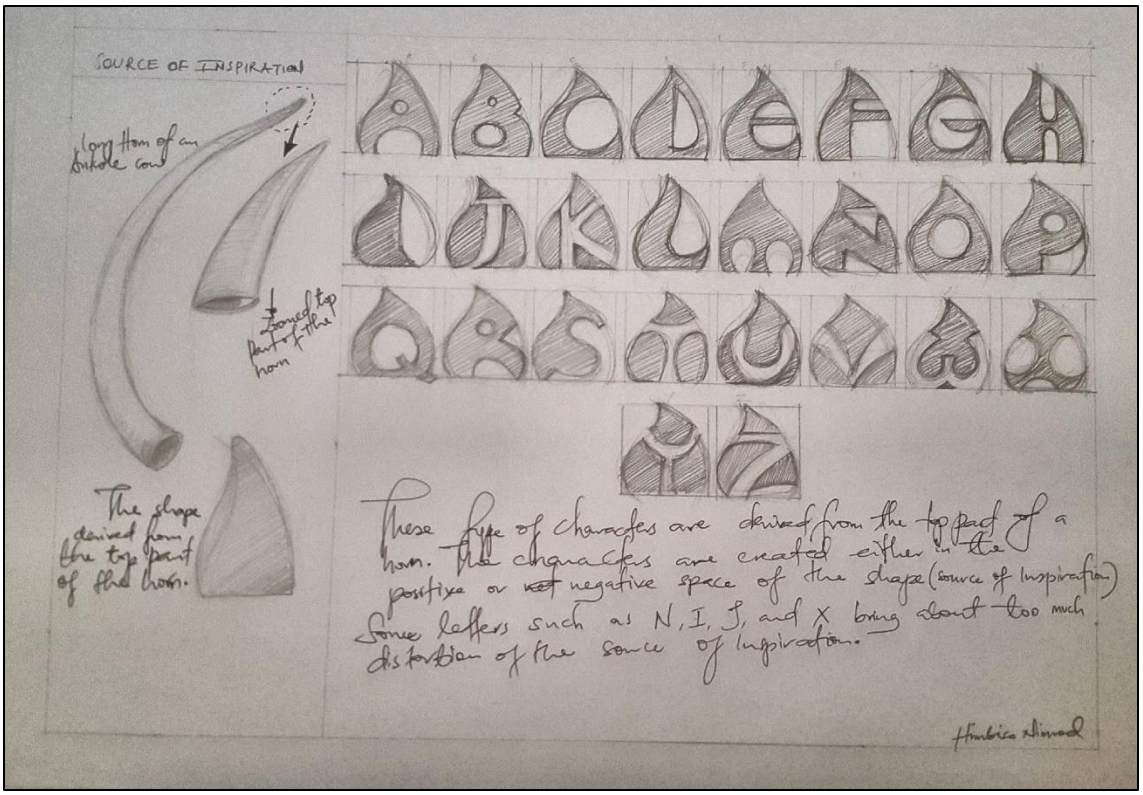

Figure 12: Design process of a typeface inspired by the horn's top.

The illustration on *Figure 12* shows the experimentations of typeface shapes derived from the narrow top part of long-horned cattle. The tip of the horns were ideal for creating various shapes from the tip of the horn. Typeface with pointed tips and wide base symbolised the different characters.

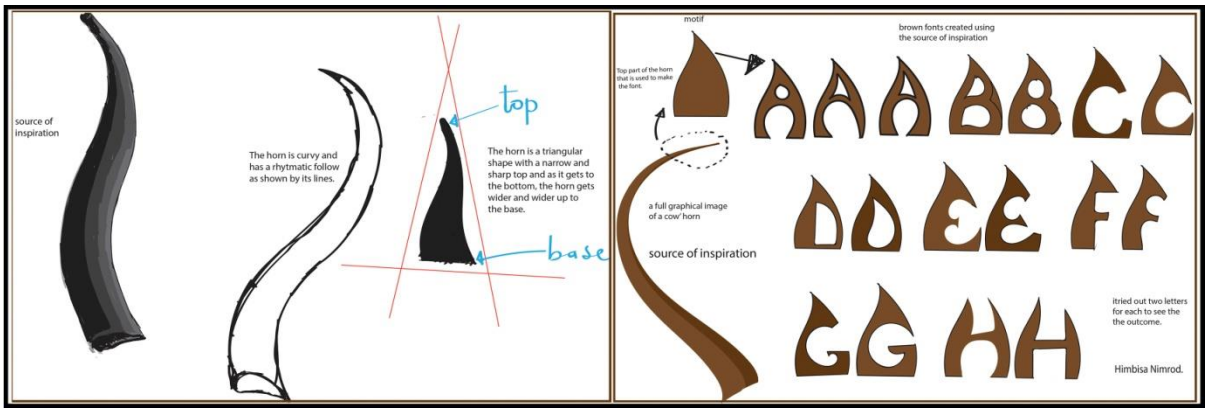

Figure 13: Design process of a typeface inspired by the horn's top.

Through the use of design software, the typeface were modified with the use of sketchbook pro designing software as illustrated in *Figure 13.* These typeface were refined to present refined characters to reflect usable typeface in the industry.

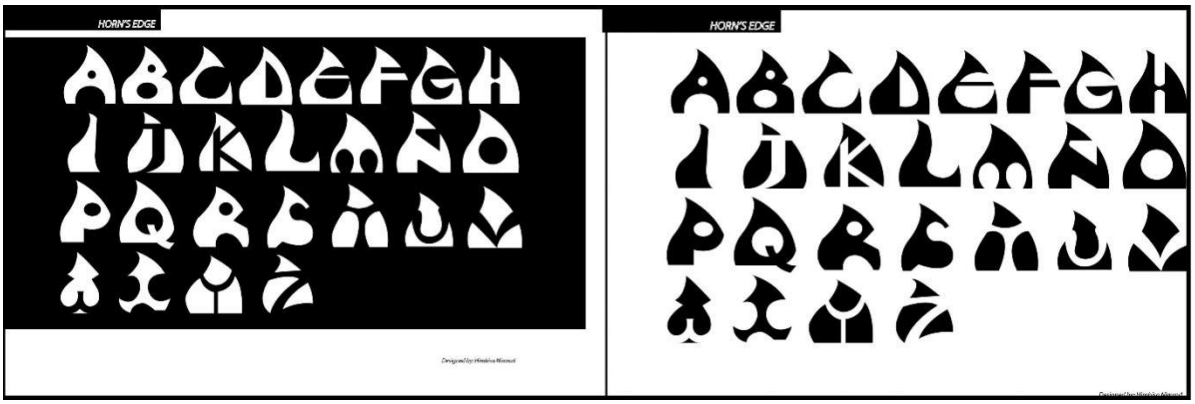

Figure 14: Digitally modified characters of the horn tips

In *Figure 14,* the typeface displayed the digital characters in black and white to reflect alternative colour values. These typeface reflect black and white backgrounds to highlight their forms and shapes more clearly.

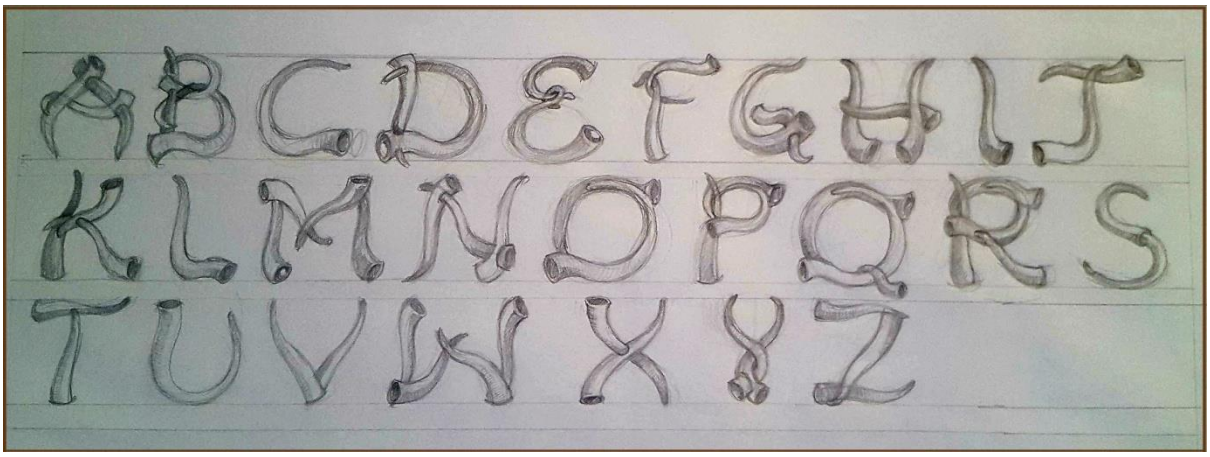

Figure 15: Weight and thickness of typeface from Ankole long-horned cattle.

The typography focused on the weight and thickness of the typeface as illustrated in *Figure 15* drawing in pencil. The letters illustrate the thickness and weight of the horns. The typeface is also heavy enough as seen in the figure firmly settled on the baseline.

Figure 16. Colour suggestion on the Ankole long horn.

The 3D typeface in *Figure 16* illustrate the form, base and hollow features of the horn. Forms created by the curvy nature of the horn creates its anatomy. These intertwined typeface created shapes and forms of the different characters. Colour enhanced the aesthetic value of the typeface to reflect their appearance. The fusion of the horn colour and texture created the typeface's suggested colours. The stem of the letters tend to narrow down as they recede from the one part of the letter to the other creating sharper tails, ears and arms of the characters. The number of horns used to formulate given letters depended on the number of joints that given letter has. For example, letters such as 'C', 'D', 'I', 'Q', 'U' and 'S' required a single horn to create while the rest of the characters may require either two or more horns in their creation.

