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A Study: Material, Construction, and Craft Techniques Used in Kolhapuri Chappal Manufacturing

Neelam Patel
Faculty, Fashion Design Department, Footwear Design & Development Institute

Abstract: ***Since the Early Vedic Period, Indian footwear in particular has been known to be home to a variety of craft styles. The origins of everything we use today are likely thousands of years old; even digital communication technology has developed over the past 100 years. The purpose of the study is to analyze the materials, construction techniques, and craft methods applied to the production of Kolhapuri chappal. The use of vegetable leather in order to enhance quality of Kolhapuri Chappal is the main focus of the study. In addition, it discusses the methods used by expert craftspeople for cutting, shaping, hand-stitching, and finishing leather. The elaborate braiding, weaving, and decorative details that characterize Kolhapuri chappals' aesthetic identity are given particular attention. India's culture, society, and religion have always recognized the value of feet and footwear. Kolhapur, a town in Maharashtra, is the origin of the Kolhapuri chappals. This craft style is a labor-intensive production method that makes use of antiquated tools and machinery. Today's technology has developed over the past 100 years.***
Keywords: Kolhapur Chappal , Handmade, Craftsmanship, Bag tanning.

I. INTRODUCTION



Fig.1 Mahalaxmi temple

There are several references to footwear in Indian literature. The religious and cultural significance of feet in Indian tradition is unique. The feet are considered to be sacred and therefore objects of veneration. The indigenous and etymological references to feet and ankle ornaments have been traced from the period of RIGVEDA {4000BC}. Almost paradoxically, the sentiment of humility and submissiveness are rooted in the idea that feet are the humblest, impure part of the body and therefore may command respect by those who surrender their ego to venerable.

Nonetheless, over the course of millennials, a rich vibrant variety of footwear was created in India, and this included sandals, barouches, mules, slippers, shoes, boots, socks, and stockings. These were made from a number of raw materials such as cow, buffalo or goat hide, silk, wool or cotton fiber and, various grasses. The very typical Indian toe–knob sandals, known as paduka, were made of such materials as wood, ivory, brass, silver, semi-precious stone such as jade, or a combination of these. From ancient times, wearing leather footwear was taboo in India because Hindus consider the cow as the most sacred animal resulting in the usage of sandals mostly made out of the wood, plant, and metals.

Royal support was extended to leather craftsmanship during the Mughal era. Hand painting and detailed embroidery were used to produce luxurious leather goods including book covers, horse saddles, and embroidered bags. Certain regional crafts still exhibit the blending of Indian culture and Persian creativity brought about by the Mughal influence.

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India's leather industry changed from a cottage business to a more industrialized one during British British rule. For military boots, belts, and saddlery, the British mostly relied on Indian leather. As machine-made goods took center stage, handmade craftsmanship declined as a result of the rising demand driving manufacturing.

However, some areas continued to be recognized as centers for handmade leather items. Such as, Kanpur earned the nickname "Leather City of the World."

Tanneries became concentrated in Chennai (formerly Madras).

Maharashtra's Kolhapur gained notoriety for its Kolhapuri chappals, which are still adored today.

After India's independence, there was a resurgence of interest in preserving and advancing traditional crafts, such as leather work. In order to help small-scale leather artisans compete with mass production, the government and non-governmental organizations started promoting artisanal cooperatives.

After India's independence, there was a resurgence of interest in preserving and advancing traditional crafts, such as leather work. In order to help small-scale leather artisans compete with mass production, the government and non-governmental organizations started promoting artisanal cooperatives. Kolhapuri chappals are handmade leather shoes that have been tanned using vegetable dyes since the 13th century in the Maharashtra town of Kolhapur. Kolhapuri chappals have its roots in the 12th century, when the cobbler community was encouraged to produce more Kolhapuri chappals by King Bijjala and his Prime Minister, Basavanna. Previously, they were called Kapashi, Paytaan, Kachkadi, Bakkalnali, and Pukari, according to the villages where they were created. One intriguing aspect about the Kolhapuri is that it became a highly popular shoe in the US with the start of the Hippie movement.

