Costumes and Textiles in Ajanta Paintings: A Historical and Cultural Analysis

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INTRODUCTION

Ajanta is one of India's greatest art treasures. The caves are a fine example of rock-cut architecture and house refined sculptures, but above all, paintings of unparalleled beauty. The murals of Ajanta are a treasure house of information about the period spanning from the 2nd century BCE to the 6th century CE. The textiles depicted in these paintings are astonishingly varied in dyes, yarn manipulation, and garment design.

In 1817, a group of British soldiers on a tiger hunt accidentally discovered these caves, which lay deserted in a horseshoe-shaped narrow valley near Aurangabad. This discovery revealed to the world the timeless art of Ajanta. The site, often regarded as a holy pilgrimage of Indian painting, resembles a vast amphitheater, where the expressions of love, patience, worship, sacrifice, and compassion are manifested in architecture, sculpture, and painting.

Location

The ancient *saṅghārāma* (Buddhist monastery) of Ajanta is located in the Aurangabad district of Maharashtra, India (latitude 20°33′09.94″N and longitude 75°42′00.69″E). Nearly 30 rock-cut edifices are present at the site.

Geography

The geographical setting of the monastery is distinctive. Nestled near a waterfall and recessed deep into a ravine, the caves are carved out of a monolithic stretch of scarp shaped like a horseshoe. This scarp is part of the Sahyādri range of the Western Ghats, now recognized by UNESCO as an eco-sensitive World Heritage zone.

Antiquity and Chronology

The Ajanta caves are divided into two phases:

- **First Phase (3rd–1st centuries BCE):** Five caves associated with the *Hīnayāna* tradition.
- **Second Phase (5th century CE):** About 26 caves dated between circa 462 CE and 480 CE, during the reign of Maharaja Hariṣeṇa (ca. 460–477 CE) of the Vākāṭaka dynasty.

During the earlier phase, the caves were within the dominion of the Sātavāhana dynasty, though their direct role in construction remains uncertain.

Classification of the Edifices

Traditionally, the *layāṇas* or *śailagṛhas* (rock-cut structures) of Ajanta have been classified as *Hīnayāna*, *Mahāyāna*, *caityagṛha* (prayer halls), and *vihāras* (monastic residences). However, recent scholarship suggests that these categories may be inadequate, and new frameworks of classification are being explored.

Objectives

The present study is conceptualized with the following objectives:

1. To explore and document the colors, motifs, fabrics, and production processes (bandhani, tie-dye, ikat, block printing, and patchwork) represented in Ajanta paintings.
2. To compare these motifs, colors, and fabrics with contemporary practices.
3. To analyze the depiction of textiles and fashion in the murals.
4. To reinterpret Ajanta motifs for application in modern bandhani and ikat designs.
5. To develop women's ethnic wear combining Ajanta motifs with contemporary fashion aesthetics.

Contextual Background

India is home to thousands of wall paintings dating from prehistoric times to the present. Among these, the murals of Ajanta, Ellora, and Bagh hold a place of global renown. Yet, many other mural traditions across the country remain lesser-known though equally significant (Agrawal & Pathak, 2001).

Murals differ from miniature paintings in scale and purpose. While miniatures are small, intricate, and decorative, murals are monumental works executed directly on cave or palace walls. The term *mural* derives from the Latin word *murus*(meaning "wall"). Such paintings reflect Indian spirituality, mythology, and socio-cultural life across ages.

Ajanta murals, therefore, are not merely works of art but visual texts that reveal information about textiles, ornaments, social customs, and the broader cultural ethos of their time.

Chronology of the Ajanta Caves

The Earliest Phase (Satavahana Period)

The earliest group of caves at Ajanta consists of Caves 9, 10, 12, 13, and 15A. The murals in these caves primarily depict stories from the **Jātakas**. Scholars, however, differ in dating their construction. According to Walter Spink, these caves were created between **100 BCE and 100 CE**, probably under the patronage of the **Sātavāhana dynasty** (230 BCE – c. 220 CE), which ruled the Deccan region. Other scholars, however, suggest that the earliest caves might date to the **Mauryan period** (300–100 BCE).

- **Caves 9 and 10** are *chaitya-gṛhas* (stupa-containing worship halls).
- **Caves 12, 13, and 15A** are *vihāras* (monastic residences).

These earliest caves reflect the **Hīnayāna** tradition of Buddhism. They lacked figurative sculpture and emphasized the **stupa** as the central object of worship.

After this initial activity, the site remained largely dormant for several centuries. However, the early caves continued to be in use, as recorded by the Chinese pilgrim **Faxian** around 400 CE, who noted the presence of Buddhist visitors and pilgrims.

The Later Phase (Vākāṭaka Period)

The second phase of construction began in the **5th century CE**, during the reign of **Maharaja Hariṣeṇa** (c. 460–477 CE) of the Vākāṭaka dynasty. Earlier scholars believed that the later caves were produced over several centuries (4th–7th CE). However, detailed studies by Walter M. Spink argue that most of the later caves were created in a **short span between 460 and 480 CE**.

This view—though initially debated—has now been accepted by most modern scholars (including Huntington and Harle), though the Archaeological Survey of India (ASI) still maintains the broader dating of **5th–6th centuries CE, continuing for two more centuries**.

The later caves are associated with the **Mahayana (Greater Vehicle) tradition** of Buddhism. They include:

- **Chaitya-gṛhas:** Caves 19, 26, and 29.

- **Vihāras:** The majority of the rest, including Caves 1–8, 11, 14–29 (some being extensions of earlier caves).

These later caves are more elaborate, richly ornamented, and include extensive mural paintings. Some of the earlier caves were also refurbished and repainted during this phase.

According to Spink, the dating of this second phase can be established with a high degree of precision, owing to the inscriptions, stylistic developments, and historical context. While debates continue, the **broad conclusion that the bulk of Ajanta's later caves belong to a concentrated period in the late 5th century** is now widely accepted.

