

ADAPTATION OF TRIBAL ART OF CENTRAL WESTERN INDIA FOR DEVELOPMENT OF TEXTILE PRODUCT USING DIGITAL DESIGN SOFTWARE

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ABSTRACT

The tribal art of Central Western India including the Warli, Gond, Bhil, Pithora, Mandana, and others boasts a rich heritage of vibrant colors, intricate patterns, and traditional motifs, reflecting the unique cultural and artistic diversity of the region. This research explores the fusion of tradition and modernity by adapting tribal art into textile design using digital design software to enhance the efficiency and accuracy of textile design. The study also aims to highlight the potential for sustainable development and economic empowerment of tribal communities while preserving and promoting their indigenous art forms. By bridging the gap between tradition and modernity, this research demonstrates the feasibility of adapting tribal art for textile products using digital tools, leading to innovative and marketable designs by preserving the art forms and improving the overall well-being of tribal communities.

Keywords: Tribal Art, Design, Digital Tool, Innovation, Style, Creative Adaptation Etc.

1. INTRODUCTION

India's oldest and second-largest industry is the textile sector, after agriculture. Vedic literature contains references to the Harappa civilization's knowledge of cotton weaving and spinning. The prosperous India textile is unique, rich and diverse like its customs and ethnicity. Textiles are engrained in Indian culture and ethos. All parts of the country have their own unique cultural ethos, which is apparent in the handicrafts of that exacting region. Central Western India is home to numerous tribal communities, each with its distinct artistic traditions. For this

study, the region for Central Western India includes Maharashtra, Gujarat, Madhya Pradesh & Rajasthan as shown in [Figure 1](#).

Figure 1



Figure 1 Map of Central Western India

The tribal communities of Central Western India, including but not limited to the Warli, Bhil, Pithora, Gond, and Madhubani, have a rich and diverse cultural heritage marked by their unique art forms. These art forms, characterized by geometric shapes, intricate detailing, and cultural symbolism, are deeply rooted in the history and traditions of these communities [Gupta and Gangwar \(2016\)](#).

In recent years, it has become more crucial to protect and promote indigenous creative forms. The cultural significance of tribal art, coupled with its potential as a source of income for marginalized communities, has garnered attention from scholars and policymakers alike [Sharma \(2015\)](#).

The use of CAD tools in the textile industry has revolutionized the design and production processes. CAD enables designers to create intricate patterns, experiment with colors, and generate precise technical drawings, significantly enhancing the efficiency and accuracy of textile design [Senthil \(2021\)](#).

The adaptation of tribal art into textile design using CAD techniques represents a bridge between tradition and modernity. It not only allows for the preservation of tribal art but also offers the potential for creating innovative and marketable textile products [Sharma \(2016\)](#).

Several case studies and success stories have demonstrated the feasibility and impact of integrating tribal art into textile products using CAD. These initiatives have contributed to the economic empowerment of tribal communities while showcasing the artistic richness of Central Western India [Yaminijhanji \(2020\)](#).

The adaptation of tribal art for commercial purposes raises important questions about cultural appropriation, intellectual property rights, and ethical considerations. Scholars have explored these challenges and emphasized the need for responsible and ethical practices [Renu et al. \(2017\)](#).

Understanding the market potential and consumer preferences for textile products featuring tribal art is crucial for the success of such ventures. Market

research and consumer surveys have shed light on the demand for unique, culturally inspired textile products.

Researcher has highlighted the potential for sustainable development and community empowerment through the adaptation of tribal art. This approach not only generates income but also contributes to the preservation of indigenous art forms and the overall well-being of tribal communities [Nath and Shanti. \(2023\)](#).

This interdisciplinary approach has the potential to benefit both tribal communities and the broader textile industry, fostering cultural preservation, economic empowerment, and innovative design in a responsible and ethical manner.

1.1. TRIBAL ART OF CENTRAL WESTERN INDIA

Art is not for the possession by recognized painters, but it is an authentic mode of expressing one's feelings. India has gifted the world some magnificent and rare masterpieces comprise of tribal artwork which describes the cultural beauty and diversity of the country. Indian tribal art has a distinct position among all the art forms. It is a class apart, well respected and admired by everyone. This art helps the viewers to feel the lives and lifestyle of the Indian tribes. This art has positivity in its various themes and ideas like life, marriage, birth, harvest, jubilation, etc.