II. AIM OF THE STUDY

Examining and recording the traditional materials, building processes, and craft skills utilized in the production of Kolhapuri Chappal is the goal of this study. These chappals, which originated in Kolhapur, are a significant aspect of India's artisanal legacy. The goal of the study is to comprehend how handmade techniques and natural leather contribute to the footwear's practicality, longevity, and cultural importance. Additionally, it aims to draw attention to the abilities of regional craftspeople and the significance of maintaining traditional workmanship in the contemporary fashion and footwear sectors.

III. OBJECTIVES

1) To study the materials used in Kolhapuri chappal manufacturing
2) To analyze the construction process and structural design
3) To document traditional craft techniques used by artisans

IV. REVIEW OF LITERATURE

The relevance of Kolhapuri Chappal in India's traditional footwear industry has been highlighted by a number of studies and publications that have examined its history, craftsmanship, and cultural significance. Kolhapuri chappals have been manufactured for centuries using natural leather and handmade processes in Kolhapur and the neighboring areas of Maharashtra and Karnataka, according to studies on Indian handicrafts.

These chappals, which are made by hand from vegetable-tanned leather, are renowned for their strength, elaborate patterns, and regional differences (e.g., Paytaan, Kapashi).

Their utilization of local resources, eco-friendliness, and zero-nail construction make them unique.

Thousands of artisans, particularly from underprivileged and disadvantaged rural areas in Maharashtra and Karnataka, are employed in this profession.

Upper leather decorating is a gender-inclusive livelihood activity since women frequently engage in it.

Kolhapuri chappals serve as a form of economic diversification for rural households, maintain traditional knowledge systems, and boost village-level economies.

The trade boosts rural resilience, supports microenterprises, and promotes local entrepreneurship.

Additionally, because Kolhapuri chappals rely on natural materials and handmade production rather than mass manufacturing, they are recognized in literature on sustainable fashion as an example of eco-friendly and slow fashion techniques. However, a number of experts highlight issues like the need for more market support and design innovation, the competition from machine-made footwear, and the decline in artisan participation. Overall, the material that is now available shows that Kolhapuri chappals are a valuable blend of traditional craftsmanship, cultural legacy, and ecological production methods, making them a crucial topic for additional study.

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V. METHODOLOGY

This study uses a qualitative and descriptive approach to investigate the materials, construction, and craft processes utilized in the production of Kolhapuri Chappal, which is traditionally made in Kolhapur and adjacent areas. The study relies on both primary and secondary data collection methods.

Primary data is gathered through observations, interviews with artisans, and documentation of the manufacturing process in order to better understand the ancient techniques used to make Kolhapuri chappal. Photographs and notes are utilized to document the step-by-step procedure, tools, and materials used.

Secondary data is acquired from books, research journals, government publications, and trustworthy web sources about traditional leather crafts and Indian footwear history.



Fig.2 Black soil

VI. RAW MATERIAL AND TOOLS

Depending on the chappal's production order, bag-tanned leather or madras leather are the primary raw materials utilized in their production. In order to tan the leather, bag tanning also needs specific resources. These consist of lime, water, sisal fiber, acacia bark (babul), and myrobalan (hirda). Additionally, salt is needed at the start of the process.



Fig.3 Myrobalan (hirda), , Acacia bark (babul

Artisans also use natural tanning agents such as babul and hirda, which are commonly obtained from local shops at a cost of about ₹100–₹150 per kilogram. These natural materials help improve the tanning quality and durability of the leather.

After the tanning process is completed, the making of Kolhapuri Chappal requires several additional materials along with the leather. One important material used by artisans is black soil, which acts as a natural adhesive to stick the leather soles together and strengthen the structure of the chappal. Sometimes milk solution is also used to soften and condition the leather depending on its quality.

In certain traditional designs, a small seed known as binchu is inserted inside the sole to produce a distinctive sound while walking, although this feature is optional and not used in all styles. In modern production, artisans may also add decorative materials such as rivets and plastic threads to enhance the visual appeal of the footwear. The main raw material, animal hide, is usually purchased by factory owners at a cost of around ₹1000–₹1200 per hide, depending on its quality. Each hide generally weighs about 8–10 kilograms, and several pairs of chappals can be produced from one hide.

