

Bridging Tradition and Modernity: Mandana-Inspired Digital Prints on Kota Doria for Men's Kurta and Turban

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Abstract: Blending traditional crafts with contemporary fashion provides a meaningful way to protect intangible cultural heritage while encouraging creative innovation. This study explores the digital adaptation of Mandana motifs—a ritual floor and wall art native to Rajasthan—onto Kota Doria fabric to design culturally inspired and visually appealing men's kurtas and turbans. Mandana art, distinguished by its symmetrical geometric patterns drawn with *geru* (red ochre) and *khadiya* (rice paste), is rapidly diminishing under the impact of urbanization. At the same time, Kota Doria—a fine, translucent handwoven fabric—faces its own set of challenges, including the lack of distinctive local motifs and a restricted product range primarily focused on women's sarees and dupattas.

Authentic Mandana motifs were collected through qualitative field research conducted in the Tonk, Bundi, and Sawai Madhopur districts of Rajasthan. These motifs were then digitized using Adobe Photoshop to build a structured motif bank. A total of twenty digital prototypes (ten kurtas and ten turbans) were developed, experimenting with different motif placements and color combinations inspired by traditional Mandana hues of *geru* and *khadiya*. Through quantitative surveys, 100 respondents evaluated these prototypes, and the top three designs from each category were selected for digital printing on Kota Doria fabric. A second survey with 300 respondents assessed the final products on cultural significance, wearability, design appeal, and market potential.

The results revealed a strong positive response to the digitally reinterpreted Mandana motifs in men's fashion. The study successfully revived forgotten product lines like turbans and introduced new categories such as men's kurtas. Adopting a mixed-method approach (qualitative and quantitative), this research illustrates how digital technology can seamlessly connect tradition with modern fashion, promoting cultural preservation and expanding market opportunities for heritage crafts.

Keywords: *Mandana motifs; Kota Doria; Digital printing; Cultural heritage; Men's wear; Mixed-method research; Design innovation*

Objectives of the Study

1. To document and reinterpret authentic Mandana motifs from selected regions of Rajasthan for contemporary textile applications.
2. To digitize and adapt these motifs into a structured design bank suitable for Kota Doria fabric.
3. To apply digital printing techniques to develop men's kurtas and turbans, thereby diversifying Kota Doria's product range.
4. To assess the cultural relevance, design appeal, and market potential of the developed products through stakeholder evaluation.
5. To examine how design-led innovation can aid in cultural heritage preservation while creating new opportunities for artisans and weavers.

Scope of the Study

This study investigates the integration of Mandana motifs with Kota Doria fabric through digital textile printing to create culturally rooted men's kurtas and turbans. Kota Doria originally evolved as a fabric for turbans, but over time, its production shifted predominantly to sarees and women's garments, leaving men's wear largely absent. Field observations and data collected from Kaithoon—the main center of authentic Kota Doria production—confirm that there is no existing line of men's apparel, and weavers have historically not designed men's kurtas so far. By introducing kurtas as a completely new product category and reviving turbans, this research aims to diversify Kota Doria's product range.

The study encompasses motif documentation, digital adaptation, prototype development, and product evaluation through structured stakeholder feedback. Digital textile printing is highlighted as a sustainable and scalable method, enabling the adaptation of traditional Mandana motifs while respecting the delicate character of Kota Doria. The research also examines cultural relevance, aesthetic appeal, and market potential, positioning Mandana-Kota Doria products strategically within the contemporary men's ethnic wear segment. Overall, it demonstrates how traditional craft knowledge can be combined with modern design approaches to create innovative, culturally meaningful, and market-relevant products.

Significance of the Study

This study is significant for both cultural preservation and design innovation by integrating Mandana motifs—an endangered folk art of Rajasthan—with Kota Doria fabric. Traditionally, Kota Doria lacks its own distinct motifs, often borrowing designs from other sarees such as Paithani and Banarasi. By adapting Mandana motifs, the research gives Kota Doria a unique identity and strengthens its cultural authenticity.

