

**EBIRA VERTICAL LOOM TECHNOLOGY: A PRACTICAL APPLICATION FOR
COMMERCIAL ABILITY IN NIGERIA**

BY

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CERTIFICATION

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DEDICATION

This project work is dedicated to God Almighty for His guidance and provision who also is the giver of life creative ability.

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Abstract

The Nigerian indigenous loom has always been a vehicle for cultural preservation. The indigenous weaving techniques are passed down through generations. Despite the enormous commercial viability of loom technology in Nigeria, this traditional technology faces several challenges. Some of these challenges include heavy weight of the fabric, inadequate knowledge of the commercial potential of the fabrics, lack of adequate access to modern weaving equipment, poor or little understanding of the traditional weaving equipment. Thus, there seems to be gradual loss of intricate techniques as a result of improper documentation. Consequently, the aim of the study was to explore the possibility of reducing the weight of this traditional woven fabric and to examine the equipment, materials, and techniques used in the Ebira fabric production with a focus on the looms used in the production of the fabrics.

The research methods used in carrying out the study is exploratory method. Materials used in carrying out the research include yarns, loom and its different accessories. Efforts were made to produce modified traditional hand woven fabrics with reduced weight. Thereafter, the modified hand woven fabrics were used to produce different end uses for fashionable purposes.

The study found out that it is possible to use the same traditional loom and its accessories that produced heavy weight fabrics to achieve lighter or reduced weight fabrics for contemporary uses. It was recommended that the Ebira woven fabrics should be explored so as to curb the rising unemployment menace in the country. It was also recommended that the Ebira people should commemorate their ceremonies with their traditional fabric (Ita-Inochi) for a better patronage and in turn, boost the state economy in particular and Nigeria in general.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The loom, one of humanity's oldest technologies, continues to play a pivotal role in fabric production. In recent years, there has been a resurgence of interest in its potential, particularly in Africa, where sustainable manufacturing practices are becoming increasingly critical. According to Robinson (1976), weaving loom was among the first technology and till date, it is the only technology that is widely established. Loom technology, which involves the interlacing of yarns to create textiles, has not only withstood the test of time but is also evolving to meet the demands of modern production and environmental sustainability.

In Africa, the practical applications of loom technology are wide-ranging from traditional hand-woven fabrics like Kente and Ankara to modern, mechanized textile production. The loom remains integral to local industries. Small-scale weavers utilize handlooms to create bespoke, culturally significant fabrics, while larger manufacturers employ power looms for mass production. These processes support various sectors, including fashion, home décor, and industrial materials like upholstery and curtains. The loom is also a vehicle for cultural preservation, as indigenous weaving techniques are passed down through generations.

Beyond cultural preservation, loom technology is being integrated into sustainable practices as Tod (1977) corroborated the fact that the Egyptians preserved their weaving by differentiating the wearer: the poorer masses wore cotton while the priests wear linen as it is also their custom to enshroud the dead with linen weaved material. Natural fibers, such as cotton, hemp, and jute, which are abundant in Africa, are increasingly used in

weaving. The manual nature of traditional looms reduces energy consumption, while innovations in mechanical looms allow for efficiency without sacrificing environmental responsibility.

The commercial viability of loom technology in Africa is promising, largely due to the growing global demand for sustainable and ethically produced fabrics. Africa's rich textile heritage, combined with a burgeoning fashion industry, creates a fertile ground for loom-based production. Locally made fabrics have the potential to meet both domestic and international markets, especially as consumers become more conscious of the environmental and social impact of their purchases. As Ross (1998) supported the view by stating that one feels little taller (more dignified) when wearing the African weave.

Loom technology can also support rural economies by providing employment opportunities. In many African regions, weaving is a household or community activity, contributing to local income and the economic empowerment of women. By scaling up these operations through investment in modern looms and training, African countries can expand their textile industries and create a competitive advantage in the global market.

However, to fully capitalize on the commercial potential of this technology, challenges such as access to capital, modernization of equipment and training must be addressed. Investments in infrastructure and supply chain management are necessary to enhance production capacities while ensuring that sustainability remains at the forefront of these efforts. Loom technology method of fabric production, plays a crucial role in the textile and fashion industries globally.

In Nigeria, this traditional craft has deep cultural roots, with indigenous weaving techniques like Aso Oke from the Yorubas, Akwete from the Ibos, and the Northern Fulani weaving systems contributing significantly to the country's textile heritage. For centuries, Nigerian weavers have used handlooms to create unique and durable fabrics that are not only worn locally but have also garnered attention on the international fashion scene.

In Nigeria, loom technology continues to serve multiple sectors of the economy, from fashion to home textiles and industrial materials. The practical applications of loom-based fabric manufacturing are evident in the production of traditional garments like agbada (for ceremonial wear), gele (head wraps), and more casual, everyday clothing. These fabrics often feature intricate patterns and vibrant colors, making them a staple of Nigerian cultural expression.

Moreover, with increasing emphasis on sustainability, loom technology provides a platform for using locally sourced natural fibers such as cotton, jute, and raffia. These materials are not only abundant in Nigeria but also environmentally friendly, reducing the need for synthetic fabrics and minimizing environmental degradation. The application of loom technology also extends beyond fashion into interior décor and furnishing. This entails making curtains, upholstery, rugs, and table linens, adding a touch of Nigerian craftsmanship to home environments. These products have the potential to serve both the domestic and the growing international markets as artisanal home goods.

Despite the full commercial viability of loom technology in Nigeria, the technology faces several challenges. No adequate access to modern weaving equipment, investment in training, and improvements in supply chain management are critical for

expanding production capacity and maintaining quality are widely found in this system of production. Government policies that support local manufacturing, protect intellectual property rights, and facilitate access to international markets can enhance the competitiveness. Unfortunately, the policies seem to yield no positive effect to the system. However, one of the key factors that support the commercial success of loom technology in Nigeria is the country's agricultural base. Nigeria is one of Africa's largest producers of cotton, and with strategic investments in processing and weaving infrastructure; this raw material can be converted into finished fabrics locally. This reduces the need for imported textiles and strengthens the local economy, creating job opportunities and fostering growth in rural communities where cotton farming is prevalent.

On this note, it is essential to know about the weaving process of Ebira loom weave process of production, explore samples and types of woven fabrics and ascertain how woven fabrics are made using common patterns. It is good to note here that through the interlacing of multiple strands of yarns fabric is created, either in whole or in part, by passing strand over under another. The result is called fabric which is used for clothing, blankets, bags, and more.

A weave is a type of textile in which yarns are interlaced to form a pattern. This can be achieved by passing the yarns through each other or by interlacing them around their own longitudinal axes. It can also be attributed to woven textile which is known as Twill plain weave with a diagonal pattern on the surface. Satin weave is a plain weave with a smooth surface that has a shiny appearance.

Textile weaving is an ancient craft that has been around for thousands of years. It is as old as man. It involves using threads, yarns, or fabrics made from natural or synthetic fibers to create cloth and other woven products such as carpets, curtains, tapestries, and even clothes. The earliest woven cloths were made from plant fibers and animal hair. According to Tod (1977) weaving started during the primitive era when man first interlaces the twigs of trees to make sleeping items in the cave. Weaving can also be done with other kinds of materials, without a loom such as wicker, paper, stick (basket weaving), even some are done with metal.

Textile weaving and its process starts with the yarn being spun into thread and then woven into cloth. The threads are then cut into different lengths, depending on what kind of fabric it was used for, before they are woven together to create a fabric. The process of weaving is a long and complicated one. It involves two strands of yarn or thread being wound around each other to create a fabric. The process begins with the creation of a warp, which is made up of two or more threads that are twisted together to form the foundation for the weaving. The warp yarns are then used to weave the weft, which is made up of yarns that are interwoven with the warp yarn to create the fabric. The process of weaving takes place in three steps: first, the arrangement of warp yarns are organized in a specific pattern that creates a fabric. Weft yarns are passed through the warp yarns and woven into the fabric. Thirdly, the formation of cloth is finished with any type of border or trimming. This is to say that warp and weft yarns serve valuable roles in the weaving production. Warp serves as a base to create the pattern, while weft is the yarn that goes through in between up and down yarns to form fabric used for cloth. Thus, warp and weft yarns create a strong, flexible structure that holds single yarn into a place

creating a solid fabric for cloth. This study therefore is based on the appraisal of equipment, materials and Techniques of production on the Ebira traditional woven fabrics with main focus on their looms and fabrics produced through the loom.

1.2 Statement of the Problem

The diminishing use of the Ebira loom has become a source of concern to the stakeholders in the state within the Ebira community. The decline in the use of the loom translates into low production of the Ebira traditional woven fabrics. In addition, the patronage of these woven fabrics has dwindled over the years. The low patronage could majorly be attributable to the fact that the Ebira woven fabric is not too pliable to wear. Hence, the need for the weight of the fabric to be lighter to make it more comfortable to wear. This constitutes the thrust of this research to enhance the viability of the traditional Ebira woven fabric.

1.3 Research Questions

In order to carry out the study successful, the following Research Questions were raised:

1. What are the traditional equipment used in Ebira traditional woven products be properly documented?
2. What types of materials are used in the production of Ebira traditional woven fabrics?
3. What are the techniques involved in Ebira traditional weaving?
4. How do modern technology and materials affect the traditional Ebira weaving practices?
5. How feasible is the reduction of weight of the Ebira woven fabric?

1.4 Aim and Objectives of the Study

The study aim to provide a comprehensive analysis of the weaving process, identify existing challenges, and propose strategies for preserving and revitalizing this indigenous textile tradition.