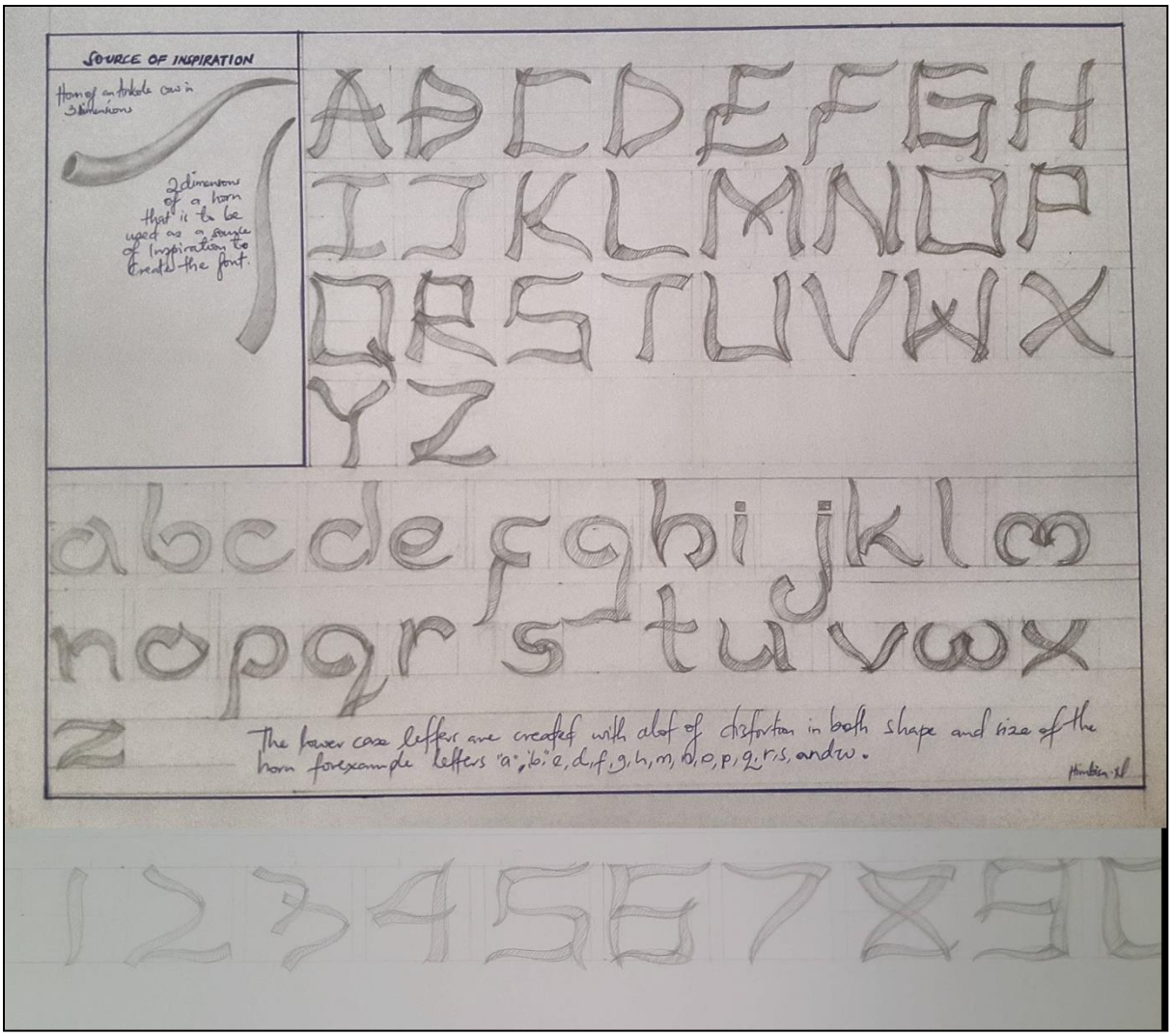

Figure 17: An improved drawing of modified Ankole long-horned cattle typeface

These characters in *Figure 17* show curves that relate to the shape of the Ankole cow horn. The shapes joined to another character creates continuous flow of the characters without distortion of the horns' shape.

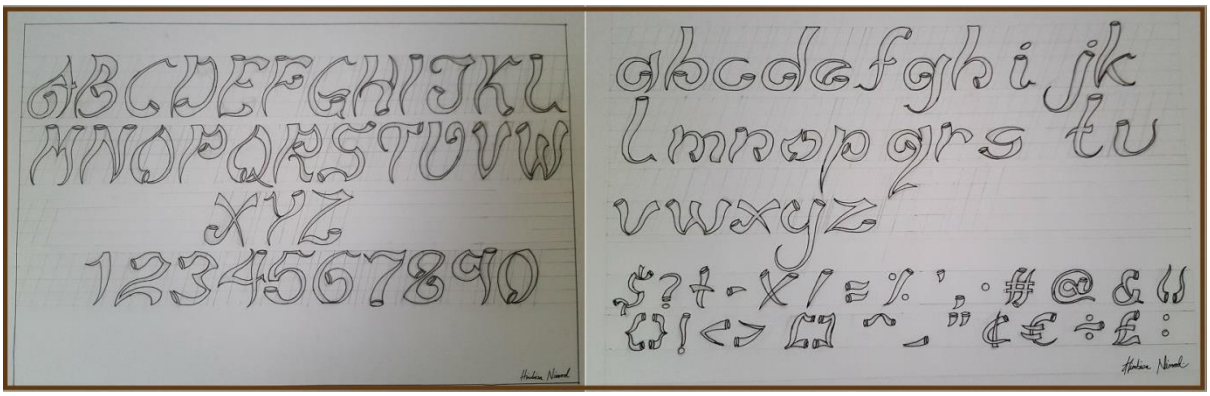

Figure 18: Sharp edged horns that illustrate the defence mechanism of the Ankole long-horned cattle.

The typography in *Figure 18* illustrated an exaggeration of the narrow end of the Ankole cattle horn to create specific design at the terminal and the serifs of each character. The hook-like designs at the receding ends of the characters reflect the defence mechanism of the Ankole long-horned cows.

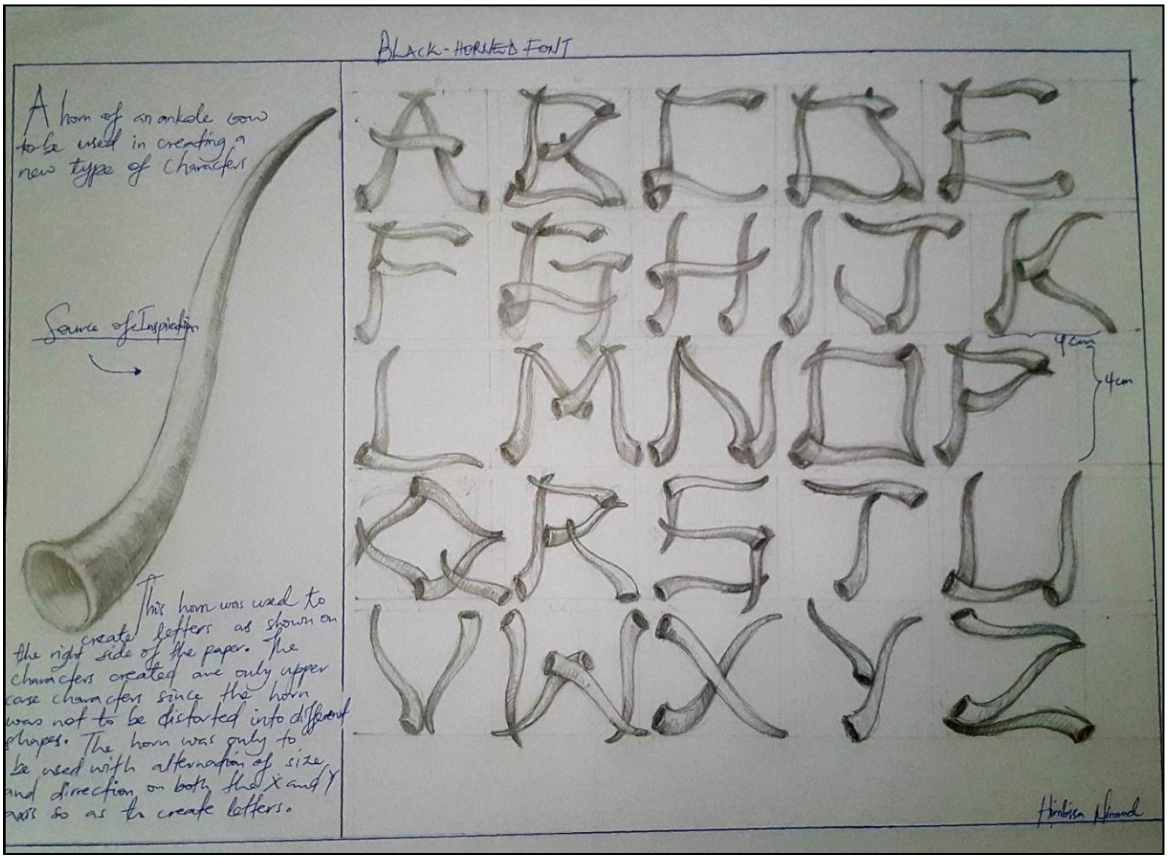

Figure 19: Typeface characters based on the full length of the horn.

The illustration on *Figure 19* illustrates fronts developed from the length of the Ankole cattle horn. The cap height is longer to accommodate the length of the letters, right from the baseline. It reflects the length of the Ankole cattle horns that stretch to 1.8 m (6 ft.). The typeface created in *Figure 19* represent a narrow stem to appear visually elongated.

The development of above typeface involved making a sketch of the horn of an Ankole cow with the use of graphite pencil to tone it. In order to depict height, the horn had to be drawn narrower so as to be seen longer on paper. The 3D typeface is artistically developed to resemble a cow horn as seen in the figure above.

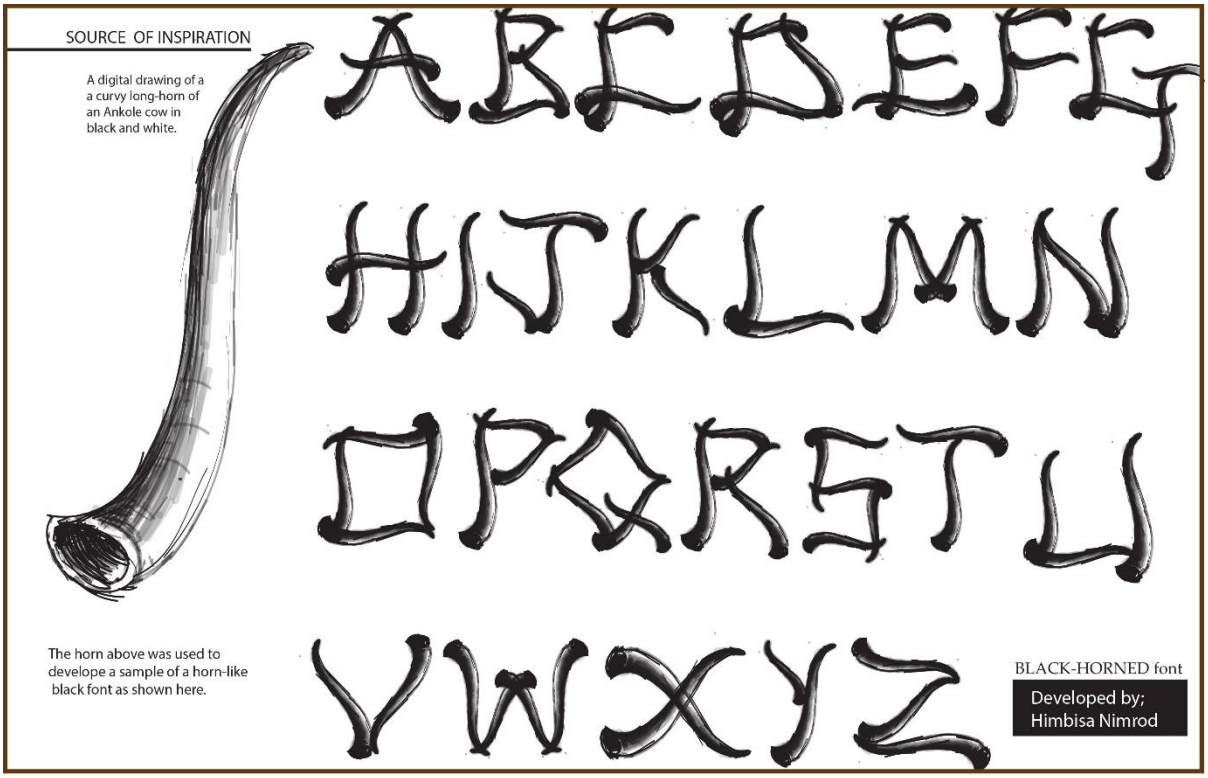

Figure 20: Digitally manipulated full-length typeface.