By introducing kurtas and reviving turbans, the research expands Kota Doria's traditionally women-centric product range, offering new market opportunities for weavers and artisans. It also highlights the mutual support between two Rajasthani crafts and demonstrates how traditional motifs and weaving techniques can be creatively integrated to appeal to contemporary consumers. The study emphasizes the role of design-led innovation in sustainable craft revival, product diversification, and enhancing both the economic and cultural value of heritage textiles.

1. Introduction

India's rich textile and folk art heritage reflects centuries of cultural exchange, regional identity, and artisanal excellence. However, many traditional crafts are facing challenges due to industrialization, changing consumer preferences, and diminishing artisan engagement. This study focuses on Mandana art and Kota Doria weaving—two significant yet vulnerable traditions of Rajasthan—and explores their fusion through contemporary design interventions to ensure cultural preservation and market relevance.

1.1 Mandana Art

Mandana art is one of India's oldest tribal wall and floor decoration traditions, deeply embedded in the cultural landscape of Rajasthan and Madhya Pradesh. Practised mainly by the Meena community, the term *Mandana* is derived from *Mandan*, meaning adornment, reflecting its role in beautifying homes and sacred spaces (Mallick & Ganapathy, 2017). Beyond its decorative function, Mandana carries profound ritualistic and spiritual significance—its motifs are believed to ward off evil and invoke divine blessings.

Mandana painting is intrinsically tied to religious festivals, communal rituals, and life-cycle events such as marriages, childbirth, and harvest celebrations, serving both as a spiritual offering and a cultural expression. Designs are traditionally created using white chalk or rice paste on red geru (ochre) surfaces, a combination that symbolizes purity, fertility, and cosmic harmony (Wolf & Meena, 2008; Bhatt, 1980–1981). According to art historian Stephen P. Huyler, these designs function as sacred diagrams enclosed within defined frames, intended to attract divine attention and blessings (Huyler, 1994).

Women are the primary custodians of this tradition, especially in Sawai Madhopur, where Mandana plays a central role in festivals like Holi, Diwali, Gangaur, Ahoi Ashtami etc. (Tadvalkar, 2020). The art form is transmitted through oral tradition and observation, with young girls learning by watching their mothers. The painting process often becomes a collective rhythmic ritual, accompanied by folk songs that echo seasonal rhythms, agricultural cycles, and personal emotions, enriching its spiritual dimension (Wolf & Meena, 2008; Mishra, 2020).

Mandana motifs include geometric patterns, flora, fauna, religious symbols, and cosmic diagrams, such as swastikas, lotus flowers, chowks, footprints, and chakras, each carrying specific cultural meanings related to fertility, protection, and cosmic order (Dutta, 2011; Sharma, 2017). Color symbolism is integral: white represents divinity and purity, while red ochre embodies vitality and auspiciousness, sometimes complemented by natural yellows and greens (Wolf & Meena, 2008; Bagchi & Chaudhuri, 2015).

Historically, Mandana has been preserved through intergenerational practice within the Meena and Bhil tribes, each contributing unique stylistic features (Bagchi & Chaudhuri, 2015). However, modernization and urbanization have led to its gradual decline. The shift from mud houses to concrete structures has reduced suitable surfaces for painting, while younger generations are increasingly detached from rural traditions (One2All, 2019).

Despite these challenges, Mandana continues to adapt and evolve. Its motifs are beginning to find expression in textiles, home décor, and other lifestyle products; however, this exploration remains quite limited, leaving much of their potential for cultural continuity and contemporary relevance untapped. This adaptability underscores Mandana's enduring role as a living cultural heritage that bridges the past and present.

1.2 Kota Doria

Kota Doria, one of Rajasthan's most esteemed handloom textiles, is renowned for its lightweight, airy texture and distinctive *khat* (checkered) pattern. Originating from the Hadoti region, Kaithoon near Kota has long served as the primary weaving center, where generations of Ansari weavers have preserved this craft (Marthuwar, 2024). The term *Doria*, meaning “threads,” reflects the intricate technique that combines fine cotton and silk yarns, resulting in a fabric that is both delicate and durable.