The objectives of the study are to:

1. Identify and document the traditional equipment used in the production of Ebira woven fabrics
2. Examine types of materials used in traditional Ebira woven fabrics
3. Assess the techniques involved in Ebira traditional weaving
4. Ascertain the effect of modern technology and materials on traditional Ebira weaving practices.
5. To reduce the weight of the Ebira woven fabric

1.5 Significance of the Study

This study is significant because it properly documents the Ebira weaving culture with a focus on the equipment, materials, motifs and techniques of production of the traditional woven fabrics. It is also hoped that the study would be of great value to textile students, fashion designers, indigenous textiles industries, communities and society at large.

1.6 Scope of the Study

The scope of the study is to identify and document the traditional equipment used in the production of Ebira woven fabrics, examine the types of materials used in the traditional Ebira woven fabrics, assess the techniques involved in traditional weaving,

ascertain the effect of modern technology and materials on traditional Ebira weaving practices, and to reduce the weight of the Ebira woven fabric.

1.7 Operational Definition of Terms

Abada: *Abada* is a long flowing gown typically worn by men. The length is sometimes a little below or above the knee.

Amu: is known as cap in Ebira language

Ahasi (Lease-Rod): a set of sticks in Ebira language.

Avoh (Selvage): the outer finished edges of both sides of a fabric.

Cover Factor: The closeness of the number of yarn by the length and breadth of the fabric

Ebobo: *Ebobo* refers to an Ebira word for head tie

Igede (Shed): the vertical space between the raised and un-raised warp yarns

Ikekere: a short smooth stick with two sharp edges used when weaving to maintain the edges of the fabric for uniformity of the width and selvage from shrinkage.

Ita-Inochi: An Ebira word gotten from two words “*ita*” meaning cloth and “*ochi*” meaning sticks. It therefore means, fabrics gotten from sets of sticks (loom).

Ita: wrapper tied around the waist of sometimes around the chest

Korofo: this is used to pass thread before putting it on the loom.

Aruchi: is a pair of trouser in Ebira Language.

Oguntoro: *Oguntoro* is referred to as loom.

Ochaha: separates the front from the back of the fabric.

Ohanse: This is what determines the design and pattern of the cloth to be woven.

Ohoro (Beam): a stick made of dried raffia stem that holds the warp thread. Its smooth surface helps the thread from tangling.

Okaha (Beater/Sword): it a type of wood carved out in a sword shape and it has a smooth surface. It is used to press the weft yarn together during weaving and it also helps to create a passage for the weft yarn during the weaving process.

Otiza: a shawl used by women usually hung around the shoulder to complement their dressing.

Oyunvo: It refers to females blouses with long sleeves, long enough to reach below the elbow or to the wrist.

Ubajo: a strap used by mothers to strap their babies to their back.

Yarn Counts: This is a number indicating the mass per unit length or the length per unit mass of a yarn.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter deals with the review of existing literature that are relevant to the research. The review was carried out under the following sub-headings:

- Conceptual Framework
- A Brief History of the Ebira People
- History of Traditional Woven Fabric in General
- Types of Looms Used around the World
- Types of Looms Used in Nigeria
- Ita-Inochi Fabric
- Types of Ebira Traditional Woven Fabric (Ita-Inochi)
- Designing Techniques of the Ebira Traditional Woven Fabric
- Traditional Premiums of the Ebira Traditional Woven Fabrics
- Empirical Studies
- Summary of the Review

2.1 Conceptual Framework

The conceptual framework of this study is on cultural sustainability. Bekerman and Kopelowitz (2008) defined cultural sustainability as the attempt to transmit or convey culture from one generation to another generation in an hostile world. Cultural sustainability is the amassing of works, tastes, inventions in one idea through the actions and outcomes of human works. Culture translates as a set of cultural activities, which include all activities conveyed in art and more broadly. Culture in sociological and

anthropological perspectives is seen as a way of life, practices, attitudes, and fundamental beliefs that exist in a particular society.

Culture in a society can be found in these elements of culture, which include knowledge systems, social organization systems, language, living equipment and livelihood systems of life, technology systems, religious systems, and arts. Technology is the system of technology, science, and management that is evolved, accepted and practiced by any cultural community of people for increasing their vitality, productivity and sustainability through education, training and minimal external resources.

Albers (1965) stated that “every fabric is mainly the result of two elements: the character of the fiber used in the thread construction or the weave itself”. She continued by stating that the spinning process plays a part in determining the product as well as the finishing of the fabric. Ojo (2000) opined that fabric improvement as an art of making the pattern on textiles, leather, using thread of cotton, linen, silk and needle. These designs are made of colours exhibiting the intricate design. However, the dominant conditioning factors are the character of the raw materials and the weave type. Oloromeke as cited by Adam (2014) ‘weavers who are conservative in their choice of patterns and colours tend to concentrate their interest on the alignment of colour display and preservation of their tradition. These play a vital role in the outcome and effect of the woven fabric in terms of weight, quality and the aesthetic value of the fabric. Thus, the effective manipulations of these indices result to the successful production of the end-use. This incisive study shall unravel details of what the Ebira people is like, thereby making a review of their cultural heritage and traditions that have existed among them over time.

2.2 A Brief History of the Ebira People

The Ebira people are those people that occupy Okehi, Okene, Ajaokuta and Adavi local government areas of Kogi State. Ebira as a name is referred to the language, the geographical location and the people themselves. Other Ebira groups in the state include Ebira Okene, Ebira-Igu and Ebira Koto. Using the name of the most popular town of the land, they may be referred to as Ebira Okene (Okene and Suberu, 2013) with a total population of 721,932 people (The National Population Commission, 2006). According to Segun and Samuel (2010), Ebiraland is a known to be a hilly inland area stretching roughly for 23kilometers west of the Niger at Ajaokuta and 32 kilometers south west of the Niger-Benue confluence. They further stated that the landmass which is about 80 square kilometers excluding natural obstacles like forest reserves. Ebira land started with small villages joined together as near towns, progressive and gradually and expanded into a huge settlement with intervening barriers. According to Audu,(2010), the hidden and obvious meaning of 'Ebira' is decent behavior. However, Ebira Okene is the main focus.

Ebira land lies between sixty and eighty north of latitude and between sixty and one hundred east longitude, located within a hilly sketch of land south west of the river Niger and river Benue confluence area, it shares boundaries with the Yoruba speaking people of Owe, Ijumu, Akoko, and Aworro to the west and north-west, the Ososo, Ogori-Magongo, and some other Akoko-Edo people to the south and South-west, the Hausa, Nupe and Ebira group at Lokoja to the North and River Niger to the East. The Ebira land covers an approximate area of 2,977 SP. (Ozigi, 2004).

The Ebira people are naturally republican, hardworking and outspoken. They are popularly known for their farming and cloth weaving. Until recent times, over 55 percent

of the people have deviated from their occupation to practicing of politics and the women engaging in white collar jobs while only the older ones still engage in farming and weaving. Ebira has numerous annual cultural festivals, which include echeori, ekuechi and echeane amongst others. The echeori is the new yam festival which is usually celebrated with making sacrifices in the secret furrow of Ori (deity) on top of a high mountain in appreciation to the deity for provision, protection and bomber harvest. The ekuechi (masquerade) is a night masquerade festival that marks the Ebira calendar's end of year while the echeane (women festival) is rotated from one quarter to the other between April to June. The period of this festival was believed to be the time that betrothed maidens are given away in marriage (Okene et al, 2010).

Figure 1



Map of Kogi State showing Okene

Source: <https://www.researchgate.com> (2024).

2.3 History of Traditional Woven Fabric in Nigeria

Traditional weaving is a popular craft among many ethnic groups in Nigeria. For example, Yorubas are popularly known for their *Aso-oke* which they produce using the horizontal narrow band loom. Some parts of the Yoruba like the Oyo, Osun as well as Ondo people use the vertical broad loom also. The Aniocha people of Delta state produce their indigenous fabrics called Akwa-ocha, using the vertical broad loom. Among the few towns and villages that still engage in the craft using the vertical broad loom made in Nigeria, are Okene, and few of her neighboring villages like Enwan, Somorika, Igarra, Ososo etcetera in Edo state.

The centrality of clothing need in the life of human beings is rather uncontroversial world-wide. Clothing ranks among the most basic necessities of life, such as food and shelter. It is therefore needful to man. In addition, part of the decency that man desires is provided by clothing. In spite of the unique nature of clothing, however, it would appear that not many people understand it beyond being wearing apparels. The development of new materials for use as covering or ornament has played a major role in the history of clothing. The production of textiles required the ability to process fibers, spin them into threads and make cloth from the thread. Cloth can be made in a variety of ways, such as knotting, knitting and braiding, but most clothes are made by weaving and is usually done on a loom (Adeoti and Nuhu, 2011). Glencoe (1990) also explained that, the manufacture of textile fabrics is by interlacing threads, the machine employed being called a loom.

The power loom in its simplest form is essentially the same as a hand-loom adapted to rotary driving. It consist chiefly of a large frame in which several hundreds

of parallel threads collectively called the warp are laid between rollers situated at each end and of two oscillating frames at right-angles to the warp, each carrying a row of small rings called heddles, through which the odd and even warp threads pass. In 1760, Robert Kay invented the drop box loom, which enables several different colour of weft to be used at will, thus providing for the weaving of coloured patterns and in 1801 Joseph Marie Jacquard developed a loom in which the warp threads could be raised and lowered in sets of several threads each, thus making possible the weaving of fabrics with elaborate patterns. The power loom, invented by Dr. Edmond Cartwright in 1785, began to be widely used at the beginning of the 19th century, and has since been steadily improved and elaborated. A modern development is the shuttle loom; this high-speed machine is increasingly coming into use.