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Fig-4 Binchu

A variety of traditional tools are used in the manufacturing of Kolhapuri Chappal, each serving a specific purpose in cutting, shaping, decorating, and assembling the leather.



Fig.5 Tools

- Rapi – Moon-shaped knife used for cutting and finishing leather.
- Grinder – Modern tool used for smoother finishing of leather chappals.
- Fali – Wooden plank used as a base while cutting and stitching leather.
- Palakna – Black stone used to sharpen the rapi.
- Kachpate – Tool used to create dotted line impressions on straps.
- Polka dye – Used to make circular impressions or cut round leather pieces.
- Koyali paan dye – Used to cut leather in a betel-leaf shape for decoration.
- Compass – Used to mark stitch lines and design patterns on the sole.
- Bhingri – Tool used to cut small circular decorative leather pieces.
- Kata ari – Used for making impressions and stitching the soles.
- Mani poker – Used to cut small circular pieces for decoration.
- Number chaap – Used to stamp the size number on the chappal.
- Hasti – Tool used to beat and soften the leather.
- Sadachi aari – Used to attach decorative leather flowers to the chappal.
- Markod – Used to mark and cut the toe strap area and adjust fittings.
- Iron stand – Used as a base to shape leather and create fine braided patterns.

VII. PROCESS

Bag tanning also known as vegetable tanning is the process of treating skins of animals to produce leather, which is more durable and less susceptible to decomposition. Tanning leather involves a process which permanently alters the protein structure of the animal skin. It is the only form of tanning that is able to give leather unique characteristics, retaining the natural flaws and markings. It is also the most environmental-friendly tanning process.

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Fig.6 Leather in slaughterhouse

Bag Tanning Process Bag tanning also known as vegetable tanning is the process of treating skins of animals to produce leather, which is more durable and less susceptible to decomposition. Tanning leather involves a process which permanently alters the protein structure of the animal skin. It is the only form of tanning that is able to give leather unique characteristics, retaining the natural flaws and markings. It is also the most environmental-friendly tanning process. Raw leather from slaughterhouse is kept immersed in saltwater vats for a couple of days at the starts.

The unprocessed leather is stitched using herbal ropes into rough gunny bags. The bags are filled with the solution and left for a fortnight to allow tanning once done, the other side is also tanned similarly for uniform colouring.



Fig.7 Shaving the hides



Fig.8 Soaked hides



Fig.9 Shaving the hides



Fig.10 Shaving the hides

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1) Softening the Leather – First, water is sprinkled on the leather and it is left for about 24 hours so that it becomes soft. After that, the leather is beaten to flatten it and make it easier to work with.
2) Marking Pattern and Cutting Leather – A worker draws the sole pattern on the leather and cuts it using a half-moon knife called Rapi. The upper sole is designed with small extensions called "ears", where the straps will later be attached. The bottom sole is then cut and beaten to make it softer. To give the sole a smooth surface, thin layers of leather are peeled off.




Fig.6 Leather in slaughterhouse Fig.6 Leather in slaughterhouse

3) Joining the Sole – Another worker spreads muddy clay (black soil) on the sole to attach the top and bottom layers. The two layers are then beaten together using a tool called Hasti (country hammer). The clay acts as a temporary adhesive. After this, the heel is attached by inserting small pieces of leather between the bottom sole and hard leather layers to strengthen the structure.
4) Stitching – The stitching process begins using an awl, a hook-shaped tool that makes small cuts (about 2 mm) through the sole and heel. The awl is dipped in oily grease before each cut to make the process smoother. The stitching thread is made from thin goat skin, which is strong and durable. The cuts are made carefully so that the leather closes over them, preventing damage during long-term use.




Fig.69 stitching the sole Fig.69 stitching the sole

5) Decoration – Decorative patterns are created by stamping designs along the borders marked earlier with a compass. Motifs are made using different dyes, and women artisans often prepare veni (braided leather strips) and attach gonad as required. Depending on the design, rivets and zari may also be added for extra decoration.