The illustration on *Figure 20* represents digitally developed typeface digitally developed using Adobe Photoshop software with a drawing tablet. The typeface has a stronger contrast to increase its visual weight and legibility.

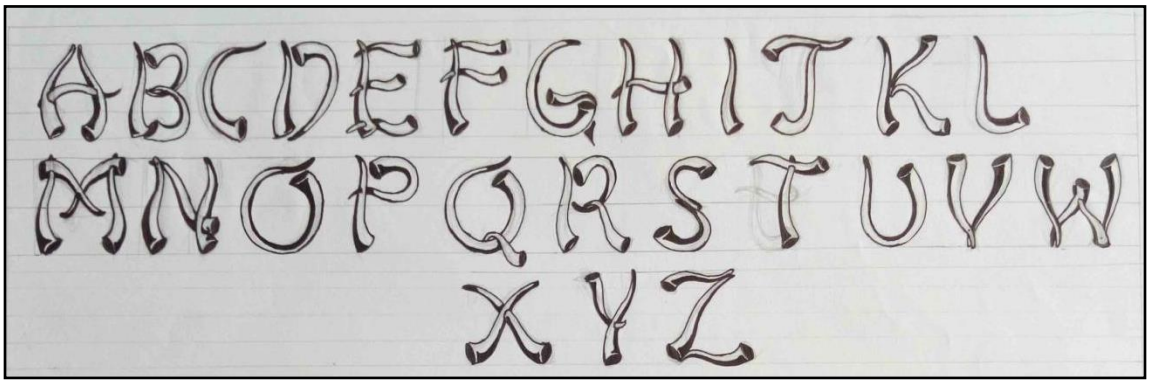

Figure 21: 3D characters with black and white colour values.

The typeface in *Figure 21* illustrates 3D black and white characters. The black and white colour value appears on the horns of long-horned Ankole cattle. These colours create shadows to reflect a 3D form. It adds to the aesthetic values of the typeface as indicated in *Figure 21*.

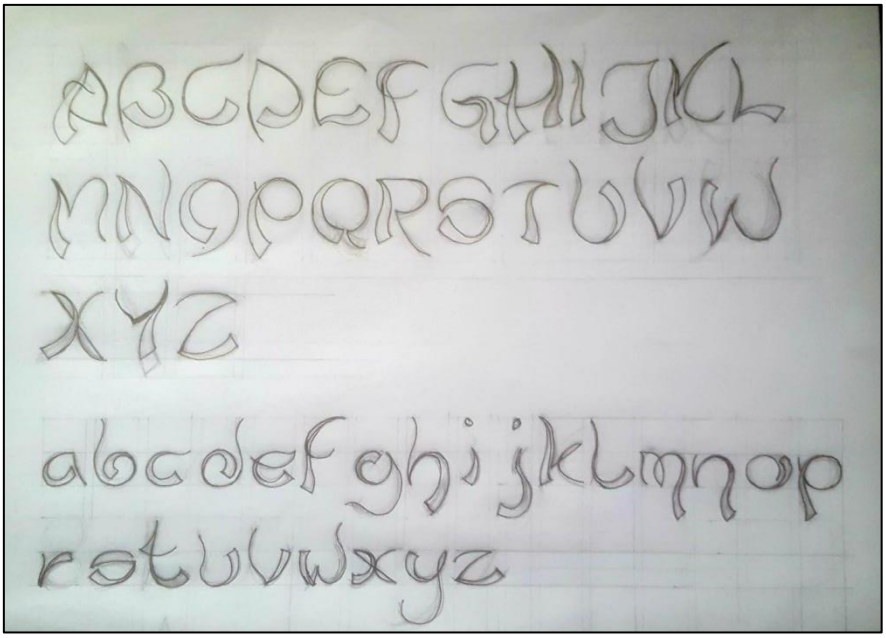

Figure 22: Single stroke characters of the long-horned Ankole cattle.

The typeface in *Figure 22* reflects characters created from the longevity of the Ankole horn. The single stroke found on each of the letters to display continuity and elongation of the letters that depict the curvy horns. The single movement of the curves to create each character reflects this elongation. The advantage of using the single stoke horn-like typeface is that its

very light in weight as compared to other developed Ankole typeface and this is made possible due to the simplicity involved in it's creation.

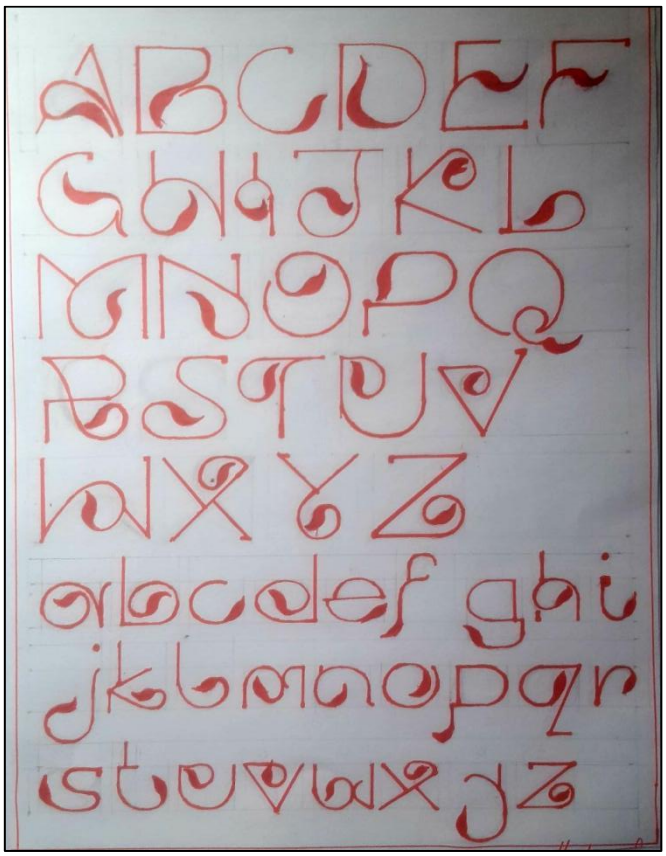

Figure 23: Characters developed from horn tips.

The typeface in *Figure 23* represents characters created from a single part of the horn tips. The creativity added beauty to depict the elegance of the Ankole long-horned cattle.

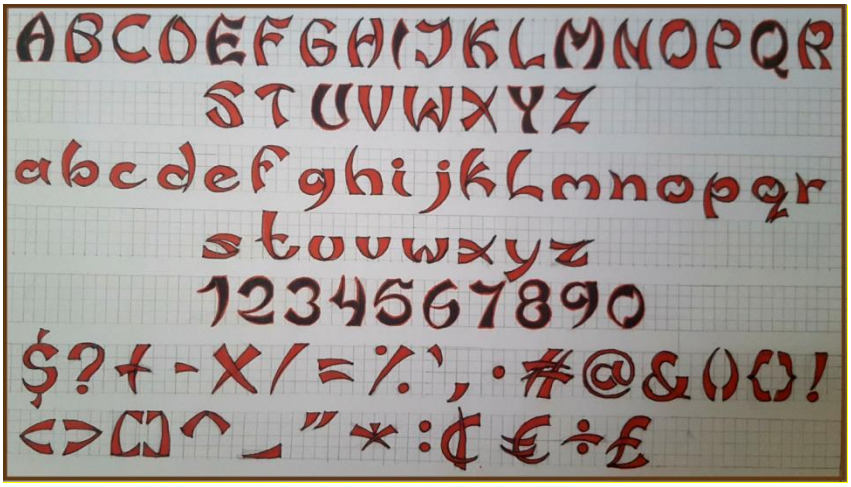

Figure 24: Typeface development inspired by the sharp edge the horn of an Ankole bull.

Description: The figure above shows the typeface created from the sharp edge of the Ankole bull horn. With focus on the simplicity of the edge of the horn, the researcher focused on capturing simple triangular shapes and then adding a little curve to the design and thus coming up with the simplified typeface as seen in the *Figure 24*.