Sites and Monasteries of Ajanta

Geological and Architectural Setting

The Ajanta Caves are carved into the basalt cliffs of the **Deccan plateau**, part of the Deccan Traps formed by successive volcanic eruptions at the end of the Cretaceous period. The rock layers are horizontally stratified but vary in quality, which often forced ancient artisans to adapt their carving methods. These natural inconsistencies also led to cracks and collapses over time, such as the lost portico of Cave 1.

Excavation typically began with a narrow tunnel at roof level, which was gradually expanded downward and outward. Several unfinished caves, including Vihara Caves 21–24 and the abandoned Cave 28, testify to this process. Sculptors and painters worked in close collaboration, with excavation, carving, and painting often carried out in parallel.

A grand gateway was carved at the apex of the gorge between Caves 15 and 16, decorated with elephants on either side and a protective **nāga** (serpent deity). The integration of sculpture and architecture at Ajanta finds parallels in other Indian cave sites such as **Ellora, Elephanta, Bagh, Badami, Aurangabad, and Shivleni Caves**, as well as earlier examples like the **Lomas Rishi Cave** of Bihar (3rd century BCE).

Monastic Vihāras

The majority of Ajanta caves are **vihāras**, or monastic residences. These are typically designed as large square halls with rows of monks' cells carved along the walls.

- The central space is defined by square pillars, creating an open hall for communal activities.

- Surrounding this are rectangular aisles and small monastic cells accessed through narrow doorways.
- At the rear, a shrine or sanctuary houses a large seated Buddha, often flanked by richly carved reliefs of deities and bodhisattvas.

This architectural change, where the shrine and Buddha image became central to the vihāra, reflects the transition from the earlier **Hīnayāna tradition**, which emphasized the stupa, to the **Mahāyāna tradition**, which gave prominence to the image of the Buddha.

Chaitya-Gṛhas

Another important architectural type at Ajanta is the **chaitya-gṛha** (prayer hall). These halls are narrower, rectangular spaces with high barrel-vaulted ceilings.

- A central **nave** is flanked by two side aisles, separated by colonnades of pillars.
- At the apse end stands a **stupa**, surrounded by a path for circumambulation (*pradakshina*).
- Many chaitya halls feature large carved windows above the entrances to admit natural light, as well as colonnaded porches or verandahs.

The earliest chaitya halls at Ajanta (Caves 9 and 10) date to the **2nd–1st century BCE**, while later examples (Caves 19 and 26) were excavated in the **5th century CE**. Their longitudinal plans and vaulted ceilings are strikingly similar to early Christian basilicas, though without cross transepts or chapels.

Individual Caves

- **Cave 1:** Located at the eastern end of the horseshoe-shaped scarp, Cave 1 is one of the last to be excavated (5th century CE). According to Spink, it was likely never fully consecrated for worship, as indicated by the absence of soot deposits from lamps and the untouched state of paintings. The cave emphasizes themes of **royalty**, reflecting the patronage of Emperor **Hariṣeṇa**. Many Jātaka stories depicted here feature the Buddha in his previous lives as a king.
- **Cave 2:** Adjacent to Cave 1, Cave 2 mirrors its layout but is better preserved. It is renowned for its **feminine focus**, with murals depicting court ladies, mothers, and children. One fresco vividly portrays a **school scene**, showing attentive pupils in the front and distracted students at the back—a remarkable glimpse into social life of the 5th century.

- **Cave 4:** One of the largest vihāras at Ajanta, Cave 4 features a vast square hall surrounded by monks' cells. Its rear shrine houses a grand image of the Buddha, framed by intricate carvings.
- **Cave 26:** A chaitya-gṛha from the later phase, Cave 26 features a monumental stupa and elaborate sculptural decoration, including depictions of the Mahāparinirvāṇa of the Buddha.

Caves 9 and 10: Chaitya-Gṛhas of the Early Phase

Caves 9 and 10 are two **chaitya-gṛhas** (worship halls) dating to the **2nd–1st century BCE**, the earliest period of Ajanta's construction. Both were later reworked during the **5th-century Vākāṭaka phase**.

- **Cave 9** (18.24 m × 8.04 m) is smaller but architecturally more complex than Cave 10. According to Spink, Cave 10 may date to the **1st century BCE**, while Cave 9 was constructed about a century later. Several small subsidiary shrines (9A–9D and 10A) were also added during the later period, commissioned by individual donors.

The layout of Cave 9 includes:

- A **distinct apsidal (horseshoe-shaped) plan** with a central nave, side aisles, and an apse.
- A vaulted ceiling and a stupa placed at the center of the apse, resting on a cylindrical base.
- A circumambulatory path (*pradakshina*) around the stupa.
- Rows of 23 pillars defining the nave and aisles.

On the left wall, votive figures are shown approaching the stupa, reflecting devotional practices. Traces of wooden fittings in the cave's arched façade suggest that timber elements were once integrated into the design.

Cave 10 is larger (30.5 m × 12.2 m) and simpler in design. Together, these chaitya halls foreshadow the **basilica-style architecture** later seen in Christian churches, though adapted to Buddhist ritual needs.

Monastic Infrastructure

Over 80% of the Ajanta caves are **vihāras** (monastic residences or resting places for travelers). These spaces were not only for meditation but also served practical needs such as storing food, donations, and supplies.

- Large **recesses cut into the floors** of caves acted as storage vaults, particularly in Cave 11 and the lower level of Cave 6.
- Their elevated positions provided both **security and convenience**.

- Some scholars suggest that these vaults doubled as covered sleeping spaces for pilgrims and monks.

This integration of logistics, living space, and religious functions demonstrates the dual role of Ajanta caves as both **spiritual sanctuaries** and **functional monasteries**.

Preservation and Early Copies of Ajanta Paintings

The paintings at Ajanta, though of exceptional artistic quality, have suffered significant deterioration since their rediscovery in 1819. Copies made in the 19th and early 20th centuries remain crucial for understanding their original appearance.

Robert Gill (1844–1875)

- Major Robert Gill, an army officer and painter, was commissioned by the Royal Asiatic Society to copy Ajanta murals.
- Between 1844 and 1863, he produced 27 large copies, most of which were tragically destroyed in the **1866 Crystal Palace fire** in London.
- Gill returned to Ajanta and continued his work until his death in 1875.