1.2. TRIBAL ART OF MADHYA PRADESH

While the majority of Madhya Pradesh is in Central India, its western part is often included in the Central Western region. Due to its geographic location in the middle of India, Madhya Pradesh is regarded as the "Heart of India" and is renowned for its amazing culture. Despite significant cultural overlap with states like Rajasthan and Maharashtra, the state nonetheless maintains a distinctive culture all its own. Numerous indigenous settlements can be found in this area. The tribal paintings portray the way of life in areas like Chhattisgarh, Bundelkhand, Malwa, Gondwa, and Nimar. Jabalpur and Tikamgarh famous for statues of humans' structures and animals [Saxena \(2017\)](#). These arts and crafts are well-maintained by the locals.

- 1) **Bhil Art:** The Bhil tribe is India's second-largest tribal group. In addition, they produce bhil art. This artform is found in Madhya Pradesh, Rajasthan, Gujarat, and Maharashtra. The life of Bhils is revealed via this painting. To describe life in vivid hues, this tribe employed dots, as seen in [Figure 2a](#). They try to connect their art and paintings with their Gods, Goddesses and nature. This includes carving of the Sun, Moon, nature, Gods, etc. from natural and herbal colours on walls or paper [Khot \(2021\)](#). One can easily understand the story behind the painting.
- 2) **Gond Art:** This art, which is carved on mud walls, comes from the state of Madhya Pradesh and neighbouring states. These paintings are full of interesting details, lines, colours, and humour. These paintings are also drawn on paper, canvas, cloths etc [Bora and Sarma \(2017\)](#). In these paintings, lines, dots and dashes are important features as shown in [Figure 2b](#). These paintings are drawn during major festivals such as Holi, Diwali, etc.
- 3) **Bagh Print:** The Bagh print is a traditional hand-block printing technique practiced by the Adivasi (tribal) communities in Dhar district, Madhya Pradesh. Bagh prints are characterized by bold, repetitive geometric

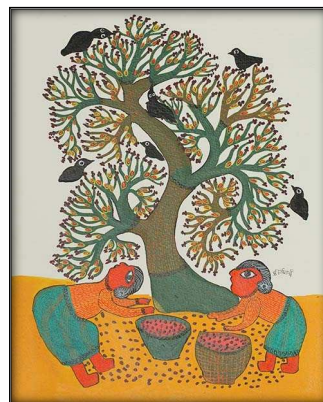
patterns and motifs as shown in [Figure 2c](#). They are primarily used in creating colorful and intricately designed textiles, including sarees, dupattas, and bedspreads.

- 4) **Dhokra Art:** Dhokra is an ancient form of metal casting practiced by tribal communities in Madhya Pradesh. It involves using the lost wax casting technique to create intricate metal artifacts, including figurines, jewelry, and home decor items as shown in [Figure 2d](#).

Figure 2



a) Bhil Art



b) Gond Art



c) Bagh Print



d) Dhokra Art

Figure 2 Tribal Art of Madhya Pradesh

1.3. TRIBAL ART OF RAJASTHAN

Some parts of western Rajasthan, particularly the areas bordering Gujarat and Madhya Pradesh, may also be considered part of Central Western India. Rajasthan's western region is renowned for its traditional textile craft, which uses a combination of textiles including cotton, silk, and wool to create stunning patterns and textures in a variety of brilliant hues.

It is well known that Rajasthan is a rich source of art, culture and craft; however, many ancient crafts and techniques related to textiles are facing challenges for their existence. Many of them are almost obsolete due to their time-consuming process of manufacturing and higher cost in the competitive market. It becomes necessary to preserve as well as promote this traditional heritage craft and make aware the people about the unique features of this printing technique [Nath and Shanti. \(2023\)](#). In West Rajasthan, particularly in regions bordering Gujarat and Madhya Pradesh, you can find various tribal art forms. Here are some of the prominent tribal art forms of West Rajasthan