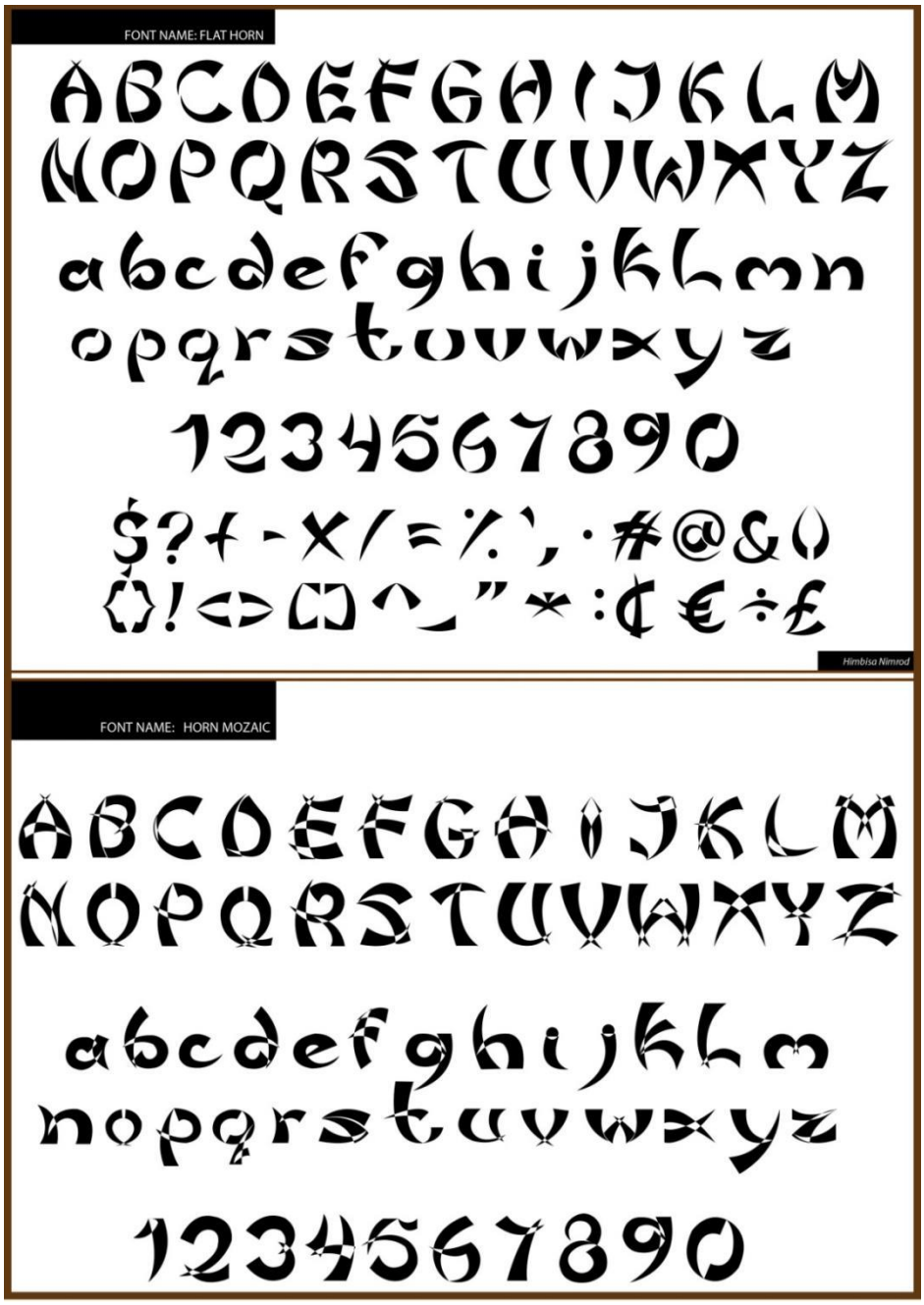

Figure 25: Vector Typeface inspired by the sharp edge the horn of an Ankole bull.

The figure above shows the typeface presented in the previous *Figure 25* being developed in Adobe Illustrator. The two vector images above present the same typeface but with different designs added to it for extra beauty.

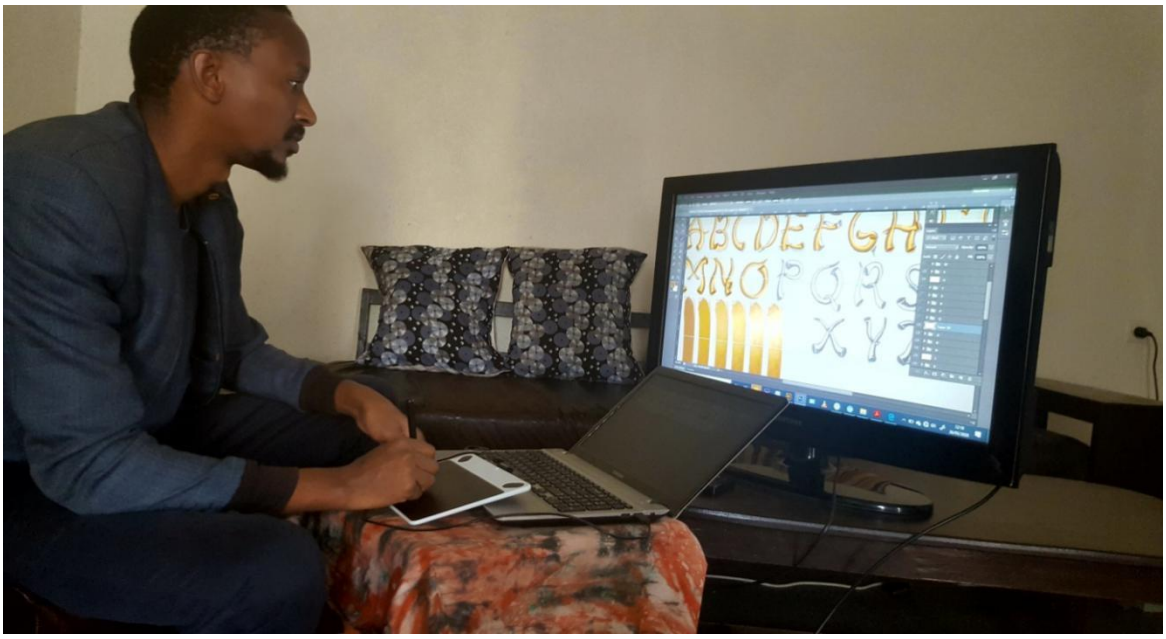

Figure 26: Digital manipulation of characters from long-horned Ankole cattle.

The main tools for creating digital characters included a stylus, Intuos Draw CTL-490 drawing tablet, laptop computer, display monitor, adobe illustrator and adobe Photoshop software to manipulate the characters as indicated in *Figure 26*. The creation of digital characters involved scanning typeface designs from the sketchbook. Scanned images were manipulated in Adobe Photoshop with the use of various tools as pen and brush tools are used to re-develop each character.

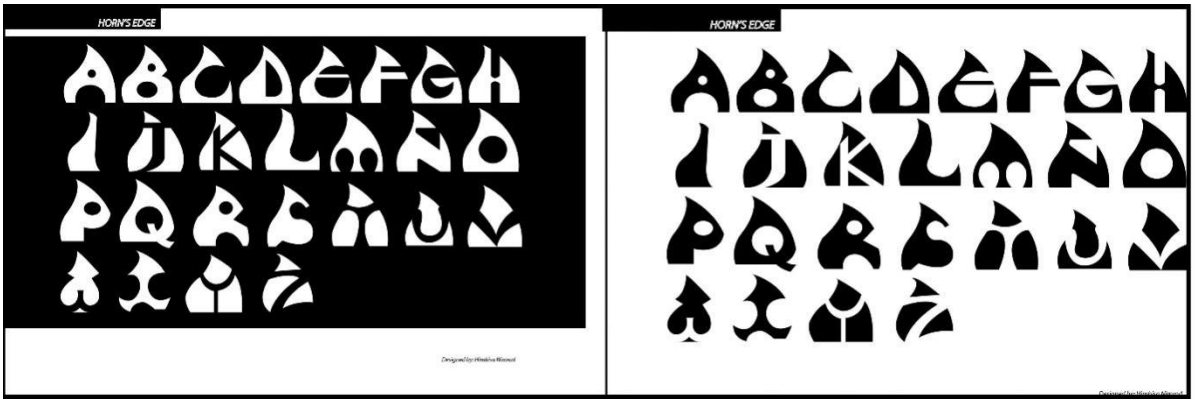

Figure 27: Top horn typeface.

The characters in *Figure 27* represented the top of the horn studied from the long-horned Ankole cattle. The character was designed using Adobe Illustrator software and displayed on black and white backgrounds to give different aesthetic values and preferences in terms of colour.

Figure 28: Upper case characters of Inyambo typeface.

The characters in *Figure 28* are final outputs produced in Adobe Photoshop with the help of a Wacom drawing tablet. The 3D characters were manipulated through partial and total distortion of the horns. A pen tool was used to trace the characters in the sketchbook. With the use of a brush tool, colour was added to give these characters aesthetic values of a three dimensional typeface appearance as illustrated in *Figure 28*.

Figure 29: Ankole digital characters created in Adobe Photoshop.

The characters indicated in *Figure 29* represents the final appearance of the Ankole 3D typeface created in Adobe Photoshop with the help of a drawing tablet. The characters possess a golden colour for aesthetics in their appearance. The characters presented 3D appearance to maintain their original form and shapes of the horns. The hollow depth reflects the base of the horn.

Figure 30: Ankole Pride characters developed in Adobe Photoshop.

The characters in *Figure 30* reflects the Ankole pride in the typeface. The brown colour is associated with the Ankole longed horned cattle rusty brown stains that dot some of the

horns. The golden colour enhanced and signified beauty attached to the long horns to embrace the Ankole tribe.

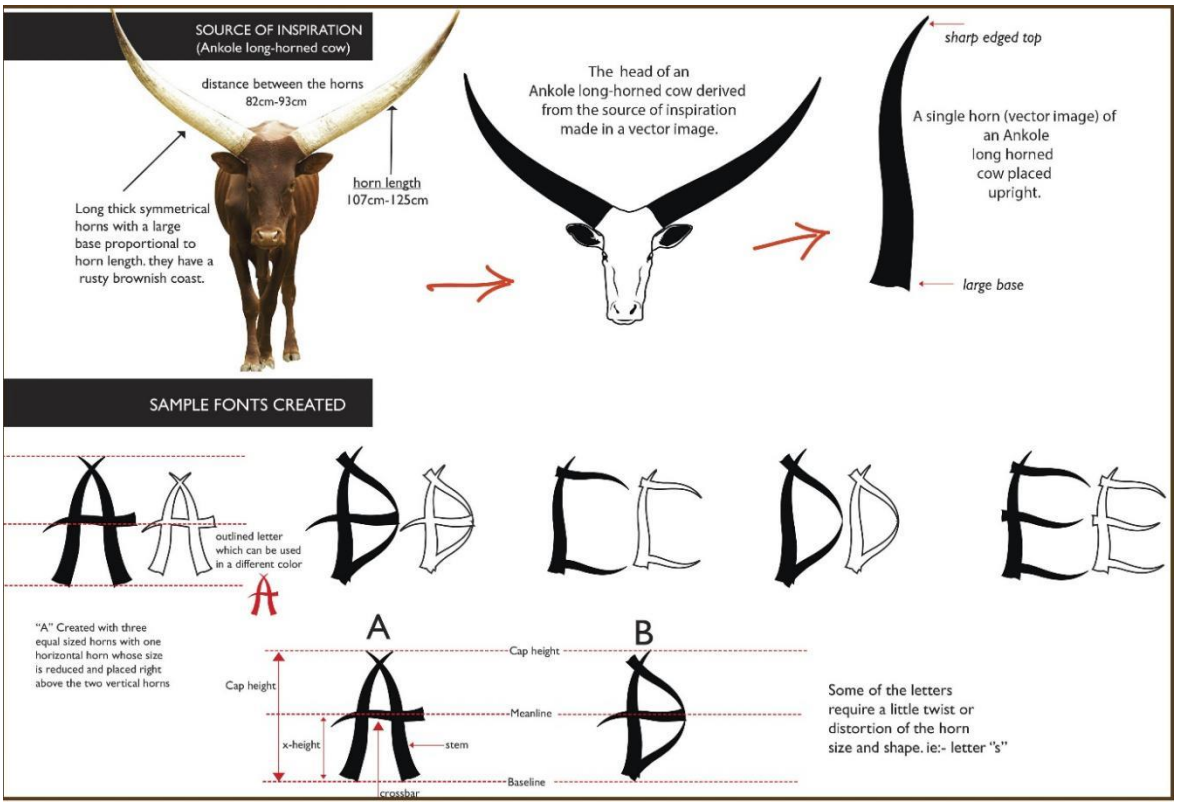

Figure 31: Typeface development inspired by the shape of the horn

The shape of the horn inspires the letters in *Figure 31*. The 2D characters are developed without compromising the original shape of the horn but with alternation in the horn's height in a few parts of some of the characters such as the cross bar of letter 'A'. This was made so that the characters with cross bars such as letter 'A' do not appear oversized and unrealistic. The illustrated drawing was a digital creation using Adobe Illustrator with a help of a drawing tablet. With the use of the rotation tool after selection in Adobe Illustrator, the horn was simply rotated from the upright angle to face a new direction depending on the letter appearance being created. In other words, the creation of the typeface in *Figure* 32 involved simple rotation of the 2D horn that was created in the vector form.