John Griffiths and Students (1872–1885)

- The Bombay Presidency commissioned **John Griffiths** and his students to create over 300 canvases of Ajanta paintings.
- These works were exhibited at the **Imperial Institute** in London (now the Victoria and Albert Museum).
- Unfortunately, over 100 were destroyed in another fire in 1885. About **166 survive** in the V&A collection, though they have rarely been displayed since 1955.

Lady Christiana Herringham (1909–1911)

- Lady Herringham, with students from the Calcutta School of Art (including the renowned painter **Nandalal Bose**), produced copies published in color by the **India Society of London**.
- Unlike earlier Victorian-influenced copies, these works embraced an **Indian Renaissance aesthetic**, influenced by Abanindranath Tagore.
- They attempted to **reconstruct missing sections** rather than merely recording the decayed state.

Photographic Surveys

Early photographic efforts by **Robert Gill** (including stereoscopic views), **Victor Goloubew** (1911), and **E.L. Vassey**were later compiled in Ghulam Yazdani's monumental **four-volume study of Ajanta** (1930–1955).

REVIEW OF LITERATURE

Rock-cut architecture represents one of the most distinctive developments in the history of Indian art and architecture. All the major ancient religions of India—Hinduism, Jainism, and Buddhism—adopted the practice of excavating rock-cut temples, monasteries, and pilgrimage sites (Fergusson & Burgess, 1880).

Stupa Temples

Stupas, which originated as burial mounds, gradually became sacred structures for worship in ancient India. The Buddhists adopted this practice, enshrining the relics of the Buddha within stupas. In later times, relics were redistributed and placed in newer stupas made of stone and brick. Within the rock-cut tradition, monolithic stupa temples were excavated. Although these could not contain relics, they were venerated with equal devotion.

The evolved stupa temples, as seen in Ajanta Caves 9, 10, 19, and 26, characteristically include a front court, a high enclosure wall, a nave, the stupa at the rear of the nave, a circumambulatory path separated by a colonnade, and a vaulted ceiling. Later variations incorporated porches (Cave 26), musicians' galleries (Cave 19), terraces (Cave 26), and adjunct structures such as upās´rayas or maṇḍapas (Singh, 2012a).

Upās´rayas

The word *upās´raya*, found in Ajanta inscriptions, refers to lodging places for monks—a usage still common in India. These represent one of the two major architectural types at Ajanta, the other being temples. In the Satavahana period, caves served either as lodging halls (*upās´rayas*) or as worship halls. However, around 466 CE, a new architectural development emerged: *upās´rayas* were transformed into *maṇḍapas* or *stupa-vihāras*, combining monastic living quarters with Buddha shrines and elaborate picture galleries (*vithikās*) (Singh, 2012b).

Architecturally, *upās´rayas* were simpler in plan, featuring a central congregation hall surrounded by residential cells, some with stone benches and pillows. Larger ones included pillars, windows, porches, and courtyards. Decorative elements were minimal.

Maṇḍapas

The term *maṇḍapa* traditionally refers to a pavilion, but in the Ajanta context, inscriptions associate it with the presence of the Buddha. Thus, maṇḍapas functioned as temples rather than mere hostels. Caves such as 16 and 17 exemplify this, where shrines dedicated to the Buddha were excavated. These structures are referred to in inscriptions as *ćaitya-maṇḍapam*, *stupa-vihāram*, or *munirāja-ćaityam* (Yazdani, 1952; Mirashi, 1963).

Ajanta paintings often depict the Buddha seated in pavilion-like settings, which correspond architecturally to these excavated maṇḍapas. Characterized by pillared porticos, porches, central halls, and adjoining cells, they are effectively temples due to the presence of Buddha images.

Cisterns

Given the varying elevations of the Ajanta caves, cisterns were an essential feature to harvest and store water. Almost every cave had a cistern, some large enough to store drinking water for monks and pilgrims. Excavating cisterns into basalt cliffs of the Western Ghats required considerable engineering expertise. Examples include cisterns in Cave 6 (inside the porch), Caves 4 and 21 (inside outer cells), and Cave 18, which had a specially dedicated pillared structure for water storage.

Paintings

Ajanta paintings, once misunderstood as frescoes, are now correctly identified as murals. They encompass a wide thematic range, as classified by Schlingloff (2013) and Zin (2003), into:

- **Narrative themes**: episodes from the life of the Buddha and Jataka tales of his previous births.
- **Non-narrative themes**: devotional or ornamental motifs.

Pigments and Technique

Scientific analysis of Ajanta pigments (M. Singh) shows the use of both destructive and non-destructive methods. Colors were prepared by mixing natural pigments—e.g., pink from white kaolin/calcium carbonate combined with red ochre or red lake, sometimes enhanced with orpiment or realgar. The pigments were applied with organic binders over a plaster base made of silt, vegetable fibers, dung, ground rock powder, and minimal mud.

Over this base, a fine calcium carbonate layer (80–200 mm thick) was applied to create a smooth, uniform surface. This multilayered plaster reveals calcium, silicon, aluminum, and iron components, consistent with soil collected from the nearby Wāghur River. Such practice aligns with recommendations from ancient texts like the *Samarāngana Sūtradhāra*.

Conservation Concerns

The Ajanta murals face serious threats from rising humidity due to tourism and microclimatic changes. Earlier conservation efforts, such as applying cheap varnish in the 19th century, have worsened deterioration. Modern scientific studies using XRF, FTIR, SEM-EDX, and particle size analysis have provided detailed insights into the plaster composition and the challenges of preservation.

✨Costumes in Ajanta Paintings

The Ajanta murals, besides being masterpieces of Buddhist religious art, serve as an invaluable visual archive of the costumes, fabrics, jewelry, and draping styles prevalent in ancient India. They reflect not only aesthetic sensibilities but also socio-cultural practices and trade influences of the period.