Weaving being, after agriculture, the prime necessity of man has its origin as prehistoric, that is, dateless. Spitzer (2002) observed that, weaving probably originated in China where the Chinese raised silk worms. With the long fibers, it was necessary to invent a system that would interlock easily, because of the immense number of threads that had to be packed together into a limited space. Spitzer explained that, weaving is so old that it probably started even before the migration of man. Amongst primitive people on all continents, the Chinese, the Tibetans, on their mountain tops, the Monads from Asia Minor, the Yeman living in south of Arabia, the African ethnic groups, the American Indians, employ similar weaving methods. The same techniques are used today among people who have had no communication with the outside for thousands of years. Meilach (2002) also observed that, people learned to weave thousands of years ago with grasses, leafstalks, palm leaves and thin strips of wood. The author further

said, historians do not know when the process of weaving cloth developed. But civilization in central Europe, the Middle East, and Pakistan probably had learned to weave textiles by 2500BC. Ancient wall paintings illustrate weaving techniques mastered by the Egyptians as early as 5000BC. Today weaving ranks as a major industry in many countries, weaving is also a popular craft. Many people design and weave colorful fabrics as a hobby.

2.4 Definition of a Loom

Loom according to Seema, (2011), is a kind of device used in weaving: either to weave fabrics or to knit fabrics. Norman and Langford (1978) describe loom as “weaving done on a machine is called a loom”. Loom is very important to man as there cannot be fabric without a loom. According to Picton and Mark (1989), loom does two important things, which is, it gives tension to the warp and provides a kind of shedding device. Generally speaking, loom is the machine used for weaving; it can be of manual or automatic. Looms come in different shapes and sizes.

2.5 Types of Looms used around the World

There are different types of looms used around the world in weaving fabrics of different designs and patterns. They are as follows:

Draw Loom: Draw loom according to Becker (2009), is a loom in which the pattern is formed by a mechanism which lifts individual warp ends or small groups of warp ends.

Figure 2



Draw Loom

Source: <https://www.google.com.ng/search?q=Draw+loom+image> , 2025

Power Loom: The power loom run through mechanical energy like electricity, steam, and the likes, it is mechanically structured and is faster than the handloom. (<https://www.google.ng/search?q=powerloom+...>)

Warp-Weighted Loom: The warp-weighted loom is a vertical loom that may have originated in the Neolithic period.

Figure 3



Warp-Weighted Loom

Source: <https://www.google.com.ng/search?q=warp-weighted+loom+image> , 2025

Jacquard Loom: According to Shailaja, and Jacquie, (2009:66), the jacquard loom was named after Joseph Marie Jacquard, the inventor of the loom. The jacquard loom help to reduced the amount of human labor and allow pattern to be stored in the form of punched cards that can be reused several times to achieve the same product (<https://www.google.ng/search?q=powerloom...>).

Air Jet Loom: In the Air Jet loom, a jet of hair is used to drive the weft yarn through the shed at speeds to 600 production per loom per minute. Uniform weft yarns are needed to make fabrics on this loom. At the same time heavier yarns are suitable for Air Jet loom

while the lighter fabrics most times very difficult to control through shed (<https://www.google/search?q=water+jet+loom>).

Figure 4



Air Jet Loom

Source: <https://www.google/search?q=air+jet+loom+image+client>, 2025

Water Jet Loom: The water jet loom is fast in weaving, with speeds up to 600 PPM (PPM means production per loom per minute) with a minimal noise. The loom does not place much tension on filling yarn, as the pick in tension is less (<https://www.google.com.ng/warp-weighted+loom>)

Shuttle less Loom: as its name implies, is a loom without shuttle. It is a type of loom that can be compared with air jet, water jet, projectile, rapier etc., as in the case of Tamilnadu power loom sector, there are only projectile or rapier loom with attachments of cam dobby etc. <https://www.google.com/search?q=shuttle+less+loom+picture>

Figure 5



Shuttle-less Loom

Source: <https://www.google.com/search?q=shuttle+less+loom+picture>, 2025

Semi-Automatic Loom: This type of loom is basically the plain loom with additional attachment of automatic electronic/electrical warp stop as well as weft stop motions along with positive let off motion. (<https://www.google/search?q=air+jet+loom>).

Automatic Loom: An automatic loom is basically a loom that has auto pin charging mechanism along with all the automatic warp and weft stop motion as well as positive let off motions. (<https://www.google.com/search?q=semi+Automatic>)

2.5 Types of Traditional Looms Used in Nigeria

Looms, according to Omotoso (2019:24) can generally be divided into two; which are modern loom and conventional loom. The modern looms are those looms operated electrically or are powered through other means. The modern looms are the industrial looms. Some examples of modern looms are Water powered loom, Jacquard loom, Air

Jet loom, Rapier loom, Shuttles looms. The hand loom is an example of a conventional loom. Hand loom is either vertical or horizontal, and at the same time could be either a Floor loom or Table loom. Other examples of conventional looms are Card loom, Inkle loom, etcetera.

A loom is a device used to weave cloth. Ada and Ali (2010), define loom as indispensable equipment for fabric weaving. The basic purpose of any loom is to hold the warp yarn under tension to facilitate the weaving of the weft yarn. The precise shape of the loom may vary but the basic function is the same. The two major looms commonly found in Africa, down to West Africa, to Nigeria are mostly the Horizontal loom and Vertical loom. Though, the methods of design differ they all basically do the same work of plain weave (Omotoso, 2019).

Olutayo et al (2011), states that before colonial era, the western people of Nigeria (Yoruba speaking people) were used to four types of loom. Osaigbovo (2014), supported the view by stating that there are four major types of looms used in Nigeria, which include:

- The Narrow Horizontal Treadle Loom
- The Vertical Loom with Fixed or Rotating Warp
- The Vertical Broad Loom
- The Raised Horizontal Ground Loom

2.5.1 The Narrow Horizontal Treadle Loom

The horizontal loom is so called because of the structural arrangement that makes the warped thread to run parallel to the ground in front of the weaver. The horizontal loom unlike the vertical loom is a device used for outdoor activity and it uses more

weaving tools and accessories compared to the vertical loom. The major weaving operation on the horizontal loom is usually executed by the weavers feet pressing the pedals or treadles alternately, thereby manipulating the heddles which are connected to pulley, suspended from the rafter of the weavers shed. Gale (2002), stated that the alternating pedaling of the treadles creates the shed, through which the weft passes. He went further to assert that the tossing of the boat-shaped shuttle from one hand to the other creates the woven cloth. According to him, as each sequence (shedding and picking) is completed, the weft is packed with the use of the beater, into the woven web; and as weaving progresses, the warp which is usually stretched some distance in front of the weaver and kept taut with the support of a heavy stone dragged closer to the weaver.

The horizontal narrow loom with heddles and treadles is often referred to as Sudanese loom. It has a wide distribution in West Africa from Senegal and The Gambia down to Lake Chad. Lamb (1975) suggests that the obvious features of the West African horizontal loom are that it is narrow, and it produces cloth in narrow strips for bands. These strips very rarely exceed twelve inches in width". According to Eicher (1973), the origin of this narrow loom was introduced to West Africa from the Near East during the early AD centuries by a group of Semitic Syrians who eventually became absorbed by the Fulani people.

Figure 6:



Horizontal Loom

Photo: Omotoso, Adekola, 2019

2.5.2 The Vertical Loom with Fixed or Rotating Warp

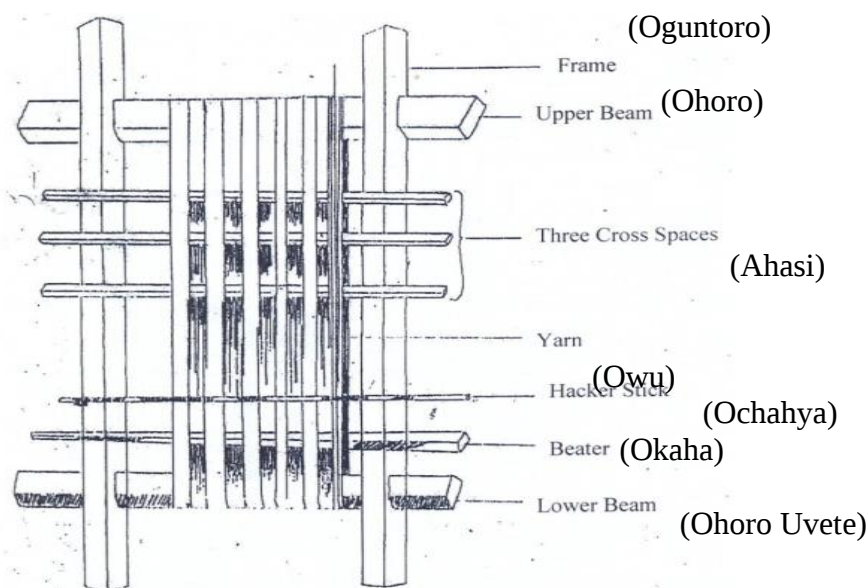
Osaigbovo (1980) presents two main types of vertical looms in Nigeria. The first one is used mainly by women and it has the warp thread mounted vertically between two horizontal beams in such a way that it makes round those beams an endless belt. The warp rotates around the two beams as weaving progresses. The second type has the warp fixed to the two horizontal beams. This type of loom is used mainly for the purpose of weaving raffia.