- 1) **Mandana Painting:** Since the "Meenas," a Scheduled Tribe in Rajasthan, predominately practise it, it is also known as "Meena Painting." The majority of this art's creators are women, who paint almost every surface in the home that needs to be made more attractive, as seen in [Figure 3a](#). The Bhil and Shrimali Brahman communities also practise mandalas, although their colour schemes and design elements are substantially different from those used by Meenas. This artform is still widespread in Alwar, Bharatpur, Bundi Jaipur, Sawai Madhopur, and Tonk districts of Rajasthan. This artwork is referred to as "Mandala" in Nepal. In Rajasthan, it is done on both the walls and the floors, in contrast to Madhya Pradesh where it is limited to the flooring. Mandana are drawn to protect home and household from evil and welcome Gods into the house and as a mark of celebrations on festive occasions [Quazi \(2017\)](#). This art is often passed down through generations from mother/other elder females to daughters.
- 2) **Gavari Art:** Gavari is a religious festival celebrated by the Bhil and Meena tribes in Rajasthan. During this festival, intricate and colorful Gavari paintings are created on the walls of homes and temples. It is predominantly a narrative art form. Artisans are referred as "Bhopas" or "Bhopis," who are responsible for creating intricate paintings or murals that depict various episodes from the life of Lord Shiva and other deities. Gavari paintings often depict mythological scenes, deities, and stories related to the festival with usage of bold & bright colours as shown in [Figure 3b](#).
- 3) **Garasia Art:** The Garasia tribes in Rajasthan are known for their Gotrej Painting. The Garasias are expert in line and graphic drawing as shown in [Figure 3c](#). The drawing, relief, and tattoo arts may be used to classify their painting heritage. During the marriage ceremony, gotrej, or clan deities like Jaru Mata, Alu Mata, Amba Mata, etc., are painted. In addition to painting, people often decorate floors and walls at weddings and other important holidays like Holi, Deepavali, Gangour, Navaratri, etc.

Figure 3

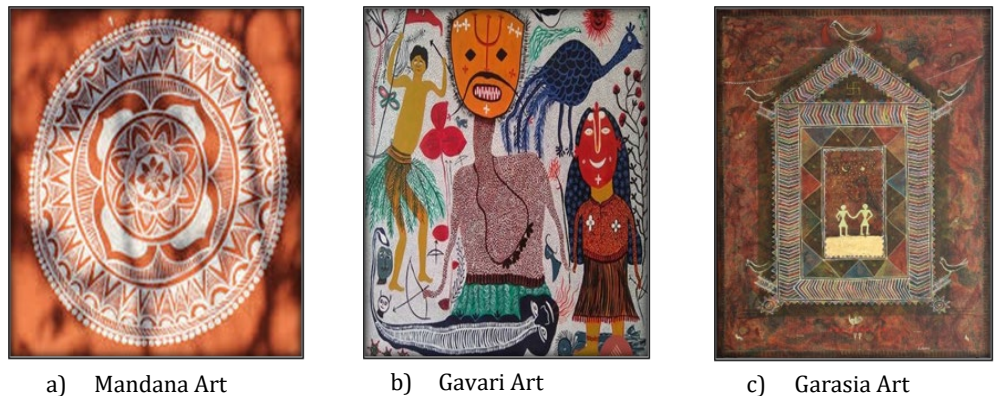


Figure 3 Tribal Art of Rajasthan

1.4. TRIBAL ART OF MAHARASHTRA

This state covers a significant portion of Central Western India and is known for its rich cultural diversity, including various tribal communities like Warli, Gondhal, Thakar, Andh, etc.

1) **Warli Art:** The Warli tribe, primarily located in the Thane district of Maharashtra, is known for its distinctive Warli art. As shown in fig 4, this art form features intricate geometric patterns, typically painted with white pigment on mud walls, representing scenes of daily life, nature, and rituals [Rao \(2022\)](#).

Figure 4



Figure 4 Tribal Art of Maharashtra

1.5. TRIBAL ART OF GUJRAT

Located to the northwest of Maharashtra, Gujarat is another key state in Central Western India with a diverse cultural heritage and a significant tribal population. It is home to several tribal communities, each with its unique art forms and cultural expressions. The tribal art of Gujarat is characterized by its vibrant colors, intricate patterns, and close ties to nature and spirituality. Here are some prominent tribal art forms of Gujarat.