1. Men's Attire

- **Lower Garments**:
  - The most common was the *dhoti* (antariya), usually unstitched cloth wrapped around the waist and tied with a sash.
  - Dhotis were worn long, often pleated and sometimes tucked between the legs for ease of movement.
  - Some men are shown with shorter versions (*lungi*-like), possibly for labor or military activity.
- **Upper Garments**:
  - Many men appear bare-chested, especially ascetics, monks, and attendants.
  - Aristocrats and royals sometimes wear a *uttariya* (shawl-like cloth) draped over one or both shoulders.
  - Fitted tunics and half-sleeve jackets also appear, showing Central Asian and possibly Persian influence (linked with trade along the Silk Route).
- **Headgear & Hairstyles**:
  - Elaborate turbans, crowns (*mukut*), and jewelled headbands are prominent among nobles.
  - Hairstyles range from neatly tied buns (*jata* for ascetics) to loose flowing hair for musicians and attendants.
- **Jewelry**:
  - Necklaces (beaded, pearl, gold chains), armlets (*keyura*), anklets, and large circular earrings (*kundalas*) were widely used.
  - Waistbands or jeweled girdles were worn to secure the dhoti.

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2. Women's Attire

- **Lower Garments**:
  - The main dress was a skirt-like drape (*antariya*), tied with a decorative waistband.
  - Some are transparent or finely pleated, showing the delicacy of fabric.
  - A separate undergarment-like cloth is sometimes visible, indicating layering.
- **Upper Garments**:
  - A short blouse (*choli*), often tight-fitting and with short sleeves, appears in some depictions.
  - The *uttariya* was frequently used as a veil or drape over the torso and shoulders, sometimes covering the head.
  - In many murals, the upper body is bare except for jewelry, suggesting climate and aesthetic preference.
- **Draping Styles**:
  - Women's garments are depicted with intricate pleats and flowing drapes.
  - Transparent and diaphanous fabrics (muslin, fine cotton, silk) suggest Indian mastery in textile weaving.
- **Jewelry**:
  - Heavy ornamentation is characteristic—multiple necklaces, elaborate girdles, anklets, toe rings, and ornate armlets.
  - Earrings are large and elaborate, sometimes stretching the earlobes.
  - Hair is decorated with flowers, jeweled pins, and sometimes elaborate coiffures.

3. Fabrics and Textiles

- Fine muslin and cotton fabrics (locally produced) were commonly depicted, often shown as transparent or semi-transparent.
- Silk textiles, sometimes patterned, reflect India's role in the Silk Road trade.
- Intricate borders and embroidery suggest advanced weaving and dyeing techniques.
- Use of bright colors such as red, yellow, white, blue, and green in the murals shows the availability of natural dyes (e.g., indigo, madder, turmeric).

4. Cultural Influences

- **Indigenous traditions**: Dhotis, uttariyas, and jewelry styles trace back to early Vedic and Mauryan traditions.

- **Buddhist simplicity**: Monks' robes (*civara*) are plain and modest, contrasting with the luxurious attire of royals and lay devotees.
- **Foreign contacts**: Certain tunics, trousers, and boots seen in a few figures resemble Central Asian or Persian dress, pointing to cultural exchanges through trade and migration.
- **Symbolic aspects**: Jewelry and attire often denote rank, wealth, or spiritual role—royals are lavishly dressed, while ascetics wear simple robes.

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5. Significance

The Ajanta paintings are not merely decorative; they are anthropological records that:

- Document everyday fashion of ancient India.
- Reveal textile and jewelry craftsmanship.
- Demonstrate the interplay between indigenous and foreign cultural elements.
- Illustrate the contrast between monastic ideals and worldly luxury.

Ajanta costumes depict a rich tapestry of life—from kings and queens adorned in silk, pearls, and gold, to monks in plain robes symbolizing renunciation. The fabrics, draping, and jewelry highlight not just fashion, but also trade, social hierarchy, and cultural synthesis of India between the 2nd century BCE and 6th century CE.

METHODOLOGY

1. Research Approach

This dissertation adopts a **descriptive-historical methodology** combined with **visual analysis**. Since Ajanta paintings are a visual archive of India's cultural heritage, the study examines costumes, fabrics, and textile ornamentation through both **primary visual data** (murals) and **secondary textual data** (historical literature, scholarly writings, archaeological reports).

The approach is both:

- **Analytical** – interpreting motifs, colors, and draping styles.
- **Comparative** – correlating Ajanta depictions with known textile traditions like Bandhani, Ikat, and Leheriya.

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2. Data Collection

The following sources and techniques were used:

- **Field Observation (Place of Study – Ajanta Caves):**
  Direct study of murals depicting costumes, jewelry, and textile motifs.
- **Literature Review:**
  Reference to historical texts such as *Harshacharita* by Banabhatta, scholarly works (Walter Spink, Huntington, Harle), and archaeological survey reports.
- **Museum Visits & Archival Sources:**
  Study of textile samples, fabric swatches, and preserved ancient dye techniques.
- **Digital Resources:**
  Internet archives, e-libraries, and databases for comparative analysis of textile traditions across India.

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3. Selection of Samples

- **Visual Samples:** Murals from Ajanta depicting both men's and women's attire.
- **Textile Samples:** Tie & dye (Bandhani), Leheriya, and Ikat fabrics studied for technical processes.
- **Cultural Correlation:** Comparison of Ajanta depictions with existing craft traditions in Gujarat, Rajasthan, Andhra Pradesh, and Orissa.

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4. Techniques Examined

- **Bandhani (Tie & Dye):**
  - Evidence from Ajanta murals showing bodices with resist-dyed motifs.
  - Process studied: tying, knotting (bheendi), waxing, multiple dyeing stages.
  - Motifs: *boond, beldaar, ekdali, leheriya,* etc.
  - Cultural role: auspicious bridal odhanis and festive wear.
- **Leheriya:**
  - Zigzag/diagonal patterns visible in Ajanta designs.
  - Technique: rolling diagonally, tying with thread, multi-bath dyeing.
  - Usage: festive turbans, headcloths, women's drapes.
- **Ikat (Single & Double):**
  - Comparative study with Patola (Gujarat), Bandha (Orissa), Pochampally (Andhra).
  - Method: resist-dyeing warp/weft threads before weaving.
  - Cultural significance: luxury textiles used by elites, possibly reflected in Ajanta elite costumes.