2.5.3 The Vertical Broad Loom:

The vertical loom is mainly a rectangular frame. The poles are either made of strong trees cut down from the bush or well sized wood from carpenters. These woods are either nailed or tied together with rope or raffia. The upper and lower beams are made from stems of raffia while the shed sticks are gotten from the branches of raffia.

When using a vertical loom, the weaver starts or proceeds from the bottom upwards, the weave is often an unbalanced basket weave with three weft yarns passing alternatively over and under two warp yarns. The vertical loom is less in terms of technology development than the horizontal loom. Their accessories include the followings Bobbins, Creel, Dents, Heddles, Harness, Reed, Shuttle, Spindle, Shedding, Treadles, and Yarns.

Figure 7



Upright Single Heddle Loom (Vertical loom in Epira land Kogi State)

Source: Sadiq S. et al., 2019

Figure 8



Vertical Loom with Ita-Inochi

Photograph: Bernadette Ifuemi, 2024

The Ohu Bariki (main market) remains the most recorded patronage when it comes to Ita-inochi. Generally, people traveled from different parts of the country to purchase the clothes from the local weavers. The loom (Oguntoro) is the common item in most Ebira families when the business boomed locally and internationally.

2.5.4 The Raised Horizontal Ground Loom

This type of loom is the horizontal version of the vertical loom. The warp is either attached to or runs around two bars which mark the outer limits of the loom. Weaving takes place by means of one heddle (with or without supplementary heddles) and one shed stick.

1. **Loom:** There are various types of loom to choose from, based on the designs you are creating or your skill level, you can choose the right loom for your use.

Currently, wooden frame loom and a cardboard loom is used in carrying out the research.

- i. **Loom for Learners/Beginners:** The learners loom is simple and help learners learn the basics of a loom. The weaver is in control of moving the yarns and tightening any loosed yarn by hand.
 - ii. **Loom for Professionals:** The biggest difference between using beginner level and more advanced looms is the amount of functions.
2. **Warp Yarn:** The most peculiar type of warp yarn used is cotton yarn. It is desirable and it can hold the weft yarns in place well.
 3. **Shed Stick:** is a stick that simplifies weaving by creating an opening between the warp yarns for the weaving yarn to pass through.
 4. **Scissors:** is used for cutting warp and weft yarn.
 5. **Tapestry Needle:** Tapestry needles are blunt needles used to weave yarns through warp yarns carefully without damaging the yarns. It has different sizes, and material most commonly tapestry needle are made from metal or plastic and more recently wood.
 6. **Loom Comb:** is used to regulate the density of the yarns by beating yarns down on the loom. Loom comb comes in different shapes, sizes and weight.
 7. **Yarn Bobbin or Shuttle:** Weft yarns are wrapped around yarn bobbing or shuttle to keep them organized while weaving. Bobbing range in size and material but are usually small in other to move through the warp yarn quickly.
 8. **Notepad/Sketchpad:** if one is not a good illustrator or designer, before starting a creative journey, one needs a notepad or a sketchpad.

9. **Weaving Yarn:** There are a variety of natural and acrylic yarns to pick from and use. Yarns can be manipulated into patterns and weaving skills to create delightful woven images.
10. **Measuring Tool:** A measuring tool such as ruler or tape measure keeps track of the width and weaving edges.

2.6 Ita-Inochi Fabric

Culture is a way of life of a people in a given period of time. In most instances, people do everything possible to preserve their culture. However, in Nigeria, many have abandoned their culture in preference to foreign ones in the name of civilization. But despite the influx of foreign culture to Nigeria, there are few who are bent on preserving their own. One culture that still retained its value is the specialized woven cloth popularly called Okene cloth (Ita-Inochi). Ita-inochi is the pride of the Ebira people and it is the traditional cloth worn during important occasions, festivals or as casual wear. The fabric is made from cotton and exists in form of wrapper. Ita-inochi is a hand woven fabric, produced mostly by women and it has proven to stand the test of time.

The word “ita-inochi” was coined from two Ebira words, ‘ita’, which meaning cloth and ‘inochi’ means thick; therefore, Ita-inochi means thick cloth. The ita-inochi has different symbolic meanings and functions, among which is a single panel cloth that is used to strap babies to the back, which is known as ubajo. This one panel cloth can also be used on wooden chairs that serve as seats or backrests. More panels of Ita-inochi joined together can be used as coverings for both men and women for different ceremonies it can also be used as covering for protection against insects or cold. Also, the Ebira people generally use the woven fabrics as wrapper, blouse, shawl, which is usually

hung on the shoulder of the user; the men wear a complete dress consisting of trouser, top, agbada and cap. The ita-inochi is highly valued as a special gift for dignitaries and as gifts to a newly married bride from her family. It is also used as commemorative cloth or as uniform for certain events or occasions.

In ancient times, the first type of traditional fabric woven by the Ebira women known as was used for making hunter's shirt and skirt with many charms and amulets tied on the fabric. The fabric is also used for making costumes for traditional musical troops and dancers as they embellished the fabric with cowries, seeds, and feathers worn with beads on their head, waist, neck, wrist, and ankle. It is also used to make dresses worn by masquerades which feature animal shells, cowries, animal horns, teeth and tiny bells tied around the edges of the dress. Special white ita-inochi is sometimes woven and placed around the back of the horse which the king (Ohinoi) rides on around the town during special festivals and some prominent titled men place special other for the traditional weavers to write their title on the woven ita-inoch which they hung around their shoulders.

This Okene traditional weaving practice and the woven fabrics have experienced setbacks due to serious declined in patronage. One of the major reasons for the drastic drop in the traditional woven fabric is the issue of weight as the name of the fabric implies (thick cloth). Ita-inochi is a heavy fabric because the fabric is tightly woven and the yarn counts are coarse.

Figure 9:



Okene (Itainochi) Fabric

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 10:



Okene (Ita-inochi) Fabrics

Photograph: Bernadette Ifuemi Oluyole, 2025

2.7 Types of Ebira Traditional Woven Fabric (Ita-Inochi)

Ita Oyivu Oturosa

Ita Oyivu Oturosa consists of a white and navy blue, which can be worn during wedding ceremonies, naming ceremonies, chieftaincy title etc. it is popularly used in Ebira land because of its unique design and its white and blue colours.

Figure 11:



Ita Oyivu Oturosa (it is heavy count weight)

Photograph: Bernadette Ifuemi Oluyole, 2024

Ubajoin Ebira

This type of fabric is mainly for strapping babies. They usually carry strip designs or rough designs. Some carries a combination of strip designs at the edges of the fabrics while the rough design is centralized. It varies in colour and their design is not restricted to a particular design. It can be in plain pattern, blue, white, blue or black with a contrasting colour or as requested by the customer.

Figure 12:



Ubajoin Ebira

Photograph: Bernadette Ifuemi Oluyole, 2024

Abarika:

Abarika means congratulations. It can be worn during marriage or naming ceremony. The fabric consists of yellow and white strips with green abstract designs. They can also inscribe the title of the celebrant if so desired by the owner. It is also used during chieftaincy title ceremonies and it is mostly worn by the celebrants.

Figure 13:



Abarika (Heavy Weight)

Photograph: Bernadette Ifuemi Oluyole, 2024

2.8 Designing Techniques of the Ebira Traditional Woven Fabric

Osaigbovo (2014), identified four types major types of designs used in hand woven fabric. These are the vertical or horizontal strips, the inlaid, the ikat and the lace or hole design. These include:

The Vertical or Horizontal Stripes Design:

This design is achieved by the arrangement of the warp or weft horizontally or vertically. Ademuleya (2002), state that these designs are un-patterned and the strips are made by the alignment of the warp yarn or a combination of both the weft and warp colour alignment. This designing technique is otherwise known as warp and weft colour alignment.

Figure 14:



Horizontal Stripes Design

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 15:



Vertical and Horizontal Stripes Design (Heavy Weight)

Photograph: Bernadette Ifuemi Oluyole, 2025

Ikat Design:

The Ikat can be created on both warp and weft yarn. It is done by tying and dyeing some of the warp or weft yarn before being interlaced to create a woven fabric. The name ‘Ikat’ is derived from the Malaysian word “Mengika”, which means “to bind together” and it also refers to the technique of dyeing sections of the gathered yarns to form an area to resist dye (Cooksey, 2011).

Figure 16



Ikat Stripes Design (Heavy Weight)

Photograph: Bernadette Ifuemi Oluyole., 2025

Figure 17



Ikat Zigzag Design (Heavy Weight)

Photograph: Bernadette Ifuemi Oluyole, 2025

Lace Design:

This design comprises of the weft float weave and holes positioned on the woven fabric as preplanned by the weave. Harney (1995), describes this type of design as cloth embellished with a woven open work with supplementary weft float weave motif. Though, the Ebira people are not known for this type of design in their woven fabric.

Figure 18:



Lace Design (Lighter)

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 19



Weaving of the Lace Design (Lighter)

Photograph: Bernadette Ifuemi Oluyole, 2025

Inlaid Design:

This type of design is done by using the weft yarns to place or lay over the weave to create images or designs on the woven fabric. Ademuleya (2002), identifies this type of design as supplementary design as he states that the design the weft float patterning is used in creating images, usually of rayon and lurex yarn on the surface. This design is mostly used by the Ebira people for traditional marriage. The inlaid design could be

much on the fabric or scanty; depending on the choice and the colour chosen by the customer.