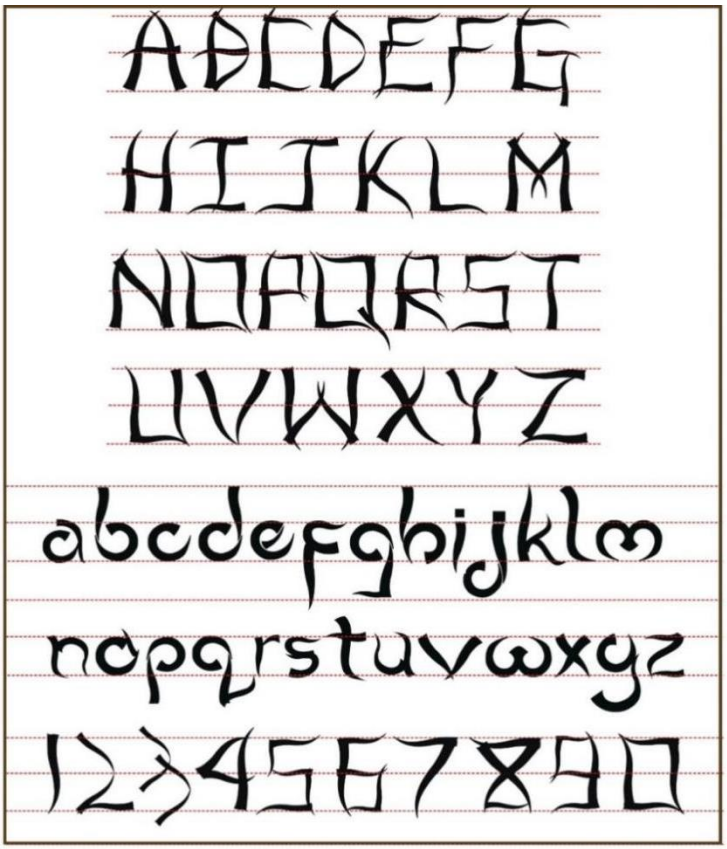

Figure 32. A complete set of Ankole simple horn typeface.

The *Figure 32* shows the final appearance of the Ankole long-horned typeface being developed from the Ankole long-horned cow as shown from Figure 31 above. The typeface appears in both upper and lower case with the numbers 1 to 10 inclusive in its set. The 2dimensional typeface shown above is legible, communicative and thus suitable for branding purposes of the intended cow products.

In addition, the typeface is presented on three lines to show how each letter uses space in respect to typeface weight and height. This precise presentation of the upper case and the lower case in the lines guides the eyes of the viewer to flow systematically from one character to another in a single word.

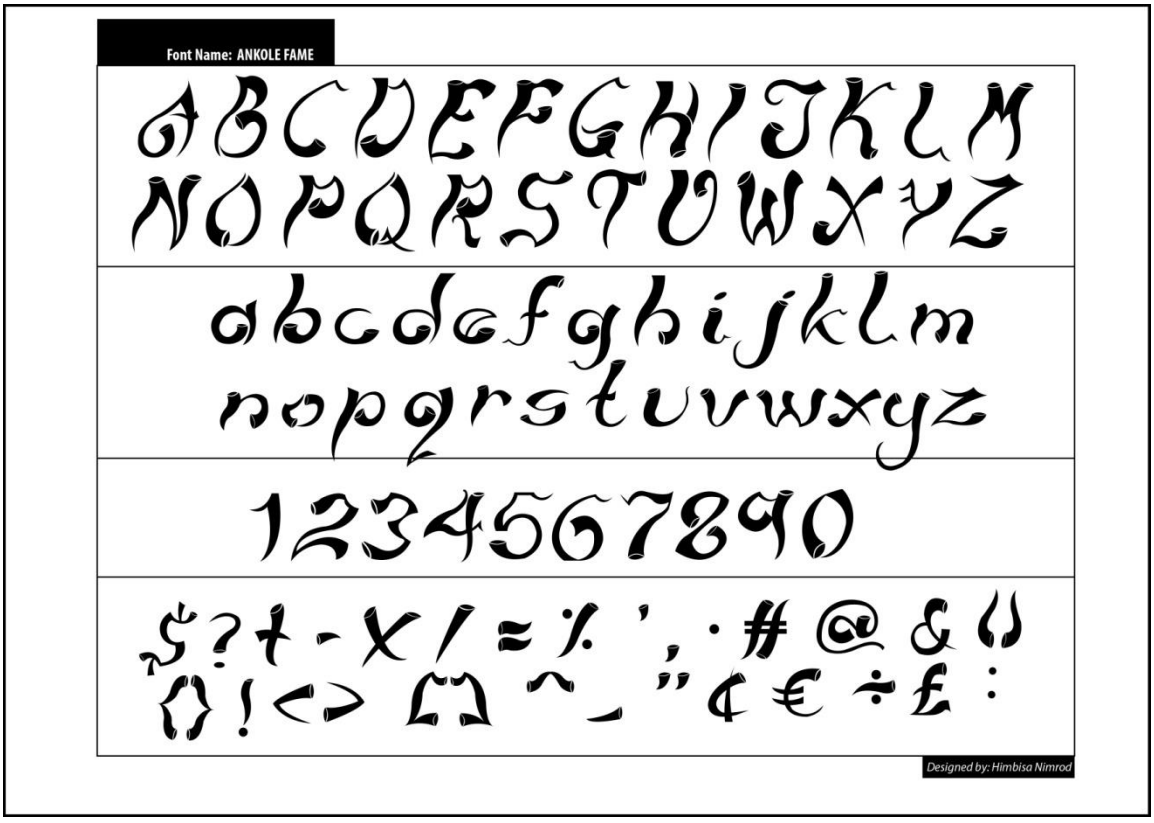

Figure 33: *Ankole fame typeface.*

Ankole fame typeface is a unified set of characters with a distinct kind of design. The researcher applies a lot of bending of the horn to create fanciness in the characters. The characters are designed with one end appearing hollow and the other appearing to be flat. This is because the researcher intended to blend both form and shape features in a single design. The fanciness created is intend to embrace the majestic movement of the Ankole long-horned cattle. The typeface is designed to slant to add value in the beauty displayed when used in advertising.

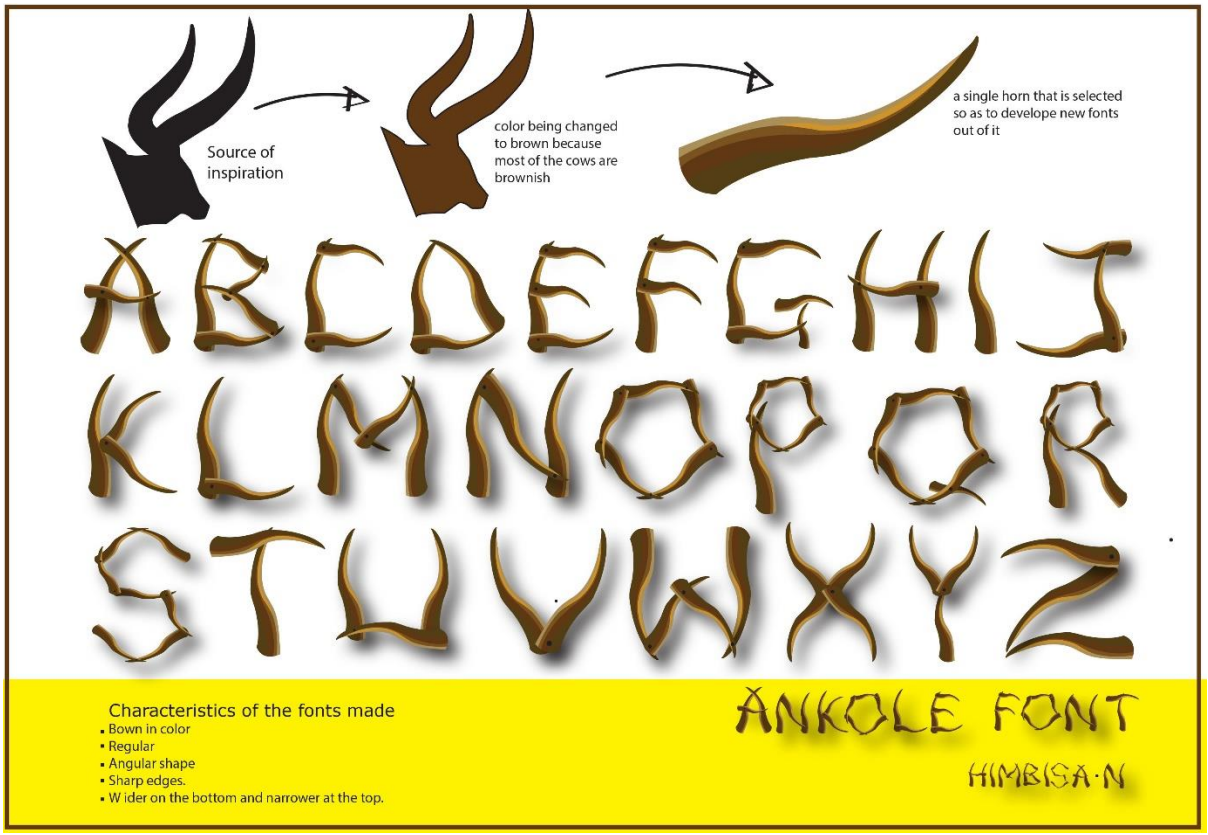

Figure 34. Ankole brown horn typeface.