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5. Analytical Framework

- **Iconographic Analysis:** Identifying costume details in Ajanta paintings.
- **Textile Technology Study:** Understanding ancient resist-dye methods.
- **Cultural Contextualization:** Relating Ajanta depictions to living craft traditions.

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6. Limitations

- Murals are partially damaged, so some fabric details are reconstructed through secondary sources.
- Dating of Ajanta remains debated (Satavahana vs. Vakataka period), which affects textile chronology.

Methodology (Extended Section: Looms, Motifs & Product Development)

1. Looms Used

The study also explores weaving practices connected to ancient Indian textiles, particularly those reflected in Ajanta traditions. The looms examined are:

- **Traditional Pit Loom:**
  - Requires less space.
  - Weaver sits with legs inside the pit, leaving hands free to pass the weft shuttle.
- **Frame Loom:**
  - An improved version of the pit loom.
  - The structure is raised above ground, supported by wooden battens.
- **Raised Loom:**
  - Another variation of the pit loom.
  - The weaver sits on a raised platform instead of digging a pit.

These looms represent continuity of weaving traditions in India and provide technical insights into how ikat, tie-and-dye, and patterned fabrics seen in Ajanta could have been produced.

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2. Common Motifs in Ikat

Motifs studied for documentation and reinterpretation include:

- **Peacock:** Symbol of beauty and prosperity, associated with rain.

- **Elephant:** Symbol of fertility, cosmic waters, and connected to Lord Ganesha.
- **Mallepu (Jasmine flower):** Represents delicacy, fragrance, and auspiciousness.

3. Selection of Samples

Samples of textile motifs and costume depictions were taken from the following Ajanta caves:

- **Cave 1:** 14 samples
- **Cave 2:** 8 samples
- **Cave 17:** 11 samples

Secondary Sources: Historical literature, museum archives, documentaries, and digital resources.

4. Development of Tools

Exploration focused on:

- Documentation of design details.
- Placement of motifs in paintings.
- Analysis of color palettes, fabrics, and raw materials used.
- Study of production processes including tie-dye, block print, patchwork, and ikat weaving.

5. Creation & Selection of Motifs

- **Creation:** Fifteen motifs were derived from Ajanta paintings.
- **Panel Review:** A panel of four teachers evaluated and selected five motifs for stylization.
- **Stylization:** Each motif was further stylized into three new designs, resulting in fifteen motifs.
- **Final Selection:** Ten motifs were shortlisted by the same panel for **product development**.

Evaluation Scale (Motifs & Designs):

- Excellent – 5
- Very Good – 4
- Good – 3
- Average – 2

- Poor – 1

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6. Product Development Process

- **Fabric & Color Selection:** Finalized by the panel (cotton, silk, and blends with natural dyes).
- **Embroidery & Ornamentation:** Motifs embellished using **Bandhani & Tie-Dye techniques**.
- **Sketching:** Fifteen sketches for men's and women's ethnic wear were developed, incorporating Ajanta-inspired motifs.
- **Construction:** Products created with experimental placement of motifs in different patterns.

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7. Evaluation of Products

Products were assessed using a rating scale that measured:

- Fabric quality
- Motif clarity and placement
- Color harmony
- Embellishment technique
- Overall aesthetic appeal
- Willingness to purchase

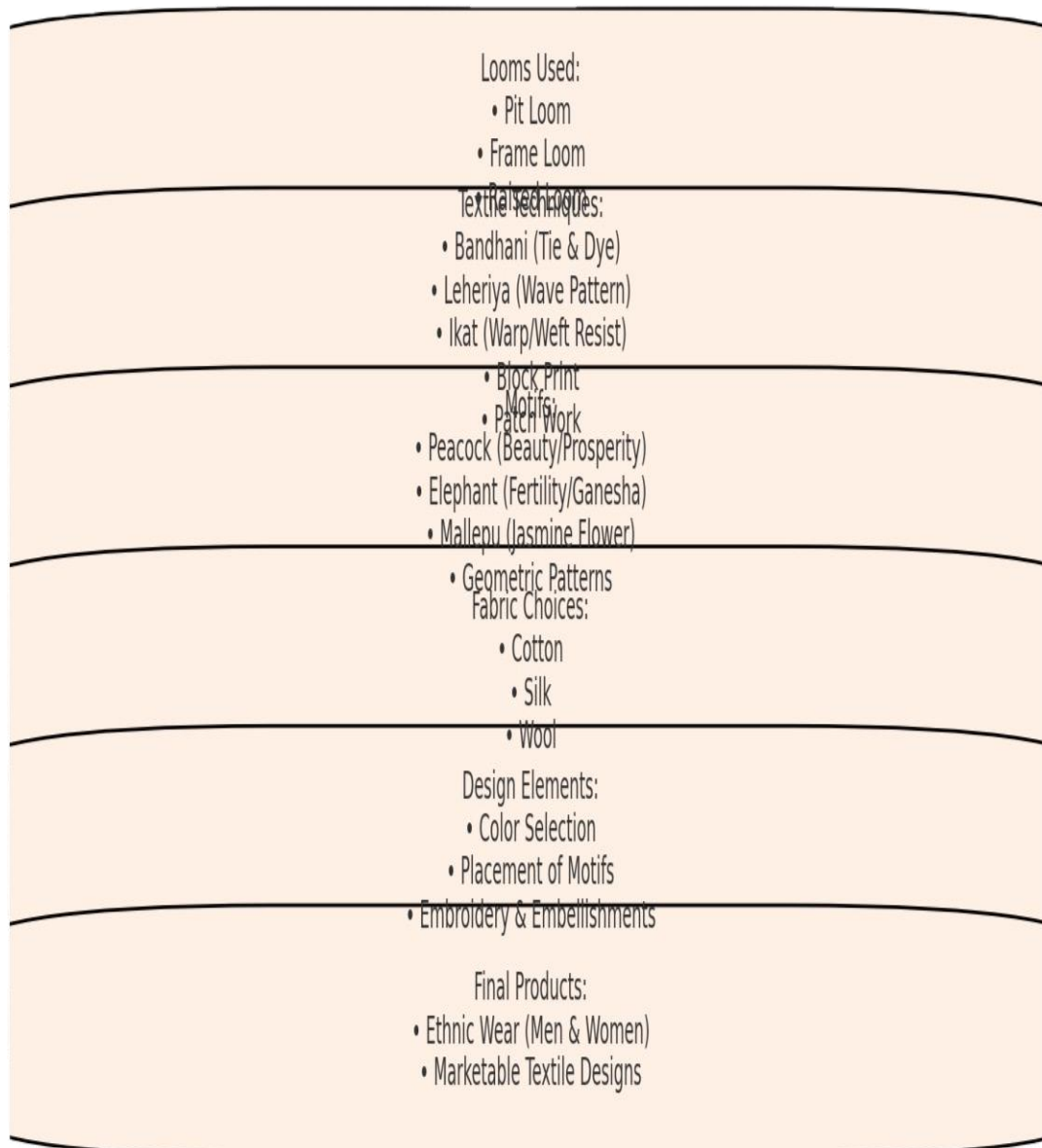### Evaluation Scale (Product Assessment):