Figure 20:



Inlaid Design (Lighter)

Photograph: Bernadette Ifuemi Oluyole, 2025

2.9 Traditional Premiums of the Ebira Traditional Woven Fabrics

There are number of factors determine the traditional premium placed on a particular hand woven fabric. These include the design, the age of the fabric, type of weaving yarns and the dye

2.9.1 Design:

Nwanchukwu and Ibeabuchi (2012), states that hand woven cloths have a lot of significant designs used to decorate them. These designs enhance the pieces of woven cloths and in return, add more value them and course it to be appreciated by the people that own them and others. These designs are made up of patterns portrayed in abstract

form and in different colours. Ebira woven fabric can be in stripe patterned or as plain design.

In Ebira land, the age of a local hand woven fabric determines the premium placed on such fabric. Age is mostly considered in rating the prominent old hand woven fabrics.

2.9.2 The Yarn of the Fabric:

The value of any woven fabric is also considered by the superiority of yarn used as well as the type of yarn. The woven fabric made with hand spun yarns are older in age and were more appreciated because hand spun yarns are not easily obtainable for use in recent times. Therefore, the existing ones need to be treasured and preserved, thus attracting higher premium. Woven fabrics made with hand spun yarns are usually very thick and are also coarse. Adepeko (2008), indicates that; the use of hand spun yarns for weaving has perhaps made possible the re-use and other social renovations (that is, the traditional way of washing, ironing and re-designing the traditional hand woven fabrics) done to the fabrics because the thicker a woven fabric is, will perhaps, suggest a longer life's span.

Figure 21



Ovivi the Finished Ita-Inochi Fabric

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 22



Ita-Inochi Fabric used as Ceremonial attire

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 23



Ita-Inochi Fabric used as Ceremonial attire

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 24



Ita-Inochi Fabric used as Ceremonial attire

Photograph: Bernadette Ifuemi Oluyole, 2025

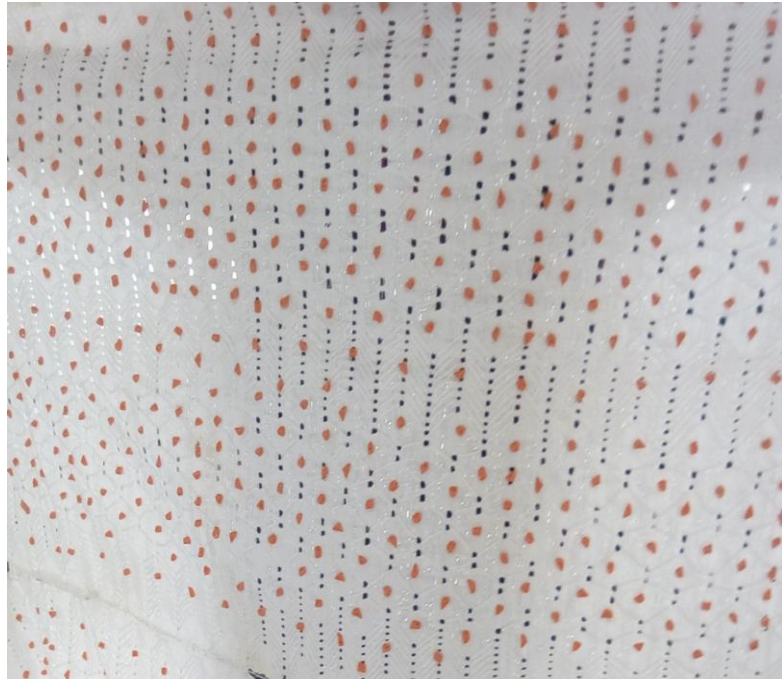
2.10 Empirical Study

The Pennsylvanian University described Empirical study as the studies that were based on observation. The researcher uses practice with the loom and not theory or opinions. The description corroborates with the explanation from Emerald (2019) that concrete measurements and observation of phenomenon are directly experienced by the researcher as cited by Lasis (2014). The following are some key empirical studies and artistic practices relevant to this study that highlights techniques, materials, methods, outcomes and end uses.

Mary Okonji: Use of Applique and Beading Techniques to Embellish Otu-Ogwu Woven Textile

Mary Okonji is a traditional textile designer who employs the use of beads to enhance Otu-Ogwu woven fabrics. The traditional woven fabric is worn and used by the Anioma people of Delta State. The Otu-ogwu is made from wool and mostly used as wrapper. According to Okonji (2021), the Otu-Ogwu is hand woven fabric that is very strong and can last for a decade. According to her, the Otu-Ogwu fabric is usually not a day-to-day cloth as it is worn usually during an important occasion and ceremonies that requires performing traditional rites, norms and practices probably, due to its heavy weight. Okonji emphasized the preservation of cultural heritage of the Anioma people through the use of their traditional woven fabric (Otu-Ogwu).

Figure 24



Beading Techniques Otu-Ogwu Woven Fabric

Collection: Okonji Mary, 2021

Figure 24



The Applique Enhanced Otu-Ogwu Woven Fabric

Collection: Okonji Mary, 2021

2.11 Summary of Literature Review

The use of loom was explained by Olutayo, Olayinka and Fadina (2011) that before the arrival of the colonial masters in Nigeria, looms has been in existence and have been used by many locals to weave clothes for both cultural and economic purpose. Mcphilps (2012:1) also buttressed the fact that weaving is an ancient craft of man dating to the early new Stone Age, when he learnt to make a rough kind of clothing from fibers of flax plant. There are different types of weaving making among various ethnic groups of Nigeria.

The major equipment used by Okonji in the production of the traditional fabrics and production process were the same with this research. Both researchers employed the use of wood, bamboo, raffia palm (loom) sourced from the local environment. However, Okonji did not consider weight reduction because of the beads added to the woven fabric which added to the weights of her woven fabrics as she stated that “the *Otu-Ogwu* is not just a day to day wears, but a fabric to be use occasionally” (Okonji, 2011).

In conclusion therefore, this research is different from the research of Okonji because the emphasis of this project is on weight reduction and to still retains it quality and colours so as to attract both the national and the international community and to use the Ebira traditional woven fabrics (*Ita-inochi*) as day-to-day wears so as to generate income for the state and the country at large.

CHAPTER THREE

MATERIALS AND METHODS

This chapter deals with the Research Design; Method of Data Collection; Description of Materials; Procedure and Method of Visual Analysis.

3.1 Research Design

Research methods used in carrying out this study is exploration. Exploratory research is a type of research that studies problem that has not been more clearly anticipated, examined, change functioning, priorities, and advance the final research design. Exploratory research studies according to Kothari (2004) are also termed as formulative research studies.

3.2 Method of Data Collection

The methods employed for the data collection was the use of the library, internet and resource persons while the practical on the other hand involved the use of exploration method. Suitable materials like dyes, yarns, plain fabrics, and loom were used. Efforts would be made to produce modified the traditional hand woven fabric of the Ebira people with their loom. Thereafter, the modified hand woven fabrics were used to produce end use for fashionable purpose.

3.3 Materials, Tools and Equipment Used

The major equipment used in carrying out this research is the vertical broad loom. The vertical broad loom has a rectangular shape. The two side wood is thicker and longer than the upper wood. The length of the side wood measures an average of 82 inches with width of about 3 by 1½ inches while the length of the upper wood is an average of about 52 inches with width of about 2 by 1½ inches. The upper and lower part of the side

poles is pierced to enable the side pole penetrate to form rectangular frame. The frame is then laid against the wall for support.

Figure 20:



A Rectangular Structure of Vertical Broad Loom in the University of Benin Textile Studio

Photograph: Bernadette Ifuemi Oluyole, 2024

Other materials and tools used include the following:

Beam: These are set of smooth surface of long wood gotten from raffia stem. They are used to hold the warp yarn and it on them that weaving is carried out.

Figure 21:



Set of Beams

Photograph: Bernadette Ifuemi Oluyole, 2024

Shed Sticks: They are set of short sticks usually within the length of the distance between each side pole of the loom. They are used to separate the warp yarn and they also work with the heddle to create opening for the shuttle and beater during the weaving process. The shed sticks are made from the branches of the plant of the beam.

Figure 22:



Shed Sticks (Ahasi)

Photograph: Bernadette Ifuemi Oluyole, 2024

Shuttle: a device that carries the weft yarn. Unlike the shuttle of the narrow band loom which is in form of a small canoe. The shuttle of the vertical broad loom is typically a short smooth slim stick.

Figure 23:



A Shuttle with the Weft Yarn. (Upechi)

Photograph: Bernadette Ifuemi Oluyole, 2024

Heddle: It helps to create the opening between the warp yarn where the weft yarn and beater passes through.

Figure 24:

Wire, Thread and Hollow Used Wood for Heddle (Ochaya and Owu)

Photograph: Bernadette Ifuemi Oluyole,

Beater or Sword (Okaha)

It is used to compress the weft yarn during weaving and also to create passage for the weft yarn to pass through.

Figure 25:

Beater or Sword (Okaha)

Photograph: Bernadette Ifuemi Oluyole, 2024

Rope (Odoro)

Rope (odoro) is used to tie up the poles at the sides of the loom and also used to hold the beams under tension. It is also used to determine the desire length of the fabric as well as to create support for the shed stick.

Figure 26

Rope (Odoro) used to tie up the Poles at the sides of the Loom

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 27



Rope (Odoro) used to tie up the poles of the loom to determine the desired length of the fabric and to create support for the shed stick.

Photograph: Bernadette Ifuemi Oluyole, 2025

Bobbins and Bobbin Handle

The bobbins are cone-like tool (Ochokaku) use to rell yarn for warping. They can be in a hard paper, plastic or metal. Bobbin handle is used along with the bobbin for warping. It is usually inserted inside the bobbin to create handle for the bobbin.