Pithora Art: This art practiced among the Rathwa and Bhil tribes in Gujarat. The vibrant & colourful pithora painting are more than just beautiful figures and patterns which have enormous religious significance, and their construction entails a full ritual including music and dancing. These paintings as shown in [Figure 5a](#) typically feature depictions of deities, animals, humans, and symbols representing various aspects of tribal life and spirituality [Gandhi. \(2013\)](#). The Pithora deity, a central figure in these paintings, is believed to protect the community and ensure its well-being. Pithora paintings are known for their vibrant and colorful compositions. They often use a limited palette of bright hues, including red, yellow, blue, and green.

Mud and Mirror Work: In the Kutch region of Gujarat, tribal communities like the Rabari and Ahir are renowned for their intricate mud and mirror work as shown in [Figure 5b](#). This craft involves decorating textiles, such as clothing and home furnishings, with tiny pieces of mirror and colorful work.

Rogan Art: Rogan art is a traditional form of fabric painting practiced by the Khattris, a nomadic tribe found in both Gujarat and Rajasthan. This art form involves creating intricate, freehand patterns using castor oil-based paints. Rogan art uses specially prepared paints created by heating castor oil until it becomes viscous and dense. Pigments derived from natural sources are then mixed with the castor oil to create a range of colors [Shwetha \(2017\)](#). The artist uses a metal rod or stylus, known as "Rogan pen," to apply the paint to the fabric. The design is created directly on the fabric without any prior sketching or tracing. Rogan art is known for its intricate and complex patterns. These patterns often include floral motifs, geometric designs, peacocks, and other elements inspired by nature and tribal culture as shown in [Figure 5c](#).

Figure 5

a) Pithora Art



b) Mud or Mirror Work



c) Rogan Art

Figure 5 Tribal Art of Gujrat

The main purpose of this paper is to analyse the rich heritage of tribal art in Central Western India and to explore the potential of tribal art as a source of income and cultural preservation. This paper also emphasis to develop some designs by using digital tool such as Corel draw and to integrate the developed design into textile Product.

2. METHODOLOGY

As the study is multi-disciplinary in nature, an exploratory research design is employed. This allows for a flexible and open-ended approach for data collection and analysis. As mentioned previously, an extensive literature review is conducted to understand the existing research related to tribal art, digital tool in textile design, and the integration of the two. The present study is aimed to collect the information about the tribal art of Central Western India and their adaptation on textile through computer aided design. Bhil Tribal art practiced by Bhil community of Madhya Pradesh is selected by using purposive sampling. Data was collected from both primary and secondary sources. Interview, observation and key informant, focused group discussion were also the methods employed for data collection.

Primary data collection method is used to gather data. Various Interviews and surveys were conducted in tribal communities to gather insights into their traditional art forms, techniques, and economic needs. Bhil Art designs were collected from various sources like Tribal Museums, Magazine, books, photographs, and stickers. Fifteen motifs were selected after seeing the possibility of transforming motifs and design into other designing technique without disturbing the original colour & motif. Out of fifteen motifs collected, five motifs were selected by experts for further development of designs.

Selected tribal art motifs and patterns are adapted and modified using digital tools to create textile designs. During the process, neither the colours were changed nor the originality of the motifs to respect the cultural and artistic integrity of the original art forms. Textile prototypes featuring adapted tribal art are created using heat transfer printing. These prototypes serve as visual representations of the adapted designs. Expert review is taken for the adapted textile design to evaluate their authenticity, aesthetic appeal, and cultural sensitivity.

3. RESULT AND DISCUSSION

The motifs were evaluated by 50 respondents selected randomly which include PG students & faculty members of Design Department in the age group of 20-35. To

gather data, a structured interview schedule and a five-point Likert scale have been developed. For each motif, a Weighted Mean Score (WMS) was calculated. The motif which scores highest weighted mean score was assigned rank I. Preferred choice for selection of Bhil tribal motif is depicted in Figure 6 and Table 1. It is evident that motif no 6 got 1st rank with weighted mean score of 4.12, followed by motif no 1 which was ranked 2nd rank with weighted mean score of 4.10 and 3rd rank with Weighted mean score of 4.02 was motif no 9. The other motifs in descending order are 15(3.68), 12(3.64), 13(3.60), 2(3.56), 4(3.54), 8(3.44), 11(3.42), 10(3.40), 5(3.38), 3(3.22), 14(2.88) and the least preferred motif was motif no 07 with WMS of 2.70 at rank no 15.