- Excellent – 5
- Very Good – 4
- Good – 3
- Average – 2
- Poor – 1

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8. Market Analysis

no The responses collected from the panel were analyzed to evaluate **saleability and consumer appeal** of Ajanta-inspired products in the contemporary fashion and textile market.
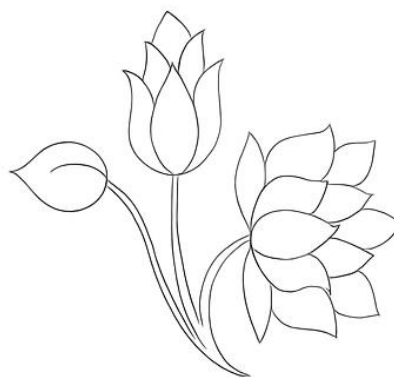
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16 | P a g e

Research Methodology flow chart: Ajanta inspired Textiles

Sample Collection
(Cave 1, 2, 17)

Motif Creation
(15 motifs)

Panel Review
(4 teachers)

Stylization
(3 versions per motif → 15)

Final Selection
(10 motifs)

Fabric & Color Selection

Sketching Designs
(Men & Women Ethnic Wear)

Product Construction

Evaluation & Rating
(Scale: 1–5)

Market Analysis
(Saleability & Appeal)

Loom and Textile Techniques Flowchart (Ajanta inspiration)

Looms Used:
• Pit Loom
• Frame Loom
• Raised Loom

Textile Techniques:
• Bandhani (Tie & Dye)
• Leheriya (Wave Pattern)
• Ikat (Warp/Weft Resist)
• Block Print
• Patch Work

Motifs:
• Peacock (Beauty/Prosperity)
• Elephant (Fertility/Ganesha)
• Mallepu (Jasmine Flower)
• Geometric Patterns

Fabric Choices:
• Cotton
• Silk
• Wool

Design Elements:
• Color Selection
• Placement of Motifs
• Embroidery & Embellishments

Final Products:
• Ethnic Wear (Men & Women)
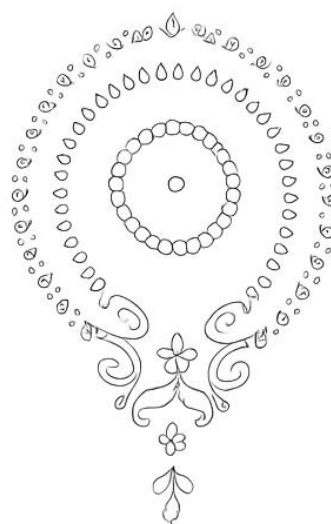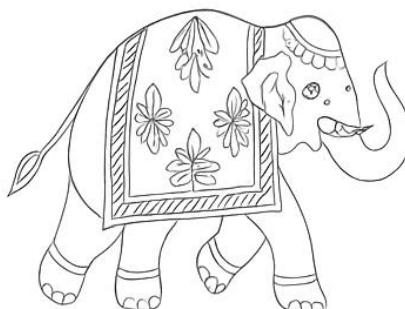• Marketable Textile Designs

SELECTED MOTIF

M-1

M-6

M-8

M-4

M-5

- **Motif Identification**: Selected motifs (M-1, M-4, M-5, M-6, M-8) were extracted/drawn from Ajanta-inspired designs.
- **Documentation**: Each motif was sketched, digitized, and labeled for clarity.
- **Analysis**: These motifs were later evaluated for placement, adaptation in textile patterns, and influence on modern fashion design.

Evaluation of Placement of Ajanta Painting Motifs

The motifs selected from Ajanta paintings (M-1, M-4, M-5, M-6, and M-8) reflect the traditional artistic essence of Indian mural art. Their placement has been studied with respect to balance, symmetry, and thematic representation:

1. **Motif M-1 (Floral with Bird Design)**
   - Placement at the top left provides visual balance and draws attention to the delicate interplay of flora and fauna.
   - Symbolically, it reflects nature's harmony, a recurrent theme in Ajanta murals.
2. **Motif M-6 (Lotus Design)**
   - Positioned at the top right, balancing M-1 while introducing a calm and symmetrical effect.
   - The lotus is a recurring spiritual motif in Ajanta, signifying purity and divine beauty.
3. **Motif M-4 (Circular Mandala-like Design)**
   - Placed towards the right side of the central area, representing cosmic order and completeness.
   - Its circular structure adds rhythm and continuity to the layout, echoing meditative patterns often seen in Ajanta ornamentation.
4. **Motif M-5 (Decorated Elephant)**
   - Positioned at the bottom center, anchoring the arrangement with a strong figurative element.
   - The elephant symbolizes strength, prosperity, and royal processions depicted in Ajanta murals.
5. **Motif M-8 (Ornamental Floral Composition)**
   - Placed at the bottom left, balancing M-5 with intricate detail.
   - Its ornamental quality highlights the grandeur and intricacy characteristic of Ajanta decorative panels.