Figure 28a and 28b

Bobbins and it's Handle (Okaku)



Handle inside Already Whirl Bobbin (Ochokaku)

Photograph: Bernadette Ifuemi Oluyole, 2025**Ikekere**

Ikekere is a short slim stick with sharp edges. The edges are sharpen to enable the tip penetrate inside the woven fabric. It is usually gotten from any strong stick that is smooth. It is used to control the edges of the weaving to avoid it getting shrink and also to achieve an even width of the fabric.

Figure 29

Ikekere

Photograph: Sheidu Isa, 2025

Other materials used include the following

Stool (Erehu)

It is usually a small wooden stool used for sitting, however, anything comfortable for sitting can be used as an improvisation. It is used by the weaver to sit during the warping and weaving process.

Figure 30:



Stool (Erehu) used for Seating during Weaving Process

Photograph: Bernadette Ifuemi Oluyole, 2025

Scissors and Blade

Used for cutting and trimming unwanted yarns when finishing the weaving fabric.

Figure 31 and 32:



These cutting Materials are used for Cutting and Trimming unwanted Yarns from the Woven Fabric during Finishing.

Photograph: Bernadette Ifuemi Oluyole, 2025

3.4 Stages of Production

Stage 1: Creation of the desired Design

Stage 2. Whirling of the Yarns

Stage 3: Arrangement of the Loom

Stage 4: Warping Process

Stage 5: Creation of the Heddle

Stage 6: Filling of the Weft Yarn

Stage 7: Finishing

Stage 1: Creation of the Desired Design: Before the warping commences, different colours of yarns was made ready for whirling. The desired design determines the colour of warping on the loom.

Figure 33



Different Colours of Yarn (Owu)

Photograph: Bernadette Ifuemi Oluyole, 2025

Stage 2: Whirling the Yarns (Ochokaku): The number of yarns intended to be used were arranged and bobbins were made available for whirling. A hand-made constructed Okaku (ginning) was inserted inside the bobbin (okokoro) to enable the fast continuous whirling of yarn on the bobbin. Then the researcher held the handle of the okaku and began to whirl (Ochokaku). This process was done for each of the colour to be used.

Figure 34:



Whirling Yarns around the Bobbins (Ochokaku)

Photograph: Sheidu Isa, 2025

Figure 35



Already Whirl Yarns

Photograph: Bernadette Ifuemi Oluyole, 2025

Stage 3: Arrangement of the Loom

The desired length of the expecting fabric was measured and a pair of odoro (strong rope) was tied to that length. Each of the rope was then hung on the edges of both sides of the upper beam to hold the lower beam as shown in figure 27. Three shed sticks were inserted in the left rope in an over and under pattern to enable them stand on their own. It was then pulled in and pulled out a bit towards the inside of the rectangular frame of the loom.

Figure 36



Three shed sticks inserted in the left rope to enable the sticks stand on their own. It was then pulled out a bit towards the inside of the rectangular frame of the loom

Photograph: Bernadette Ifuemi Oluyole, 2025

Figure 37

Researcher Setting the Thread on Upechi to Start Weaving.

Photograph: Sheidu Isa, 2025

Stage 4: The Warping Process

The warp yarn (evashi) was tied round the lower beam and then dragged upward across the upper beam while the yarn is placed in an under and over pattern on the shed sticks thereby forming a crisscross around the shed sticks. The colours were interchanged at regular interval following a number of counts. The wrapping process continues until the desire width is achieved.

Figure 38:



Warping the Desired Colour on the Loom

Photograph: Sheidu Isa, 2025

Figure 39

The Finished and Desired Length of Warping

Photograph: Bernadette Ifuemi Oluyole, 2025**Stage 5: The Creation of the Heddle**

The heddle (aya) was then created using a single slim metal iron (**ochi-aya**) or bicycle spoke and a small hollow wooden device (tenkere). Sometime the hollow transparent part of a biro can be used as an improvisation for the creation of the single heddle. It is done by the twisting one strand of wrap yarn on the upper shed stick around the ochi-aya and tenkere and then taken back to the second strand. These processes

continue till the last strand is wrapped. This enables the creation of shed for the beater to pass through during the weaving process.

Figure 40:



Creating the Heddle

Photograph: Sheidu Isa, 2025

Figure 41



Already Created Heddle

Photo: Researcher, 2025

Stage 6: **Filling of the Weft Yarn**

Before the filling commences, the researcher loosens the lower beam and uses her hand to arrange the warp yarn so that they don't over-lap or tangle while weaving. The filling usually consists of three basic processes.

- i. **Shedding:** This involves separating the warp yarns using the heddle and shed stick by pulling it towards the weaver to create an opening known as “shed” to enable the shuttle and sword to pass through. The shedding process is carried out in two sequential processes.
- ii. The researcher uses her left hand to pull the heddle gradually towards her chest while she uses her right hand to push the beater through the shed already created by the pulling process.

Figure 42:



Pulling of the Heddle to Create Shed

Photograph: Aminat Musa, 2025

- iii. The shed sticks were used to alternate the opening and separate the opening of the warp yarn to form a cross. This is done by using both hands to bring the shed stick

towards the heddle. This automatically drags the tip of the heddle backwards and alternate the opening.

Figure 43



Pulling Down the Shed Stick to Create an Opening

Photograph: Aminat Musa, 2025

Figure 44:



The Sword Being Inserted into the Opening Created by the Shed Stick

Photograph: Aminat Musa, 2025

- iv. **Picking and Filling:** This is the second stage of the filling process. It is the passing of the weft yarn across the warp threads using the shuttle and through the shed. The shuttle carrying the weft yarn is passed through the opening created by the sword or the beater at each opening of the shed while the tip of the fingers are used to control the edge to avoid the weft yarn from pulling too tight or too loose thereby causing shrinkage.

Figure 45



Laying of the Weft Yarn

Photograph: Shehu Sadiq, 2025

Figure 46



Controlling the Weft Yarn from Pulling Too Tight

Photograph: Sheidu Isa, 2025

- iv. **Beating Up:** This involves pushing of each layer of the weft yarn back into the fell using the sword or beater. The sword is held at both end and beaten down while applying pressure.

Figure 47



Beating of the Weft Yarn

Photo: Sheidu Isa, 2025

The above weaving process is followed in the correct sequence without interfering with one another. The full sequence is repeated continuously until the entire warp yarn is filled to form a cloth.

While this sequential order is being carried out, the '*uta*' is used to control the edges of the weave to maintain an even width of the fabric and also to create a straight and even selvage.

Figure 48



Ikekere Being Used Inserted to Control the Edges

Photo: Mamunat Adeiza, 2025

Stage 7: Finishing

The rope used to release tension of the lower beam was loosening and lower beam was pulled out. The woven fabric was then removed from the upper beam and scissors was used to trim excess yarns hanging around the fabric. The fabric was then cut and sewn into various end uses.

Figure 49



Researcher cutting out the Ita-Inochi from the Oguntoro

Photograph: Maimuna Abdulkareem, 2025

Figure 50

The Finished Ita-Inochi Fabric

Photo: Researcher, 2025

3.4 The Modified Fabric

The modified samples for this study were different weave structures, and colour. However, same weaving processes were employed not with a difference in either warps colour alignments or both the warp and weft colour alignments.

3.5 The Production of Modified Ebira Hand Woven Fabrics

For this study, different samples were produced. The modifications were carried out thus: The weaving processes and tools for the production of the different modified samples were the same, only the yarns were different in count, colour, types but not in quality, weight and size. The modified samples are different from the traditional ones in the following ways:

- 3.5.1 They are lighter in weight and have soft touch:** This was achieved by reducing the tension of the beater (Okaha) and secondly by increasing the spaces between the filling yarns (weft yarns) during the weaving process. Also, where starch was used on the yarn (old style) the researcher decided to weave the fabric without starch application. The old yarn count of Ebira Ita-Inochi fabrics is 8 counts while the modified yarn is 2 count. This indicates that there is the difference of 6 counts. This made the modified samples softer in hand than the traditional.
- 3.5.2 The Modified Hand Woven Fabrics are also better in Luster:** Apparently, industrially produced yarns have better luster than those produced manually by spinning cotton buds. Industrially produced yarns were used for weaving some samples of the modified Ebira hand woven fabrics. It is pertinent to note here that, the samples are similar in colour to the traditional ones. Culturally, Ebira people have similar colours with the Akoko-Edo, Yoruba and Tiv traditional woven fabrics. The colours used include, black (Oji), white (Ovu) and brown (Ododo).

In the course of producing these woven samples, the under listed specifications were followed. The warp yarns count was 901 strands (each strand consist of 2 strands) that is, 901×2 is equal to 1,802 yarn counts. The heddle carries 4 strands (without

Figures: 62, 63 and 64



Sample III

Weft Colour Order

	YE	BK	BL	YE	BK	BL	YE	BK	BL	YE	BK	BL	YE	BK	BL	YE	BK	BL	YE	BK	BL	YE	BK	BL
Warp Ends	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36



After the modification of the woven structure, the samples were weighed and comparison done as tabulated below:

Figures 65, 66 and 67

Sample I

	Sample Fabric	Modified Fabric
Yarn Type	Cotton	Cotton
Dimension	“21 x 64”	“21 x 64”
Weight	348 grams	299 grams

Weight differences = $348 - 299 = 49$ grams.