Figure 6

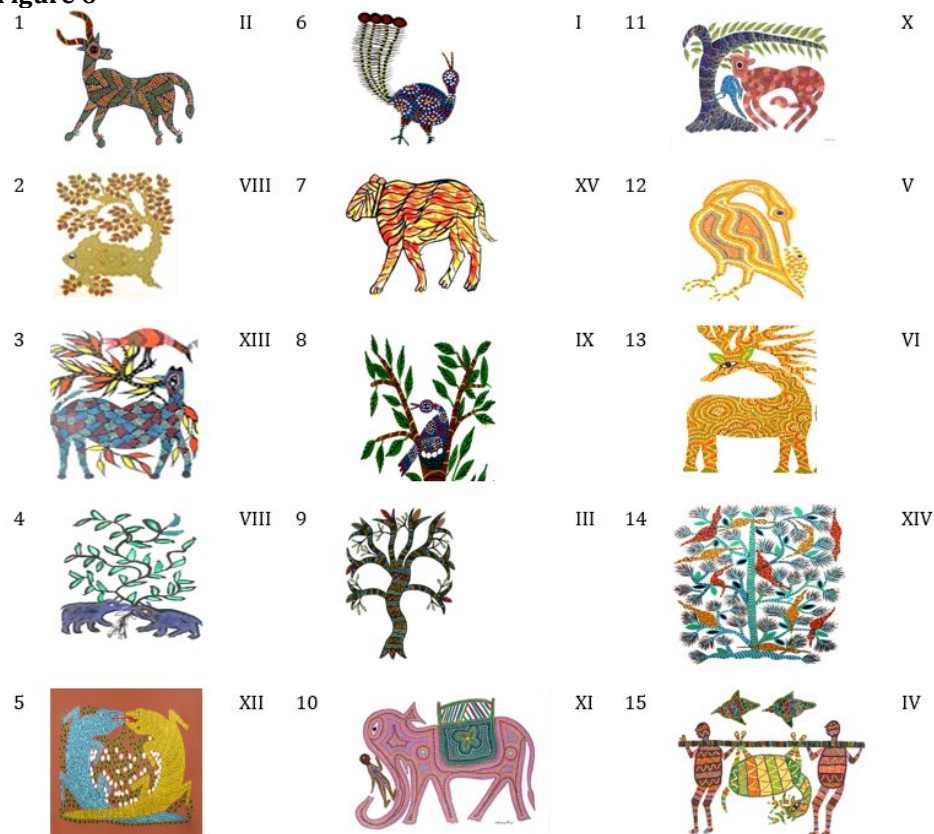


Figure 6 Collected Motifs of Bhil Art of Madhya Pradesh

Selected motifs were used on Cushion covers for further adaptation, yet other different textile product like table cover, bag, curtains, file cover etc. can also be adapted. The prepared article was then evaluated to access their acceptability & colour combinations and overall appearance using weighted mean score.

Table 1

Table 1 Experts Preferences for Selection of Motifs of Bhil Tribal Art			
Sr No	Motif No	WMS	Rank Order
1	1	4.10	2
2	2	3.56	7
3	3	3.22	13
4	4	3.54	8

5	5	3.38	12
6	6	4.12	1
7	7	2.70	15
8	8	3.44	9
9	9	4.02	3
10	10	3.40	11
11	11	3.42	10
12	12	3.64	5
13	13	3.60	6
14	14	2.88	14
15	15	3.68	4

Top five motifs were selected i.e motif no 6,1, 9,15 and 12 according to experts' choice for further work based on their weighted mean score.