The placement of motifs is balanced across the page, maintaining harmony between flora, fauna, geometric, and figurative elements. The arrangement ensures that no motif overshadows another, creating a rhythmic flow similar to the sequential storytelling style

of Ajanta murals. Symbolism, symmetry, and cultural context have been preserved, making the selection and placement effective for both aesthetic and academic study.

RESULT AND DISCUSSION

The Ajanta Caves serve as the most significant surviving evidence of Buddhist artistic and cultural expression in India between the 2nd century BCE and 6th century CE. The paintings demonstrate not only religious narratives but also a sophisticated understanding of textile traditions, natural dyeing processes, garment construction, and motif placement.

1. Artistic Innovation and Perspective

Ajanta marks the earliest instance in India where artists employed three-dimensional techniques to create depth and perspective. This innovation is evident in **Cave 1**, where the Mahajanaka Jataka murals depict figures with volume, natural shading, and realistic folds of drapery. Such methods were later adopted in Central Asian and Chinese Buddhist art, signifying Ajanta's role as a transmitter of artistic knowledge.

2. Textile Depictions and Natural Dyes

The analysis of painted textiles reveals a highly advanced dyeing tradition, entirely based on natural sources:

- **Red Dye (Manjishta / Indian Madder):**
  In the **Mahajanaka Jataka (Cave 1)**, the queen's lower garment appears in a pale maroon tone, possibly produced by diluting madder dye.
  In the **Sibi Jataka (Cave 17)**, a solid red blouse provides evidence of strong mordant dyeing using Indian madder roots.
- **Black Dye (Iron-Rust Mixture):**
  The **Shankapala Jataka (Cave 1)** depicts figures in dark garments achieved by fermenting jaggery and iron rods, which produced ferric oxide-based dye.
- **Blue Dye (Indigo):**
  The **Vidhurapanditha Jataka (Cave 2)** shows characters wearing sheer blue drapery, indicating the use of indigo vat dyeing. The layering of folds demonstrates the painter's skill in suggesting translucent fabric textures.

Thus, Ajanta paintings offer visual evidence of natural dye practices that have parallels in contemporary handloom sectors.

3. Fabric Patterns and Decorative Techniques

Ajanta murals illustrate a wide repertoire of textile designs and ornamentation that resonate with modern practices:

- **Ikat Patterns:**
  In the **Shankapala Jataka (Cave 1)**, Bodhisattva's striped lower garment with checkered intervals resembles double ikat weaving. Similarly, in the **Mahajanaka Jataka (Cave 1)**, the queen's striped drapery reflects ikat patterns still prevalent in Odisha (Sambalpuri), Andhra Pradesh (Pochampally), and Gujarat (Patan Patola).
- **Bandhani (Tie-Dye):**
  The **Mahajanaka Jataka (Cave 1)** shows garments with spotted pale designs on dark backgrounds, typical of bandhani technique, which survives in Rajasthan and Gujarat today.
- **Block Printing:**
  The **Bodhisattva Avalokitesvara (Cave 1)** is depicted in a patterned fabric resembling early block printing with ferric oxide. This method is echoed in later traditions such as Bagh, Sanganer, and Kalamkari prints.
- **Dip-Dyeing:**
  In the **Sibi Jataka (Cave 1)**, irregular striped effects suggest fabrics woven with dip-dyed yarns, producing subtle gradations of hue.
- **Appliqué and Decorative Stitching:**
  In the **Sutasoma Jataka (Cave 17)**, appliqué work is identifiable, while several garments show decorative stitch lines along necklines and borders, indicating early forms of fashion detailing.

4. Garment Construction and Fashion Aesthetics

Ajanta murals depict both unstitched draped garments and stitched apparel:

- **Sheer Drapes:** Bodhisattva figures (Cave 1 and 2) are often shown in transparent muslin, a textile so fine that even multiple layers appear translucent.
- **Kurti-like Garments:** In the **Mahajanaka Jataka (Cave 1)**, a dancer wears a stitched kurti-style garment with asymmetrical hemline and ikat-decorated borders.
- **Kaftans:** The **Sutasoma Jataka (Cave 17)** shows women in striped kaftan-like robes, simple in cut but rich in color.
- **Shawls and Skirts:** Lower garments with thigh-length hemlines and sheer shawls draped over the torso illustrate multiple dressing styles.

These examples indicate not only fashion diversity but also a nuanced understanding of fabric behavior, draping, and body aesthetics.

5. Motif Placement and Symbolic Representation

The motifs selected from Ajanta murals—lotus flowers, floral scrolls, elephants, circular mandalas, and ornamental patterns—serve both decorative and symbolic functions:

- **Lotus Motifs (Cave 1, Cave 6):** Symbolize purity, spiritual awakening, and are often placed near deities and Bodhisattvas.
- **Elephants (Cave 17):** Represent strength, prosperity, and ceremonial grandeur.
- **Circular Mandalas (Cave 2):** Reflect cosmic harmony and meditative completeness.
- **Floral Scrolls and Birds (Cave 1):** Enhance rhythmic flow in mural compositions, embodying the naturalistic aesthetics of Ajanta.

The placement of these motifs balances narrative storytelling with decorative enrichment, ensuring both visual harmony and symbolic depth.

6. Modern Relevance

Ajanta's textile traditions and motifs have strong continuity in the present. Techniques like ikat, bandhani, block printing, and appliqué are still practiced across Indian handloom clusters. Similarly, garment styles such as kurtis, kaftans, sheer muslin drapes, and embroidered borders resonate with modern fashion design. This demonstrates Ajanta's lasting impact on textile culture and fashion aesthetics, both within India and globally.

Influence on Modern Fashion

The Ajanta cave paintings, dating from the 2nd century BCE to 5th century CE, serve not only as spiritual and narrative masterpieces but also as enduring wells of aesthetic inspiration that have profoundly shaped modern fashion, textile design, and high couture. Their intricate motifs, garment depictions, and dyeing techniques continue to resonate across centuries and continents.

1. Ajanta as a Template for Textile Motifs and Weaves

According to Prof. Subramanian Swaminathan, Ajanta presents a "treasure-house to study contemporary fashion in textiles, jewellery, etc." For example, the **tailored dress of the dancer** in the Mahā-jāṇaka Jātaka (Cave 1) reflects sophisticated dress-making,

while ikat weaving traditions like Patola and Pochampally trace their lineage to such textile patterns seen on Ajanta walls.