The *Figure 34* above shows the Ankole brown horn typeface that was inspired by a cow's horns facing forward as viewed in a profile view. The view in which the horns were viewed in, created a fusion of letters in the viewer's eyes. Therefore, as the view-points altered, the designs of the horns tended to formulate letter-like shapes depending on the suggested view-points or even the changes in position by the cow being viewed. The typeface is characterised with horns of a brown color, angular shape, shape edges, wider on the bottom and a narrow top.

In conclusion, the Ankole brown horn typeface was inspired by the shape of a cow's horns facing forward, creating a fusion of letters when viewed in profile. The typeface's design is characterized by angular, brown horns with sharp edges that are wider at the bottom and narrow at the top. The curvy sharp angles at the joining points of the letters make the typeface effective for aggressive marketing and branding of Ankole milk products.

4.3 Development of typeface from long-horned Ankole cattle horns

This section presents the final typeface that was developed from the characteristics of the long-horned Ankole cattle. The simplification of the typeface characteristics were realised through the examination of the cattle horns and the typeface is more suitable for use as compared to all the other typeface that were developed in this chapter.

Figure 35. Digital display of the Ankole long-horned typeface in black and white.

Figure 35 shows a textured typeface which was inspired by the lines in the horns of the Ankole cattle. The lines had to be interpreted into simple patterns that could form simple visual textures that can add beauty on-to the typeface. The typeface is designed in both upper-case and lower-case and displayed in both black and white so as the viewer gets a feeling of how it would appear if being printed on the above background colours. The patterns in the letters make it so unique from most of the designed set of typeface. The comprehensive scope of Ankole long-horned typeface is going to largely influence more culturally designed set of typeface with distinctive African appearance.

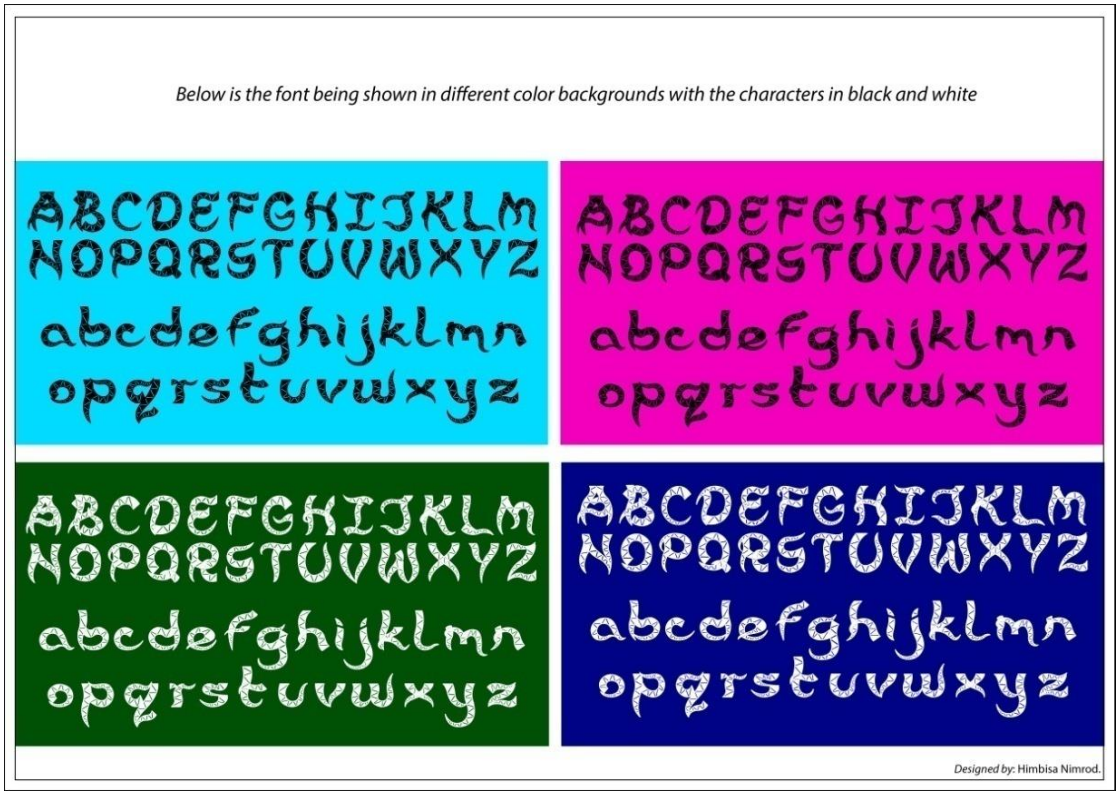

Figure 36. Background colour suggestions to taste the visual display of typeface.

Figure 36 displays Ankole-long-horned to have a good visual display no matter the choice of colour background used. As seen in *figure 36* above, the legibility and beauty of the typeface remains constant as the typeface's background colour is altered.

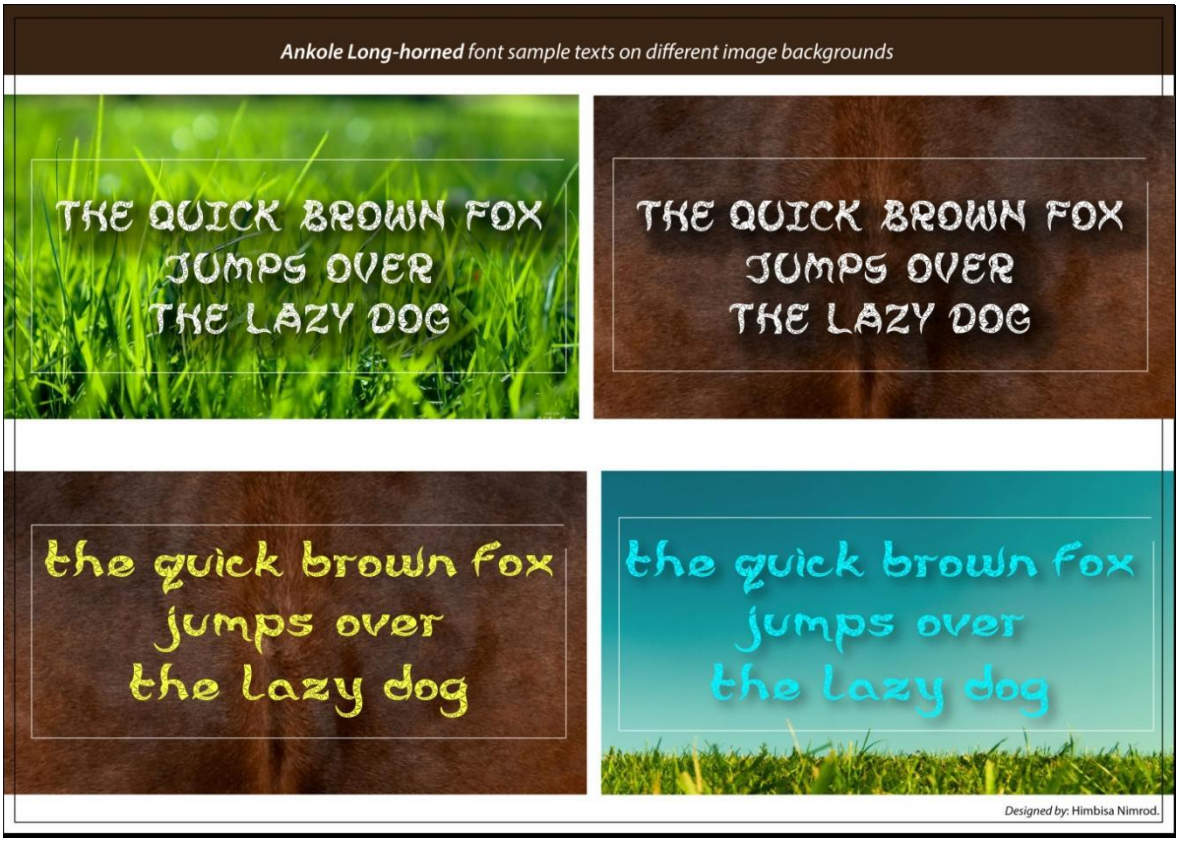

Figure 37. Back ground image suggestions for to taste the visual display of the Ankole long-horned typeface.

In the *Figure 37*, the researcher goes ahead to show how the typeface can easily cooperate with any given image background the visibility of the letters stay strong as expected during visual communication. The Ankole long-horned typeface displays an impactful character on both digital and print media thus being suitable for branding. The text are well arranged not to distract the reader but instead be distinctive and immediately help in effective communication.

Figure 38. Anatomy of the Ankole long-horned typeface.

Figure 38 above shows the anatomy of the Ankole long-horned typeface. The typeface is designed with a character width of 2.5cm and 3.5cm height. The x-height occupies more than a half of the cap height as shown by the lower case letters. All letters are designed not to go below the baseline, except for letter m, and a few other lower cases such as g, j, p and q which are obliged to go below the base-line by default. The stem of the characters is curvy as a horn of an Ankole cow baring a base and a narrowing terminal. The kerning (Space between the characters) is partially enough to enable freedom between the characters. The patterns in the letters are derived from both the lines that form the horns' texture and the Ankole milk pot ''Ekyanzi'' which is used to store milk in the Ankole region.

Participants' voices were crucial in justifying the design choices for the Ankole long-horned typeface. During interviews and focus group discussions, many participants emphasized the cultural significance of the Ankole cow's horns and the Ekyanzi milk pot. One participant noted, "The Ankole cow's horns are a symbol of strength and beauty in our culture. Incorporating their shape into the typeface design preserves our heritage." Another

participant highlighted the importance of the Ekyanzi: "The Ekyanzi is not just a container; it's a part of our daily life and traditions. Including its patterns in the typeface connects our writing to our cultural practices."

Feedback from these discussions informed the typeface's character design, ensuring that the typefaces accurately reflect the cultural symbols they are meant to represent. Participants' suggestions led to the curvy stems and the specific patterns used in the letters, emphasizing the texture of the horns and the Ekyanzi's design. Additionally, participants provided insights into the practicality of the typeface's legibility, influencing the decision to maintain ample kerning and adjust the x-height for better readability. These contributions ensured that the Ankole long-horned typeface was not only aesthetically pleasing but also culturally resonant and functionally effective.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the findings, makes a conclusion and appropriate recommendations on each finding on the production of Long-Horned Ankole Cattle typeface as presented in the sub-sections of this report. The discussion, conclusion and recommendations are organised according to the set objectives of the study that sought to address the underlying issues;

(i) To analyse the shapes of the long-horned Ankole cattle in regard to typeface creation.
(ii) To explore ideas for creating typeface derived from long-horned Ankole cattle.
(iii) To develop typeface from long-horned Ankole cattle.