Fig.69 stitching the sole



Fig.69 stitching the sole

6) Joining Parts – In this step, the upper straps are attached to the "ears" of the upper sole. Small cuts are made in the ears and sole so that the straps and the big toe strip can be inserted and fixed properly.

7) Finishing – In traditional Kolhapuri Chappal, the upper strap is stitched to the ear using leather strings, while in some modern Madras leather chappals plastic strings may be used. Extra cuts are made to attach the veni (chungli). Finally, the chappals are polished with wax polish or shoe polish and given a final finishing before being ready for use.

VIII. DESIGN & STRUCTURE ELEMENTS

1) Veni – A leather braid made from soft cow and goat leather, used for decoration and structure.
2) Anghotta – A leather toe strap made from cow or goat leather.
3) Star Punch – A tool used to create star-shaped cuts on the strap for decorative purposes.
4) Gonda – A flower-like decorative element made with silk thread and leather.
5) Car-to-Carpet – A very thin and flexible chappal design that can be folded easily.
6) Front Raised Pointed Sole – A distinctive feature of traditional Kolhapuri chappals where the front of the sole is slightly pointed and raised inward.
7) Leather Thread Stitching – Stitching done using strong leather strings instead of synthetic threads.
8) Adjustable Strap & Veni – The straps and veni can be adjusted to improve the fitting of the chappal.
9) Zari – Decorative metallic thread used for ornamentation.
10) Pan – A flower-shaped decoration made using dyes and leather, placed where the veni and strap join.
11) Binchu – A small seed placed inside the sole of certain Kolhapuri chappals to create a sound while walking.
12) Choti Chappal – A miniature 1-inch chappal made from leftover leather, traditionally used as a charm to protect from the evil eye.
13) Numbering – Each chappal is marked with a size number; sizes usually start from 00 for the largest and continue up to 06.

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IX. PRODUCT RANGE OF KOLHAPURI CHAPPALS



Fig.69 stitching the sole

1) Pudha Kapshi – This style has decorative punched designs on the strap made using dyes. It includes angotha veni, which connects the strap to the toe strap. The sole shape in this style is usually round.
2) Kurundwadi – In this style, the upper strap does not have a veni. Instead, the connecting strap itself is made in the form of a veni.
3) Khas Kolhapuri – A well-known traditional style where the front of the sole is pointed and slightly raised inward, giving it a distinctive appearance.
4) Meharban Kolhapuri – This design features three straps: a main middle strap, a toe strap (angotha), and another strap for the finger. The straps often have punched decorative designs.
5) Khas Kapshi – This style includes a veni attached to the strap that connects to the little finger for better grip. This special veni is known as chungli.
6) Kolhapuri Khadau – A heavier type of chappal, traditionally made for farmers. A unique feature is the binchu seeds placed in the sole, which produce a sound while walking.
7) Car-to-Carpet Kolhapuri – This is a modern version of the Kolhapuri chappal. It is extremely thin, almost like paper, and weighs around 100 grams. It is usually made from calf leather, which is beaten many times to make the leather sheet very thin. However, these chappals are mainly for fashion and have limited functionality for regular wear.
8) Madras Leather Chappals – These chappals are made from Madras machine-pressed leather, which is softer than the traditional bag-tanned leather used in authentic Kolhapuri chappals. They are available in various colors and are more modern in appearance.
9) Mini Kolhapuri Chappals – These are small decorative chappals (about 3 inches long) made from leftover leather pieces. Traditionally, they are believed to protect from the evil eye. Today, they are also sold as keychains or souvenirs.