Sample II

	Sample Fabric	Modified Fabric
Yarn Type	Cotton	Cotton
Dimension	“10 x 10”	“10 x 10”
Weight	31 grams	21 grams

Weight differences = $31 - 21 = 10$ grams

Sample III

	Sample Fabric	Modified Fabric
Yarn Type	Cotton	Cotton
Dimension	“63 x 22”	“63 x 22”
Weight	346 grams	313 grams

Weight differences = $346 - 313 = 33$ grams

Analysis

The samples presented above show that there is a significant weight reduction from the modified fabrics. The old woven fabric was made with pure cotton and the laying of the warp was closer and starched. However, the new woven fabric was also

made with the same quality of cotton without starching the cotton. After weaving the modified fabric, it was discovered that there is a significant weight reduction on the fabric because the warp count was reduced and the amount of force used in beating the weft was also reduced. These however reduce the density of the woven fabric.

To ascertain the effect of the reducing the beat-up force and none use of starch on the fabrics, the researcher washed the fabrics and discovered that the modified fabrics still retained its colours and weights while the old fabrics after washing, lost its colours and beauty, perhaps because of the starch applied to the cotton.

CHAPTER FOUR

VISUAL ANALYSIS AND DISCUSSION

4.1 Descriptive Analysis of the Finished Works

This chapter deals with how the modified woven samples on the broad vertical loom were transformed into various end products. Apart from using this cloth for fashion and day to day wears, it is also being modernized into different household uses. Examples are hand bags, shoes, travelling bags, table covers, school bags, different types of men caps, ladies hats, headgears , wrist-bands, waist bets. It can also serve as souvenir during weddings. or used for interior decorations like chair cover, lampshades and so on.

4.2 End Uses in Contemporary Fashion Wear

The modified hand woven fabric was used to produce contemporary fashion wear for both male and female as shown in figure 50.

Figure 50



Love Birds

Photo: Researcher, 2025

Analysis

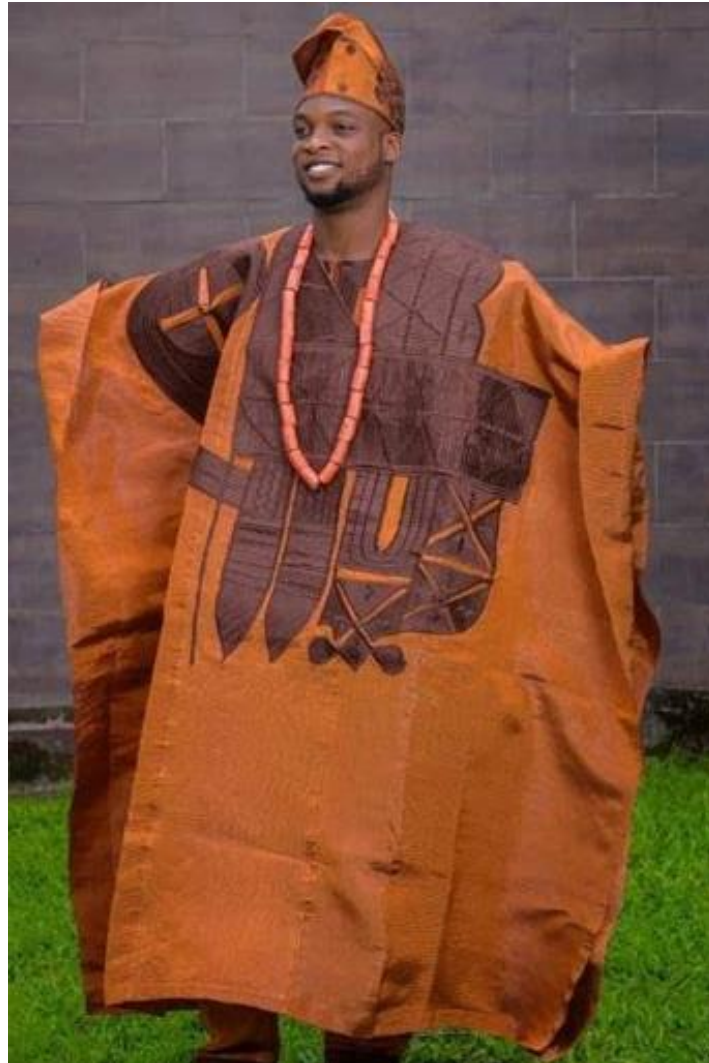
The cloth titled Love Birds shows how cloth acts as a medium of social meaning. The striped design with matching accessories appears austere. The title evokes themes of cooperation, love, and harmony, central to Ebira textile culture. Like much of West African cloth, its meaning lies in signs-pattern, colour, and form-made visible in cycles of public display and ceremony. Stripes are central to Ebira textile culture, offering rhythm, legibility, and order when worn in public. Stripes thus function not merely as decoration

but as social tools that reinforce kinship, recognition, and continuity within the community.

Colour heightens meaning. Red conveys energy and ceremony, black maturity and formality, while white sharpens motifs for visibility. The integration of cloth with accessories like bags extends this colour logic, promoting cohesion, pride, and shared identity during group gatherings. Technically, the textile is woven cotton, valued for durability and drape, with possible embroidery to mark status and ceremonial use. Functionally, Love Birds symbolises couple-hood and solidarity. Birds, in Ebira and wider West African symbolism, represent fidelity, harmony, and fertility. The juxtaposition of male and female outfits highlights gender roles while reinforcing collective pride.

Aesthetically, Love Birds sits between tradition and modernity. Stripes and colours recall heritage, while coordinated styles show adaptation to contemporary tastes. Thus, the cloth sustains a symbolic vocabulary of identity and belonging while responding to new contexts.

Love Birds is wearable history. Its stripes, bold colours, and harmony of design make it both a marker of cultural pride and a living expression of partnership, community, and continuity within Ebira tradition.

Figure 51**Title:** Ovarosee (Bride-Groom)**Photo:** Researcher, 2025**Analysis**

Ovarosee (bridegroom) is two different shades of brown. The brown colour signifies responsibility, love and harmony. The colour combination largely depends on individual choice that can represent the community's everyday activities, religions belief and social hierarchy that is made visible in cycles of public display and ceremony. The integration of the fabric with embroidery, promotes cohesion, and pride during

ceremonies. Oyarosee represents the joy that goes with marriage, fertility, fidelity, harmony, and love. The colours and harmony of design make it both a marker of cultural pride and a living expression of partnership, community, and continuity within Ebira tradition. Aesthetically, Oyarosee goes beyond a garment; it is an expression of cultural identity and coordinated style shows the sustainability of the traditional tastes.

Figure 52



Ododo (Flower) Ita-Inochi Used as a Cooperate Wear

Photo: Researcher, 2025

Analysis

The above design titled Ododo (flower) is a traditional hand woven fabric among the Ebira of Kogi State. The sample here is a blend of vibrant and soft colours, mainly red, pink, green, and lilac in vertical stripes. The design has been tailored into a skirt suit with a handbag from the same fabric. This finishes the ensemble and makes it appear as a whole, showing how traditional textiles are being used in modern fashion. The colours of the Ododo cloth are very important. The most dominant are red and pink, and they generally symbolize energy, love, and life. These colors are bright and, in Ebira culture, are linked to beauty and celebrations. The green stripes offer a balancing influence of peace, as well as growth and fertility. The colors blend together and offer meaning beyond decoration.

The striped pattern is also significant. The repeating vertical lines give rhythm and organization to the pattern, making it graceful and visually appealing. Weaving for the Ebira is not only a craft but also a way of displaying skill, patience, and creativity. By taking this traditional cloth and turning it into a modern fitted jacket, skirt, and handbag, the design shows that culture can be made relevant and alive while being reinterpreted based on present fashion.

The name Ododo, which means flower, illustrates the symbolic significance of the cloth. Just as a flower opens, so too does the design represent beauty, elegance, and pride for the wearer. Ododo wearing for Ebira women is a sign of strength and grace, and it identifies them with their heritage. The cloth goes beyond a garment; it is an identity and expression of cultural identity. Finally, the Ododo textile design is not just beautiful but also symbolic. Its designs, colours, and craftsmanship are a mirror of the Ebira tradition

and values. By incorporating tradition with modern tailoring, it is a reminder that culture can be preserved and yet evolves with the times.

Figure 53



Ukata (Strength) made with Ita-Inochi

Photo: Researcher, 2025

Analysis

Figure 53 titled 'Ukata' is a three colours woven fabric represent strength. The major colours which are red and black signifie the strength of a young man. In any organisation or a community where the presence of the youths is not represented are

always lagging behind. The white stripes indicate there is love and purity in most of their intensions.

Figure 54



Title: I'm Insured (Oven Mitt) made with Ita-Inochi

Photo: Researcher, 2025

Analysis

I'm insured is an oven mitt made with the Ebira woven fabric with yellow and black colours. The black signifies danger of burns that are synonymous with the kitchen while the yellow gives the assurance of safety. Yellow is a lively colour that is associated with friendliness and the confidence that comes in times of trouble.

Figure 55

Ekehi-apu (Money Bag) made with Ita-Inochi

Photo: Researcher, 2025**Analysis**

The design shown is a handbag named by the Ebira people as Ekehi-apu, meaning money bag. The bag is constructed with durable woven material, and the one shown is dark purple, green, and has a golden-yellow front pocket. The handles are of green material that is wide and durable, allowing the bag to be used. The colours used give the bag a lovely appeal and cultural importance. Purple is the colour of pride, respect, and dignity. In Ebira culture, these dark colours are likely to represent status and honour. The green straps represent growth, prosperity, and renewal, qualities recognizable with the metaphor of a money bag a repository of wealth and blessings. The golden-yellow frontal pocket is vibrantly conspicuous, a representation of fortune, energy, and success. These

colours, collectively, work in harmony to symbolize the desire for stability and abundance.