The craft was introduced to Rajasthan from Mysore in the 17th century, when rulers like Maharaja Kishore Singh and Maharaja Bhim Singh invited skilled Mysore weavers to settle in the region, blending Mysore silk weaving methods with local techniques (Amarnath, 2021; Hada & Kumar, 2014). Woven on pit looms using a throw shuttle method, Kota Doria features uniform square patterns formed by alternating silk and cotton threads. Female artisans play a key role in passing on weaving skills, maintaining the craft while contributing to household incomes (Adhikari, 2018).

Initially crafted for royal turbans, Kota Doria gradually became popular for sarees, dress materials, and dupattas due to its breathable quality and suitability for hot climates (Hada & Kumar, 2014). Recognizing its cultural and economic significance, the fabric was granted Geographical Indication (GI) status in 2005, safeguarding its authenticity under the Geographical Registration Act (Biswas & Kapil, 2010).

This sector now faces challenges from machine-made imitations, counterfeit products, limited market access, and a declining artisan base (Chaturvedi & Malik, 2018). Nevertheless, designers and weavers are revitalizing Kota Doria through innovative motifs, vibrant color palettes, yarn blends, and modern weaving and printing techniques, expanding its application to contemporary apparel and home décor. Sustainable innovations, such as incorporating bamboo fibers, preserve its traditional lightness while addressing environmental concerns (Luniya and Agarwal, 2012 ; Jain & Singh, 2011).

Historically, Kota Doria sarees featured white or off-white bases with Sanganeri motifs and defined borders. Today, the craft embraces bold colors, zari embellishments, modern prints, and reinterpreted motifs, ensuring its relevance in contemporary fashion (Direct Create Community, 2016). Its enduring craftsmanship and aesthetic appeal continue to position Kota Doria as a premium, sustainable handloom textile.

2. Literature review

The literature review forms the conceptual backbone of this study, outlining key developments, challenges, and innovations relevant to the integration of traditional art forms with contemporary textile practices. It explores previous research to understand the cultural importance of traditional crafts and how modern technologies are creating new possibilities for their preservation, innovation, and wider use. The review is structured around three key themes: *Sustainability Challenges and Revival of Folk Arts*, which explores the decline of traditional practices and efforts to preserve them; *Challenges, Innovations, and Emerging Trends in the Handloom Sector*, focusing on evolving production techniques, market shifts, and design interventions; and *Adaptation of Folk Art and Craft in Contemporary Textiles*, which investigates how heritage motifs are being reinterpreted through digital tools and modern aesthetics. Collectively, these sections provide the critical context for understanding the fusion of Mandana motifs with Kota Doria fabric.

2.1 Sustainability Challenges and Revival of Folk Arts

Traditional crafts such as Mandana art and handloom weaving are facing increasing sustainability pressures due to rapid industrialization, changing consumer preferences, and the gradual disengagement of artisan communities. Scholars emphasize that digital technology and innovative design interventions have become powerful tools to bridge the gap between heritage traditions and contemporary markets.

Choudhary and Pargai (2023) demonstrated that digitally reinterpreting tribal motifs for use in modern textiles not only contributes to cultural preservation but also generates new livelihood opportunities for artisans. Their work highlights how digital technologies can support sustainable design while opening commercial avenues. Sharma & Paul (2015), similarly observed that Computer-Aided Design (CAD) has transformed the adaptation of traditional motifs by enhancing design efficiency and broadening their application in contemporary textile products.

Further studies support the potential of new media and printing techniques in revitalizing traditional arts. Sachwani (2021) illustrated how folk paintings could be effectively integrated into textiles through digital and screen printing to maintain authenticity while appealing to current markets. Kolay (2016) advocated the use of digital platforms and media technologies to make fading art forms more engaging for younger audiences. Together, these studies emphasize that digital adaptation and strategic design approaches are essential for sustaining folk traditions like Mandana in India's evolving textile and fashion ecosystem.

2.2 Challenges, Innovations, and Emerging Trends in the Handloom Sector

The Indian handloom industry continues to grapple with significant challenges, including competition from power looms, declining skilled labour, limited design innovation, and weak marketing linkages. Researchers underline that the resilience of this sector depends on combining traditional craftsmanship with modern technology, innovative design, and sustainable business strategies.