Moreover, the **Paithani sari revival** by textile designer Meera Mehta demonstrates this influence in practice. Mehta's ornate Paithanis—handwoven with silk and gold threads—feature motifs like the lotus (*kamal*), directly inspired by Ajanta's Buddhist iconography.

2. Haute Couture Echoes of Ancient Aesthetics

Researcher Prasad Pawar, who led restoration efforts at Ajanta, asserts that "international fashion has not evolved for the last 2000 years... the same essence is resonating now." He highlights modern couture's use of **sheer fabrics, heavy jacquards, glazing silks, block prints, and gold embellishments**, all of which can be traced back to Ajanta's stylistic repertoire.

Designers have explicitly translated these ancient aesthetics onto modern platforms. For instance, **Gaurang Shah's Chitravali collection** (Lakmé Fashion Week Autumn/Winter 2017) drew on 30 fresco motifs from Ajanta and Ellora, applying them to textiles via kalamkari techniques on custom silk organza, dyed using natural processes.

Similarly, **Anju Modi** created an Ajanta-Ellora-themed set for a fashion show, featuring fabrics replicating cave carvings and block print patterns as roomBackdrop—demonstrating a seamless integration of ancient art into contemporary fashion staging.

Nita Ambani's Paithani sari, designed by Manish Malhotra, showcases golden threads and **floral motifs drawn from Ajanta caves**, reinforcing the enduring relevance of these motifs in festive and high-fashion Indian wear.

3. Art-Craft Fusion in Textile Innovation

Fashion and design scholars Shivi Rastogi and Ritu Sharma found that **woolen shawls** incorporating Ajanta and Ellora motifs scored highly in both aesthetics and cultural resonance. The project concluded that embedding traditional motifs into modern garment design not only offers innovation but also revitalizes India's cultural heritage.

4. Broader Historical Echoes

Ajanta's influence extends beyond fashion into art movements and national identity formation. As documented by Nolan Hawkins, early modern Indian figures—such as Abanindranath Tagore, E.B. Havell, and Rabindranath Tagore's circle—consulted Ajanta frescoes to define an indigenous aesthetic in the Bengal School of Art. This

cross-pollination between visual arts and applied fashion signals Ajanta's pervasive impact.

Summary Table of Influences

Ajanta Element	Modern Fashion Influence	Example / Designer
Ikat weaving motifs	Ikat sarees and patterns	Patola, Pochampally (Swaminathan)
Lotus motifs, gold embellishment	Paithani sari design	Meera Mehta; Nita Ambani's sari
Sheer fabrics, block prints, jewellery styling	Haute couture and runway design	Gaurang Shah, Anju Modi
Textile innovation with cultural motifs	Woolen shawl prototypes	Rastogi & Sharma study

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This overview underscores that Ajanta's artistic legacy is not confined to ancient cave walls—it lives on in the fabrics, prints, silhouettes, and spectacle of today's fashion world.

CONCLUSION

The Ajanta murals represent not only the pinnacle of Buddhist narrative art but also a sophisticated archive of India's ancient textile culture, dyeing technologies, and fashion aesthetics. The findings of this study demonstrate that Ajanta served as more than a religious monument—it functioned as a visual encyclopedia of fabrics, motifs, and garment construction that influenced cultures across Asia.

The **analysis of dyes** confirms the reliance on natural resources: *manjishta* for reds, indigo for blues, and iron-based solutions for blacks. In the **Mahajanaka Jataka (Cave 1)**, pale maroon garments exemplify diluted madder dye, while the **Sibi Jataka (Cave 17)** depicts a strong red blouse, highlighting mastery over mordant processes. The **Vidhurapanditha Jataka (Cave 2)** illustrates the use of indigo, where blue sheer drapery reflects both textile transparency and the painter's command over tonal variation.

The **representation of fabric patterns** in Ajanta closely parallels techniques still alive in Indian handlooms. **Ikat designs**, as seen in the **Shankapala Jataka (Cave 1)** and **Mahajanaka Jataka (Cave 1)**, correspond to modern Sambalpuri and Patan Patola weaves. **Bandhani motifs** in Mahajanaka's gathering reflect tie-dye traditions still practiced in Gujarat and Rajasthan. Similarly, **block printing** patterns in the Avalokitesvara mural (Cave 1) indicate early experimentation with resist-dyeing techniques, while **appliqué work** in the **Sutasoma Jataka (Cave 17)** affirms the decorative tailoring practices of the period.

Garment construction at Ajanta reveals a deep fashion sensibility. While **Bodhisattva figures (Cave 1, Cave 2)** are often shown draped in sheer muslin, a **dancer in Mahajanaka Jataka (Cave 1)** wears a kurti-style stitched garment with asymmetrical hemline, foreshadowing the modern kurta. The **Sutasoma Jataka (Cave 17)** shows women clad in striped kaftan-like garments, while the **Shankapala Jataka (Cave 1)** depicts lower garments with ikat and check patterns, further confirming advanced tailoring aesthetics.

Motifs across Ajanta murals were consciously placed to blend decorative richness with symbolic meaning. **Lotus motifs (Cave 1)** signify purity, **elephants (Cave 17)** embody strength and prosperity, and **circular mandalas (Cave 2)** reflect cosmic order. Their strategic placement enhances both narrative storytelling and visual harmony, attesting to the Ajanta artists' compositional genius.

In conclusion, the Ajanta murals remain a **timeless repository of cultural memory**, where artistry, symbolism, and textile tradition intersect. The visual vocabulary developed at Ajanta—ranging from dyes and weaves to motifs and garment styles—

continues to inspire global fashion and textile industries. What was once painted on the walls of Buddhist caves now resonates across centuries as ikat saris in Odisha, bandhani dupattas in Rajasthan, or block-printed fabrics in Madhya Pradesh. Thus, Ajanta bridges antiquity and modernity, proving that India's aesthetic and technological contributions to textile culture were not only innovative for their time but remain profoundly relevant in the present.

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