5.1 Characteristics of the long-horned Ankole cattle

This objective discussed the characteristics of the long-horned Ankole cattle and analysed the horn features to develop appropriate typeface for the posterity of the cattle keeping communities. These discussions integrate the views and opinions of the different scholars on the distinctive features adequate in the production of typographical characters for Ankole cultural heritage. In the underlying paragraphs, the ideas elaborated reflect the analysed in line with the findings presented under objective one of the chapter four.

The Ankole cattle had long, thick horns, which grew to a length 1.8 m. The length of the horns is approximately six times longer than the local breeds with short corn shaped horns weighing between 115 to 200kgs pounds each. The Ankole cattle horns weighed between 272 to 726kgs pounds each. Therefore, the generation of new ideas to create typeface was attainable through available information on their dimensions such as heights and weights of the horns. According to Olsson (2019), typeface thickness is controlled by typeface-weight. The bolder and lighter values determine how thick an element should be in relation to its parent element, while the numeric values define the absolute weights. According to Dobres, Reimer and Chahine (2016). Results indicate that under suboptimal rendering, the lightest weight typeface renders poorly and is associated with markedly degraded legibility. Under optimal rendering, lighter weight typefaces show enhanced legibility compared to heavier

typefaces. Relatedly, Braun, Silver and Stock (1992) said that a number of factors, including as typeface type, typeface weight, point size, and point size contrast, are connected to readability.

Dimensions are essential in determining the typeface with thick characters that give an appearance that relate and reflect the weight of the Ankole cattle horns. By so doing, the characters appeared to settle firmly on the baseline just like the large horns, firmly attached to the head of the cow. These dimensions are necessary in determining the heights and weights of the typefaces developed from the horns for easy readability. Luz et al. (2016) further provided evidence in their findings that readability, measured via mean fixation duration, increased significantly with typeface size. Considering measurements of cattle horns, elongated Ascenders and Descenders with narrowing terminals on most of the characters such as ‘g’, ‘h’ and ‘l’ were contemplated to be created. Coleman (2016) observed that certain typefaces have tall ascenders that extend well over the typeface's mean line and long descenders that may reach way below the base line. Coleman adds that a greater line space is required to accommodate ascenders that are taller and deeper. Different typefaces used different ascenders and descenders. Some of them were oblique, while others were vertical. Script typefaces frequently have intricate ascenders and descenders that extend well over the x-height or below the baseline.

The typeface weights of the lower and upper cases bear a significant impact on their appearances and readability to the viewer. Each upper-case character had a heavy visual weight to represent a wide stem, thick crossbar and thick bowl among others. The weight of a typeface should reflect its thickness in relation to the volume of white area its letters displace with ink (Thangaraj, 2004). Similarly, Elvis (2012) emphasized that a typeface's weight is determined by how thick the character outlines are in relation to the height of the characters.

The horns had a rusty red coat, solid in colour with speckled appearances. The other local breeds with short horns are dark brown and sometimes greyish in colour. The newly created typography characters had a range of colours drawn from rusty-red colour effect on the horns, bearing similar textural appearances and features, including the large number of small spots and patches of solid colours. The textural appearance achieved by creating thumbnail drawings, further improved the manipulated characters using a drawing tablet, a

technological tool that was helpful in creating more details that are refined. Textual shapes of different appeared on the characters, giving the typeface a rusty-red colour imitation of the original horn hues. Texture gives a distinctive appearance or feel to the surface of a design (Meggs and Purvis, 2016).

According to Brown and Woods (2009), with typeface found in contemporary desktop environments like the union of Microsoft Windows and Microsoft Office, the bulk of digital documents collected from a variety of sources can be rendered, which stresses the usability of the typeface thus being much more valuable to its users. The Ankole typeface designated to last for a considerably long period, are to last beyond the Ankole cows gestation period of 22 years. The shape of the typeface, character and appearance of each designed typeface was valuable enough to preserve the Ankole cultural heritage. Furthermore, the gravity shifting technique was appropriate for the elongation of characters (Masoud et al., 2016). The typeface is meta-designed in such a way that each character's description by a number of attributes permits the production of numerous variants that connect with the neighbouring characters and which variants may differ in shape and in their level of elongation (Sherif et al., 2012).

The Ankole cows had a dark brown coat and long white horns that curve outwards and then up, in the shape of a lyre that are majestic in appearance in comparison to indigenous breeds with short horns or no horns at all. The dark brown colour were good for integrating value on typeface to represent the skin of the Ankole cattle while the white colour can be reflected as hues for the different effects on the typeface development process. Scott (2019) argues that using white text looks great when done right. It is not traditional but makes the text pop.

5.2 Ideas for creating long-horned cattle typeface

This objective discussed the design forms based on the horn characteristics of the long-horned Ankole cows that were necessary for the formulation of Ankole typeface as elaborated in the subsequent paragraphs.

Through studio practice, a number of characters generated from the horns of the Ankole cattle were essential for manipulating the different typeface types; the distortions were evident in the creation of shapes and forms of the respective characters. For instance,

the development process required the distortion of the horn shape to create better characters much as the degree of bend various angles required precision (Shang, Kong and You, 2015), suggests that when a character and line are distant with respect to adjacent characters, the distortion estimate may have significant errors, leading to a reduced accuracy.

The textural lines given to the typeface indicate the rough parallel rough textural appearance of the horns, which adds beauty to the letters to create and overall aesthetic value to the characters. The textural concepts adopted for character design reflected the values attributed to the actual details on the physical horn itself; spots, lines and patches influenced some of the typeface created to enhance the textural appearance. Eren (2014) claims that using texture and typography together produces beautiful design effects. He continues by saying visual textures, be it photography or isolated images, can evoke emotion and bring life to any design.

Regarding the colours for the typeface, brown colour derived from the horns were picked; it was appropriate for creating visual hierarchy, especially the dark shades that created strikingly contrasting shades of colours. Colour, often overlooked as a way to create a hierarchy, provided a range of options that can enhance the quality of designs and colour ranges in the typeface. Hierarchy that is more distinct created from the lighter and darker shades in the horn colours, enhanced the samples, and final typeface characters colours of created in the process. Creating more contrast between type and its background can also add to typographic hierarchy (Chapman, 2018)

The horn weight, created to form three-dimensional letters, helped to show their thickness and visual weight; the ideas generated to give form and weight to the letters tended towards increasing the typeface visual weight. However, adding the three dimensional letters made the typeface heavy and hard to install on computers with a low Ram; thus the reliance on the horn's shape in the idea generation of the typeface create less weight that is easy to install in the computer. According to Daisy (2021) choosing a typeface that is accessible to a wide audience, look for simplicity and familiarity. She further stated that typeface with simple, familiar shapes are generally easier to read while typeface with a lot of detail or ornament are challenging to read or be visible even when used sparingly as headings. This is because the letter shapes may not be well defined or regular in shape and size; irregularities mean a pause to examine and process the characters. Indeed, manipulations of the typeface

weight done repeatedly helped to achieve the desired appearance of the typeface as illustrated through the drawings in 4.3.

5.3 Typeface developed from the long-horned cattle of Mbarara

This objective focused on the development of Ankole typeface for use in any design project besides preserving the cultural heritage of the Ankole community. Through the analysis of these horn characteristics and generated ideas for creating characters, the Ankole cattle horns provided a wide range of possibilities for the manipulation of ideas as demonstrated in these paragraphs.

The typeface created with the characteristics of the long-horned Ankole cattle was simplified through the modifications of their details as illustrated in the figures in chapter four *Figure 35* of this report. Using digital software, the modified typeface gave a professional finish that is adoptable for functional use by professionals in the field of advertising. It can be awkward and time-consuming to first define letter-forms by hand before computerizing certain shapes once your design is established. However, the first few characters must be crafted in graceful shapes on paper before being digitally refined (Clarke, 2021).

The findings provided supporting evidence that the newly designed Ankole typeface will preserve the cultural heritage of the Ankole community as strongly supported by Kigozi (2013), who affirms that empowerment to cover contemporary issues, including the events and moments that ought to be preserved. By recording such memories provokes reaction and engages debate on them whose images therefore serve to complement the written records. Kigozi's statement strongly affirms the objective of this research to develop typeface that can preserve the Ankole culture just as it is supported with the typeface presented in *Figure 35*.

The findings suggest that the newly cattle typeface will be able to promote the Ankole cultural heritage. As the long-horned Ankole cows continue to reduce in number, the Ankole community would be left with a souvenir to embrace their precious culture. Traditional cultures are slowly fading, artists ought to promote it to the world. The creation Ankole typeface to be used in the preservation of the Ankole cultural heritage represented through

the typeface characters presented in *Figure 35* whose characters are presented on several colour backgrounds and textures.

The research revealed the beauty of the Ankole long-horned cattle through the newly developed typeface as shown by the style of characters in *Figure 35*. These typeface have been suitable in mirroring the Ankole culture for generations as acknowledged by Stephen (2015) who says that much of the typography we see today is a reflection of our culture at large and which tells us something about where we are and where we are going.

The study indicated the potential of developing numerous creative typeface from a combination of several horn characteristics. This is exemplified by *Figure 21* as inspired by the horn's height, *Figure 11, 16* and *Figure 35* inspired by the horn's texture, *Figure 29* inspired by the horn's weight and colour, *Figure 31* and *Figure 32* inspired by the longevity and lastly *Figure 33*, which was inspired by the horn's curves.

5.4 Conclusion

The long-horned Ankole cattle, distinguished from the other local breeds, have exclusive and magnificent characteristic features that are appropriate for developing new typeface. The cattle is characterised by heights of the body and the horns; different coloured patterns; a dark brown coat; rusty red coated horns; longer lifespan; thick body character and; curvy shapes that can be developed into typefaces.

This objective concluded that a number of Ankole cattle horn features were useful in creating several beautiful typeface designs. These characteristics were strongly utilised to formulate typeface with a close resemblance to the horns of the Ankole cattle. However, the studio practice proved that distortion was inevitable in the generation of the design forms with respect to their characteristics.

Several typeface were developed to create new characters from the long-horned Ankole cattle. The development process involved distortion and exaggeration of some features so as to come up with typeface like Inyambo typeface, Ankole simple horn typeface, Ankole fame typeface and Ankole brown horn typeface. All these typeface were designed using a wacom drawing tablet as a tool for producing typography.