Kota Doria, one of Rajasthan's most celebrated handloom textiles, has received scholarly attention for both its heritage value and its present-day struggles. Chaturvedi & Malik (2018) examined the socio-economic vulnerabilities of weavers in Kaithoon, Kota Doria cluster, reporting low incomes, insufficient welfare measures, and poor living conditions. Athalye and Bhatia (2018) traced Kota Doria's historical evolution and global reach, noting that while GI status increased visibility, it did not address core structural problems. Similarly, (Biswas & Kapil, 2010) highlighted the detrimental impact of cheap power loom replicas, weak IP enforcement, and exploitative value chains, which have reduced the number of active weavers despite GI protection.

Researchers have proposed various strategies to address these concerns. Chaudhary and Pant (2016) experimented with bamboo-silk yarn blends and advanced weaving techniques using CAD to create sustainable, marketable prototypes. Srivastava (2016) evaluated the effect of GI tagging on women weavers, concluding that GI improved buyer confidence but required stronger enforcement and marketing for real impact. Fernandez (2010), Malik & Chaturvedi (2018) drew

attention to the lack of systematic design cataloguing and CAD use, while Gupta (2005) identified limited product diversification as a persistent limitation.

Some studies also document successful interventions. Luniya and Agarwal (2012) presented innovations in yarns and motifs that rejuvenated Kota Doria sarees without altering the signature khat (checked) pattern. Pramanik, Anand, Jha, & Basu, (2024) warned that mechanization threatens traditional weaving, while Gera and Jain (2019) noted that outdated techniques and financial constraints continue to hinder growth. Hybrid approaches such as those by Babel and Yadav (2011) - combining block printing with computerized embroidery— produced contemporary saree designs that received strong consumer responses, illustrating the potential of blending heritage methods with modern aesthetics.

Research on other handloom traditions across India echoes similar concerns and highlights shared pathways for revival. Ahmed, Sheereen, & Rahman (2024), found critical deficits in modern tools (82.7%), skill development (89.4%), and awareness of government schemes (27.9%) among silk handloom clusters in Uttar Pradesh, limiting productivity and innovation. Chaturvedi & Malik, (2018) documented socio-economic distress among Ansari weavers caused by inadequate state support and power loom competition at Kaithoon.

Technological innovation has been a major enabler. (Bowonder & Sailesh, n.d.) demonstrated that computerized Jacquard borders in Kanchipuram silk improved design complexity while preserving cultural integrity. Katiyar (2009) highlighted CAD as a catalyst for enhancing efficiency and creativity in saree design. Marketing remains another key issue: Chaturvedi & Malik, (2018) noted the dominance of middlemen and weak promotional systems in Kaithoon, while Nair & Kinslin (2016) reported low consumer awareness of handloom certification marks despite high recognition of the products themselves.

Several studies also explore innovative design and marketing strategies. Gayen, Banik, and Patnaik (2017) introduced new motifs and Jamdani weaving techniques in Shantiniketan, empowering women artisans and widening markets. Ranavaade (2022) positioned handloom textiles within the slow fashion movement through digital engagement and design interventions. (Humbe, 2023) highlighted how e-commerce connects traditional weaving clusters with global markets, and Sharma, Karmakar, and Chakrabarti (2017) identified rural tourism as a sustainable means of supporting industries like Salkuchi. Collectively, these studies indicate that technology adoption, skill enhancement, design innovation, and marketing strategies are critical for sustaining India's diverse handloom traditions.

2.3 Adaptation of Folk Art and Craft in Contemporary Textiles

The adaptation of folk art into contemporary textiles reflects a growing consumer preference for culturally rooted yet modern products. This trend enables the preservation of traditional knowledge while expanding market reach through innovative design. Techniques such as block printing, embroidery, weaving, and digital printing are being applied to reinterpret folk motifs within modern fashion and lifestyle contexts.

Mandana motifs, in particular, have demonstrated strong adaptability. Babel and Panwar (2019) integrated these motifs into Rajputi Poshaaks using block printing, receiving positive consumer feedback. Sharma, Fatima, & Grover (2010) applied Mandana designs to Western garments through CAD, screen printing, and embroidery, revealing their potential in modern apparel. Soni (2020) experimented with Mandana-inspired motifs on eco-friendly handbags using fabric painting and Katha embroidery, which were well received by urban female consumers. These examples show how Mandana art can be effectively translated into new formats, supporting both cultural revival and commercial success.