The bag itself is also symbolic in its design. It is spacious, long-lasting, and practical, reflecting the importance of utility in Ebira craftsmanship. The bag illustrates how traditional patterns and weaving methods are reinterpreted into modern-day objects of practical use. Ekehi-apu is therefore not just a fashion item but also a means of economic empowerment, as it propagates the culture of wealth creation and self-reliance among the populace.

Culturally, the money bag goes beyond the transportation of items-it is a metaphor for responsibility and aspiration. In Ebira culture, it can symbolize readiness to gather, protect, and wisely use resources. It also indicates the dignity and pride of work and pride in creating useful objects that contain cultural identity. The Ekehi-apu cloth pattern is a piece of composition of beauty, strength, and symbolism. It expresses prosperity, growth, and dignity in its colours and composition. At the same time, it shows how Ebira craftsmanship itself continues to evolve, creating pieces that connect tradition and modern life.

Figure 56



The Researcher displaying Ortehiza made with Ita-Inochi

Photo: Researcher, 2025

Analysis

Ortehiza is a hand woven fabric with striking, alternating bands of dark indigo (or purple) and white. The textile is simple in form but highly symbolic, with firm vertical stripes creating an energetic visual pattern. The stripes not only contribute to the shawl's beauty but also bestow upon it an air of elegance and dignity. In the borders, the shawl has fringes that are left untouched, adding texture and finishing to the pattern. Previously, the shawl was woven on a loom by Ebira women, whose technical skill in textile manufacturing is of high quality. Use of indigo or darker shades indicates a long tradition of dyeing among the group, and the active contrast with white indicates purity, balance, and cultural pride. The rectangular shape of the shawl makes it simple to drape across the shoulder, making it a publicly worn garment for ceremonies, celebrations, and outings.

The Ortehiza is not merely a shawl; it is a cultural symbol of identity, status, and beauty. Being worn when venturing outdoors, taking part in festivals, and visiting public gatherings makes the Ortehiza a textile of visibility, a symbol of Ebira pride. The alternating stripes can be read as a metaphor of order and harmony, illustrating how individuals connect with one another through the rhythm of communal living. The deep indigo color is an icon of strength, toughness, and maturity, and the white stripes represent peace and moral uprightness. Ortehiza is not worn for purposes of adornment alone but to sustain a tradition that binds the present generation with their ancestors. It is a garment of cultural memory and continuity, reminding both the wearer and society of their roots.

The Ortehiza is an important burden in the hierarchical structure of Ebira society. It is not divided equally among everyone. Elders, titled men and women, and high-

ranking members of society often wear more authoritative or higher-quality versions of the shawl, sometimes in finer yarns or in larger sizes. To these people, the shawl is a sign of respect, dignity, and authority. In ordinary members of society, there is the shawl in a reduced size, but no less powerful, representing belonging and partaking in communal life. On festival days, wedding ceremonies, and other life transition rites, social status is visibly represented by the Ortehiza. A chief or elder who wears the shawl in public, for example, represents leadership status, while for a youngster, it may represent growth, respect, and readiness to take part in communal obligations. Thus, the Ortehiza is not only an article of clothing but also a social marker that produces concrete lines of hierarchy, honour, and respect in Ebira society.

Figure 57



Oyiseoyi (Mother's Love) made with Ita-Inochi

Photo: Researcher, 2025

Analysis

The above fabrics titled “Oyiseoyi” is a strip used by mothers to enforce another fabric in backing their babies in Ebira land to prevent unexpected accident and it is also compliments the mother’s dressing. The white colour used indicate love, and the purity of bond between mother and child. It also indicates the resilient and gentle nurturing of the

child. White is a special colour in Ebira land as it is mostly used by the kings and nobles. This tells how special babies are to their mothers.

Figure 58



Maiden decked with, Kpele, (Shaw, bag and shoes) for a wedding ceremony
(made with Ita-Inochi)

Photo: Researcher, 2025

Figure 59

Set of Female Purse made with Ita-Inochi

Photo: Researcher, 2025

Figure 60

A Traveling Bag made with Ita-Inochi

Photo: Researcher, 2025

Figure 61

Lady's Fashion Bag made with Ita-Inochi

Photo: Researcher, 2025**Figure 62**

Lady's Fashion Bag made with Ita-Inochi

Photo: Researcher, 2025

Figure 63

Lady's Fashion Slippers made with Ita-Inochi

Photo: Researcher, 2025

Figure 64

Lady's Fashion Easy Wear made with Ita-Inochi

Photo: Researcher, 2025

Figure 65

Lady's Fashion Easy Wear made with Ita-Inochi

Photo: Researcher, 2025

Figure 66

Chair made with Ita-Inochi

Photo: Researcher, 2025

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATION

This chapter deals with the summary, findings, conclusion, and contributions to knowledge, recommendations, and suggestions for further research.

5.1 Summary

The research has dealt with the traditional woven fabric of Ebira people of Kogi State and it focused on the type of loom and its accessories used for the production of their traditional fabric. It also gave the step by step procedures involved in the production process of the woven fabric as well as insight into the elements of the fabrics. The weaving of the fabric was carried out on the vertical broad loom, using synthetic and yarns of various colours. The modified fabrics (weight reduction) were used to produce different end uses such as corporate wears for male and female, bags, throw pillow, foot wears, and chair head rest etc.

The study revealed that traditional hand woven fabrics can be modified to achieve weight reduction and a softer texture of fabric. It can also be incorporated with other factory made fabrics for day-to-day fashion wear. With the modification of the fabric (Ita-Inochi) embedded into contemporary fashion trend, there is a strong possibility of reviving the fast dwindling cultural identity of the Ebira weaving tradition.

Furthermore, the research revealed that the Ebira woven fabric that seems to have lost its cultural values could be revived through the incorporation of the fabric with the modern fashion to promote cultural value and identity among the upcoming generation.

5.2 Implication of Findings

After evaluating the study's findings, the following implications were drawn:

1. That the traditional equipment used in Ebira traditional woven fabrics were not well documented hence the lack of knowledge and interest in the Ebira woven fabrics;
2. The materials used in the traditional Ebira woven fabrics are pure cotton, same material used in the production of the old fabric. It was discovered that other materials such as starch that was not used reduced the weight of the fabrics.
3. The same techniques used in the old Ebira traditional weaving was equally used in the modified fabric. However, the yarn counts were less. Hence, the reduction in weight of the fabrics.
4. Modern technology and materials do not really affect the production of the traditional Ebira weaving practices because the loom used in weaving the fabric was made from locally sourced materials, which is bamboo sticks and some other woods found around the neighborhood.
5. The reduction of weight of the Ebira woven fabric was made possible due to the drastic reduction of the yarn counts. This is attributed to the fact that the old weavers thought the more the yarn counts, the faster the weaving. However, the researcher discovered that the yarn counts can still be less and fast in weaving. To say that weaving takes time and its demand endurance and patience, cannot be overemphasized. Therefore, if the weavers and those intending to weave, have the foreknowledge and tips of weaving, they wouldnot be reluctant to weave, buy or wear the traditional woven fabrics.

More so, engaging in traditional weaving using the vertical broad loom is interesting, creative and its outcome is innovative. The act of weaving can be vocational and can also be a form of career for the teeming youths. Also, hand woven fabric can be used for contemporary use instead of limiting it to only traditional wears. The modified hand woven fabrics are lighter in weight and softer in texture. Thus, it gives fashion designers the opportunity to use the Ebira traditional hand woven fabrics to embellish other fabrics for uniqueness, creativity and beautification.

5.3 Conclusion

In conclusion, ita-inochi's deserve special attention both at the national and international level so as to generate income for the Ebira people of Kogi State; making it a must have for the upcoming generation who are carried away by foreign materials, living the Ita-inochi fabric go into extinction.

5.4 Contribution to Knowledge

This research contributed to knowledge in the following ways:

1. The traditional equipment can be used to weave Ebira woven fabrics with reduced weight;
2. The traditional weaving equipment and methods are still applicable in weaving the Ebira traditional woven fabrics
3. That pure wool is still very much in use in the weaving of the Ebira traditional woven fabrics
4. That reduction of weight of the Ebira woven fabric is possible by reducing the weft count and reducing force applied when weaving

5.5 Recommendations

With the results from this research, it is recommended that textile designers, fashion designers, textile teachers, and art historians create awareness about these Ebira traditional hand woven fabrics. It is also recommended that since Nigeria is currently experiencing a rising trend of unemployment, the Ebira traditional hand woven fabric should be explored to curb the increasing rate of unemployment. In achieving this therefore, government can seek the local producers to empower less privileged, the youths, and those who may be willing to dive into mass production of these Ita-Inochi for exportation.

More so, there is a dire need to create sustainable demand for the Ita-Inochi. Therefore, it is recommended that the local people of the Ebira land should revive the use of Ita-Inochi as commemorative fabrics for their local ceremonies, religious and political functions, social and other relevant ceremonies for the admiration of the national and international communities.

Finally, the government should do all it could to curtail the influx of cheap assorted foreign fabrics into the Nigerian markets so as to protect the indigenous fabrics. However, there is still no hundred percent assentation of its durability due to weather, choice of yarn, pest, and washing methods. There are still other areas that could require further research such as durability of traditional hand woven fabric.

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