5.5 Recommendations

Typeface should be developed from sources of inspiration that a designer opts to use to create new characters for typography. Special attention should be given to the height, colour, pattern, weight and texture as is with the case with long-horned Ankole cattle typeface characters.

Ideas should be based on the characteristics of the source of inspiration. Utilizing the characteristics of your source of inspiration can create distinct aesthetic features in the typeface for any designer to develop for use by the public. The manipulation of these ideas into different forms and shapes may predetermine the characteristic quality of the different type cases prior to production of the final characters.

It is recommended that all drawings should be developed manually using tools such as pencils and colours before using technology for enhancement. The development process is strongly recommended from manual tools and then later technology can be used to make the typeface look more powerful and attractive thus becoming more readable.

In conclusion, typeface designers should take cues from specific sources when creating typeface and pay attention to the height, color, pattern, weight, and texture, much like the long-horned Ankole cattle typeface characters, to make sure that the traits of the inspiration are reflected in the typography. Therefore, before utilizing technology to enhance the typeface, manual creation using conventional tools like pencils and colors is advised for production of final characters that are strong, beautiful, and readable.

5.6 Areas for further research

Development of typeface based on features of the Ankole long-horned cattle beyond the horns for posterity of the Ankole heritage.

Dissemination of thee newly developed typeface for use by the typography community.

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APPENDICES

Appendix 1: Questionnaire

Introduction:

Thank you for participating in my research study. Your input is valuable in understanding how fonts inspired by long-horned Ankole cattle can be developed. Please answer the following questions to the best of your knowledge and experience.

Section 1: Demographic Information

1.1. Age:

Under 18 ☐

18-25 ☐

26-35 ☐

36-45 ☐

46-55 ☐

56-65 ☐

Over 65 ☐

1.2. Gender:

Male ☐

Female ☐

Other (please specify)

1.3. Education Level:

Less than high school ☐

High school graduate ☐

Some college or technical training ☐

Bachelor's degree ☐

Postgraduate degree ☐

Section 2: Background and Experience

2.1. Are you an Ankole long-horned cattle herdsman?

Yes ☐

No ☐

2.2. Are you an Ankole cultural elder?

Yes ☐

No ☐

2.3. Are you a graphic designer?

Yes ☐

No ☐

Section 3: Understanding Ankole Cattle

3.1. How would you describe the unique physical characteristics of Ankole cattle, especially their long horns and body shapes?……
……

3.2. In what ways do you believe these physical characteristics can be translated into typeface design?……
…….

Section 4: Typeface Design Inspiration

4.1. Have you ever considered or worked on typeface design projects inspired by cultural or natural elements? If yes, please describe your experience.

…….
…….

4.2. What emotions or messages do you think can be conveyed through typeface inspired by long-horned Ankole cattle?

……
…….

Section 5: Creating Typeface

5.1. Do you believe that typeface inspired by Ankole cattle can be created and used effectively in design projects?

Yes ☐

No ☐

Not sure ☐

5.2. If you're a graphic designer, have you created or used typeface inspired by Ankole cattle in your work? If so, please provide examples or describe your experience.

……

……

Section 6: Challenges and Suggestions

6.1. What challenges do you foresee in creating typeface inspired by Ankole cattle?

……

……

6.2. Do you have any suggestions or ideas on how to make typeface inspired by Ankole cattle more appealing and practical for design purposes?

…….

…….

Section 7: Interest and Involvement

7.1. Are you interested in getting involved in a typeface design project inspired by Ankole cattle? If so, in what capacity (e.g., designer, consultant, advisor)?

……

……

7.2. Is there anything else you would like to share or any additional comments related to typeface design inspired by Ankole cattle?

……

……

Thank you for participating in this survey. Your insights are greatly appreciated and will contribute to our research. If you have any further thoughts or contributions, please feel free to reach out.

Appendix 2: Documentary Analysis check-list

Resource Identification:

- Identify relevant journals, articles, and academic publications related to typeface design, typography, and cultural symbolism.
- Identify typeface used in product branding or design that may have connections to cattle or cultural motifs.
- Locate dissertations or theses that explore topics related to typeface, cultural heritage, or the use of animal symbolism in design.
- Identify e-books and books related to typography, typeface design, or the cultural significance of animals.
- Identify newspapers and periodicals that have published articles or features about Ankole cattle, typeface design, or cultural traditions.

Resource Selection:

- Select resources that directly or indirectly relate to the creation of typeface inspired by Ankole cattle or the use of animal symbolism in design.
- Prioritize resources that provide insights into the shapes and characteristics of Ankole cattle or offer ideas for typeface creation.

Resource Evaluation:

- Evaluate the credibility and authority of each selected resource. Consider the reputation of the authors, publishers, and sources.
- Examine the publication date of each resource to ensure that the information is current and relevant to your research.

Data Extraction:

- Extract relevant information, data, or insights from the selected resources, focusing on any discussions related to the shapes, characteristics, or cultural significance of Ankole cattle.
- Note any examples of typeface or design elements inspired by cattle or cultural motifs.

Cross-Referencing:

- Cross-reference the information obtained from different sources to identify patterns, trends, or common themes related to typeface design and Ankole cattle.

Resource Summarization:

- Create brief summaries or annotations for each resource, highlighting key findings and relevance to the research objectives.

Applicability:

- Assess the applicability of the information obtained from each resource in the context of typeface creation and the development of typeface inspired by Ankole cattle.

Reporting:

- Incorporate the data, insights, and examples gathered from the documentary analysis into your research report, highlighting their relevance to the research objectives.

Cultural and Ethical Considerations:

- Ensure that the information you extract and use respects the cultural and ethical considerations associated with Ankole cattle and the broader cultural context.

Appendix 3: Consent Form

Consent Form for Participation in Research Study

Title of Study: Production of Typeface using the Long-horns of Ankole Cattle: A case of Mbarara Municipality.

Principal Investigator: Himbisa Nimrod
Institution: Kyambogo University
Contact Information: himbisan@gmail.com

Introduction:

You are invited to participate in a research study conducted by Himbisa Nimrod. The purpose of this study is to explore ideas for creating typeface derived from long-horned Ankole cattle and to develop a typeface that is culturally significant and memorable for the Ankole people. This study will involve interviews, surveys, and possibly focus group discussions to gather insights and opinions about the design and development of these typeface.

Procedures:

If you agree to participate in this study, you will be asked to:

Participate in an interview or focus group discussion lasting approximately 5-15 minutes.

Complete a survey or questionnaire related to typeface design and cultural significance.

Provide feedback on preliminary typeface designs.

Risks and Benefits:

There are no known risks associated with participating in this study. However, if you feel uncomfortable with any questions, you may choose not to answer them or withdraw from the study at any time without any penalty. The potential benefits of this study include contributing to the development of a culturally significant typeface that can be used to promote and preserve the Ankole heritage. Your participation will help ensure that the typeface accurately reflects the cultural and aesthetic values of the Ankole people.

Confidentiality:

All information collected in this study will be kept confidential. Your identity will not be revealed in any reports or publications resulting from this study. Data will be stored securely and only the research team will have access to it.

Voluntary Participation:

Your participation in this study is entirely voluntary. You may choose not to participate or to withdraw from the study at any time without any consequences.

Contact Information:

If you have any questions or concerns about this study, please feel free to contact the researcher. If you have questions about your rights as a research participant, you may contact Kyambogo University.

Consent:

By signing this consent form, you indicate that you understand the information provided above and agree to participate in this study.

Participant's Name: _____

Participant's Signature: _____

Date: _____

Researcher's Name: _____

Researcher's Signature: _____

Date: _____

Thank you for your participation in this study. Your contribution is highly valued and appreciated.

Appendix 4: Consent form (Translated)

EKIHANDIKO KY'ORUSYA

Ekihandiko kyokweyunga omukyondoza.

Omutwe omukulu: Okukyondoza, n'okujumbura emiringo y'okukora enyuguta kuruga mum'ahembe malingwa ng'ente nz'Ankole om'uganda. Ahabwa Mbarara munisipalite.

Omukyondozi mukulu: Himbisa Nimrod.

Itendekyelo: Kyambogo university,.

Ekumanya ebikumukwataho: himbisan@gmail.com

Okwanjyula:

Abantu mweena nitubeta okwejyumbila omukyondoza okukozibwe Himbisa Nimrod. Ekigyenderelwa ky'oku kukyondoza, n'okujumbura emiringo y'okukora enyuguta kuruga mum'ahembe malingwa ng'ente nz'Ankole. Omulamwa ogu niguza kuba gwinemu okubuzibwa ebibuuzo, okulambula, abantu okwegita kuhana amagazi ahantekateka zokukora enyuguta zikozirwe omumahembe g'ente enyankole.

Enjendelwaho:

Kolikyilize okutwegitaho omushomo ogu, noshabwa kukola ebintu ebi:

Okwegita omukubuzibwa ebibuuzo ninga okwegita nabantu abandi kuhajyana ahanshonga okumala edakyika ekumi nitaano. Okyolondola ninga okubuzibwa ebibuuzo ahanshonga zokukora enyuguta zikozirwe omumahembe g'ente.

Okuganyilwa:

Tihaliho obuzibu bwona omuntekateka eji. Konka wafuna obuzibu bwona omubibuzo ebilakubuzibwe, nobasa kushalaho obutabigalukamu. Tikyine nshonga Yona.

Bwelinde:

Omunshonga eji bulikimwe nitukwitala nke kyomugasho, nabulikimwe ekilakunganyizibwe nitukikuma nabakugu bitu. Okutwegitaho tikulu kwempaka, noshalaho kutwegitaho hataliho

obushonsholokye. Waba oyine ekibuzo kyona ekyolikwenda kumanya, notwikyilila tukuyambe nokumanya bulikimwe. Nobasa nokwihikyilila Kyambogo University.

Wikyiliza kutwegitaho noza kushabwa kusayininga ekihandiko ekikweleka nti noyikiliza ebyagambwaho ahigulu omuntekateka eji.

Ezina……..

Sayin……..

Olunaku……..

Omukyondozi……..

Sayin……..

Olunaku……..

Webale kutwegitaho omuntekateka. Kandi okubaho kwawe nikuhebwa ekyitinisa.

Appendix 5: Ankole cow

Figure 39. Ankole long-horned cow. Source: Author

The above image shows an Ankole long-horned cow with its calf. As seen in the image, the cow has very long horns that beautifully curve upwards.

Appendix 6: Wacom drawing tablet

Figure 40. Wacom drawing tablet. Source: The researcher

The above image is for a Wacom drawing tablet which was used to make digital drawing. It was used by connecting it to the computer and then tracing the sketched letters in Adobe Illustrator and also using Adobe Photoshop for colouring.