2.1. DEVELOPMENT OF DESIGN FOR BHIL TRIBAL ART FROM SELECTED MOTIFS

Figure 7
















Sr No	Motif No	Original Motif	Developed Designs of Bhil art for Cushion cover	
			Design (A)	Design (B)
1	6			
2	1			
3	9			
4	15			
5	12			

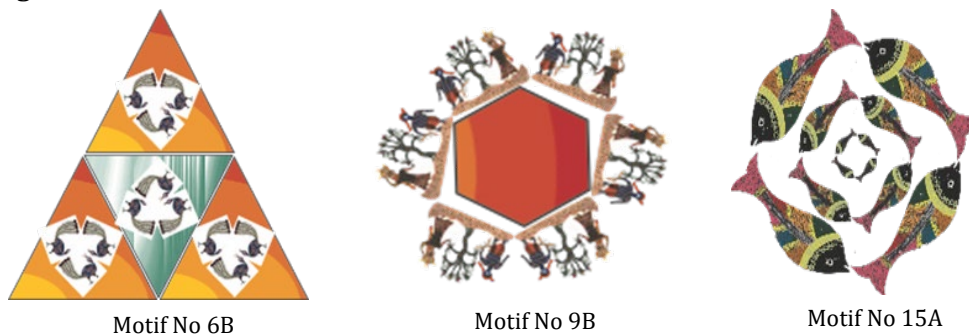
Figure 7 Developed Designs of Bhil Art for Cushion Cover

Two designs were developed from each selected motif of Bhil art which were named as A & B. A total of ten motifs were developed using vector based digital tool like Corel draw and are presented in Figure 7 for cushion cover. These prepared design arrangements were also evaluated by a panel of 50 respondents selected randomly. Weighted mean score was calculated for each design arrangements.

Table 2

Table 2 Experts Preferences for Developed Designs of Bhil Art for Cushion Cover					
Sr No	Motif No	WMS (A)	Rank (A)	WMS (B)	Rank (B)
1	6	3.08	X	3.88	I
2	1	3.1	IX	3.3	VIII
3	9	3.54	IV	3.6	II
4	15	3.56	III	3.48	V
5	12	3.42	VI	3.32	VII

Preferred choice for selection of developed designs out of 5 base motifs of Bhil art for cushion cover is depicted in Table 2. Motif No 6 (B) got 1st rank with weighted mean score of 3.88 followed by motif no 9(B) which got rank II with WMS of 3.6 and the 3rd rank was achieved by motif no 15(A) with WMS of 3.56. The other motifs in descending order are 9A (3.54), 15B (3.48), 12A (3.42), 12B (3.32), 1B (3.3), 1A (3.1) and the least preferred motif was motif no 6A with WMS of 3.08 at rank no 10. Top three selected designs for printing on cushion cover are motif no 6B, 9B and 15A as shown in Figure 8.

Figure 8**Figure 8** Selected Top Three Designs of Bhil Art for Cushion cover

Finally, the top three selected motifs of Bhil art are printed on a 16/16 cushion cover using heat transfer printing Machine. The peacock design (6B) was used in centre of cushion with mirror & brick repeat to form an attractive design. The human design (9B) was also adapted with straight diagonal repeat. The fish design (15 A) was adapted in centre of cushion cover along with geometric patterns for border design using heat transfer printing technique on cushion cover as shown in Figure 9.

Figure 9**Figure 9** Placement of Selected Motif on Cushion Cover

These design placement of cushion cover were also evaluated by a panel of 50 respondents. Weighted mean score was calculated for each design arrangements as shown in [Figure 9](#) and [Table 3](#).

Table 3

Table 3 Experts Preferences for Placement of Designs of Bhil Art on Cushion Cover			
Sr No	Design No	WMS	Rank Order
1	1	3.7	1
2	2	3.34	2
3	3	2.92	3

As it can be seen from [Table 3](#) that the among the three designs prepared for cushion cover, design 1 is the most preferred article design by respondents with respect to the overall appeal with weighted mean score of 3.7 The second preferred design was Design 2 with weighted mean score of 3.34 and the least preferred design was Design 3 with weighted mean score of 2.92.

4. CONCLUSION

The adaptation of tribal art from Central Western India for the development of textile products digital tools represents a harmonious fusion of tradition and technology, with immense potential for cultural preservation and economic development. This endeavour has not only enabled the preservation of rich indigenous art forms but has also opened new avenues for sustainable livelihoods and economic growth for tribal communities.

Variety of creative designs can be created by using digital tool like Corel draw which will add creativity and make the process more efficient. The motifs explored for Bhil art were highly acceptable for cushion covers and can also be printed on other textile articles.

CONFLICT OF INTERESTS

None.

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None.

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