X. CONCLUSION

The study of Kolhapuri Chappal highlights its rich heritage, skilled craftsmanship, and traditional knowledge involved in the production process. The research examined the materials, tools, construction methods, and decorative techniques used by artisans, showing how natural leather and handmade practices contribute to the durability and uniqueness of this footwear. It also explored both traditional and contemporary styles, demonstrating how the craft has evolved over time while still preserving its cultural

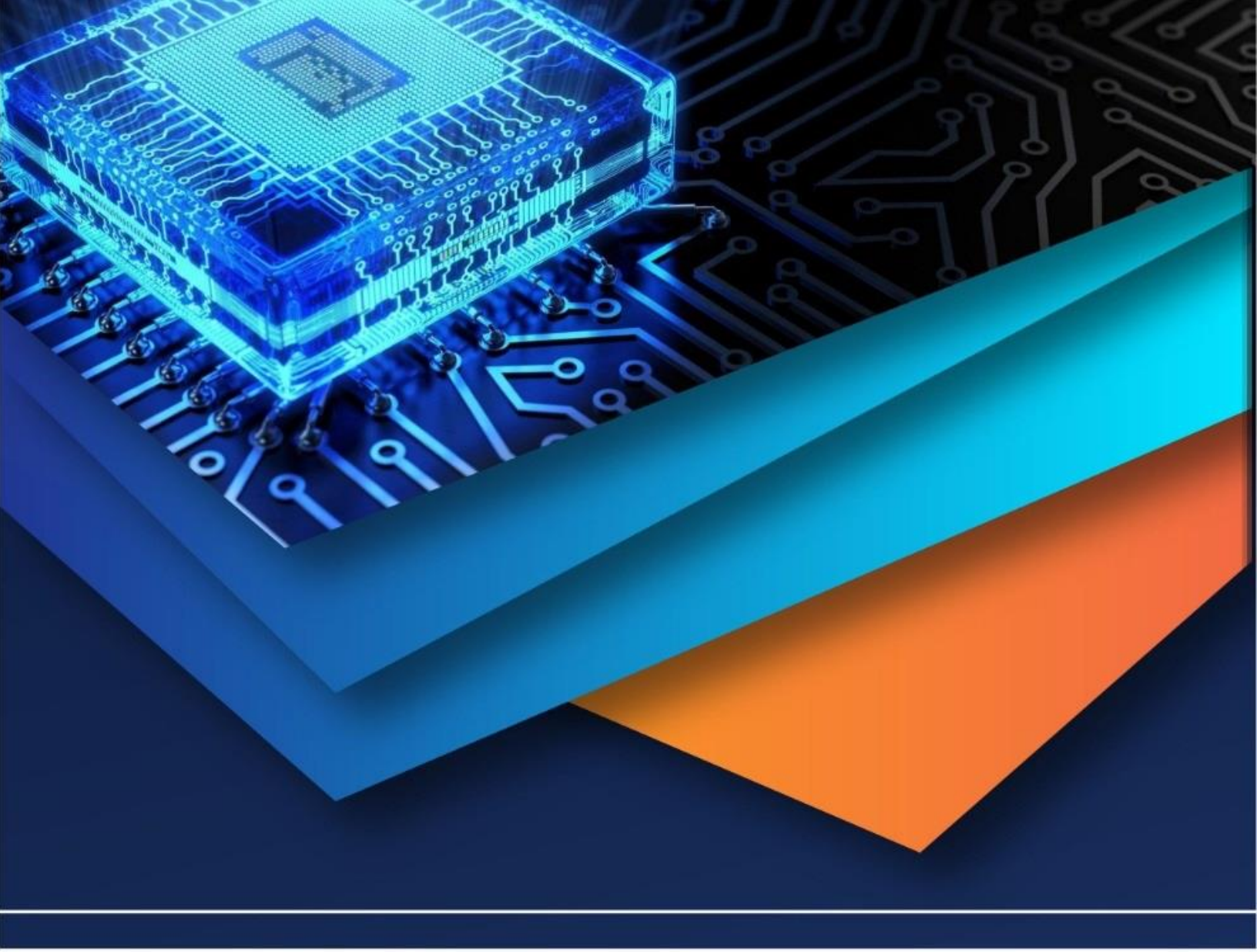
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identity. Despite modernization and increasing competition from machine-made footwear, Kolhapuri Chappal continues to represent an important part of India's artisanal heritage. Preserving these traditional craft techniques and supporting artisan communities is essential for sustaining this cultural legacy. With the growing demand for handmade and sustainable products, Kolhapuri chappals have strong potential to remain relevant in the modern fashion market while continuing to reflect traditional craftsmanship and cultural value.

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