Parallel developments in other folk traditions reinforce this potential. Devi and Srivastava (2011) adapted Meitei motifs for sarees; Sharma, Singh, and Rose (2016) digitized traditional designs for appliqué and embroidery; Bajpai, Karolia, & Pandya, (2015) incorporated Chowkpurana patterns into Varanasi brocades to appeal to younger buyers; and Gupta and Gangwar (2016) used Madhubani motifs in home furnishings to positive consumer response. International studies, such as those by Angelova and Mladenova (2016) on Bulgarian carpets and Acquaye et al. (2018) on West African symbols, further demonstrate the global relevance of integrating traditional motifs into contemporary products. Technological tools have played a key role in this adaptation. Kala and Babel (2018) digitally transformed Rajasthani motifs into stylized forms, while (Sharma, Paul, & Sheikh, 2014) applied Madhubani and Warli designs through digital printing to create vibrant apparel.

These studies underline that strategic design and digital technologies can both preserve intangible cultural heritage and increase the market appeal of traditional crafts. Applying such methods to Mandana motifs on Kota Doria fabric can offer a promising pathway for reviving Rajasthan's folk art while positioning it within contemporary fashion and textile markets.

2.4 Research Gap

Existing literature offers important perspectives on digitization, handloom diversification, and the adaptation of folk arts into modern design. However, focused research on the fusion of Mandana motifs with Kota Doria fabric, particularly in the context of men's wear, remains scarce.

Although both Mandana art and Kota Doria weaving have deep cultural roots and distinctive histories, the intersection of the two traditions has not been adequately studied. A closer review of the literature highlights several gaps:

- **Lack of distinctive design identity:** Contemporary Kota Doria motifs are largely adapted from Banarasi and Paithani traditions, resulting in limited representation of Rajasthan's own visual culture.

- **Gender-skewed product development:** Kota Doria is predominantly used for women's garments such as sarees and dupattas, with almost zero exploration into men's apparel despite growing market demand.
- **Underutilization of Mandana in textiles:** While Mandana motifs are occasionally seen in home décor or accessories, their structured integration into handloom fabrics, particularly apparel, is still unexplored.
- **Lack of digital innovation:** Traditional surface techniques like zari, block printing, and tie-dye are well documented on Kota Doria, but digital printing—which offers design precision and scalability—remains largely unexplored.

These gaps highlight a clear research opportunity to digitally reinterpret Mandana motifs on Kota Doria fabric creating an innovative product line for men's kurtas and turbans. This approach blends cultural revival with modern production techniques, fostering both design distinctiveness and market diversification.

2.5 Rationale for Integrating Mandana Motifs with Kota Doria

The integration of Mandana motifs with Kota Doria is driven by cultural preservation, aesthetic enhancement, and commercial potential. Culturally, it ensures the revival of a fading folk art by shifting its canvas from walls and floors to wearable textiles, securing its survival in contemporary contexts. Aesthetically, it provides Kota Doria with its own regional design vocabulary, moving beyond borrowed motifs and reinforcing its unique Rajasthani identity. From a market perspective, this initiative expands Kota Doria's application into men's ethnic wear, an underexplored segment with strong growth potential. Through digital printing, Mandana motifs can be adapted with precision and creativity, resulting in garments that are visually compelling, culturally rooted, and market-relevant. This fusion represents a meaningful synergy between two heritage crafts, positioning them within contemporary fashion while safeguarding their legacy for future generations.

Aligned with the government's One District One Product Scheme, this study aims to give Kota Doria a distinct regional identity by creating its own signature motif vocabulary through Mandana designs. In doing so, it transforms Kota Doria into a heritage product that authentically reflects Rajasthan's cultural richness, reduces reliance on borrowed motifs from other weaving traditions, and contributes to the promotion of region-specific crafts in modern markets.

3. Research Methodology

The study employs a qualitative and design-led research framework integrating field-based cultural documentation with experimental textile development. The qualitative component focused on collecting and interpreting first-hand data on Mandana motifs and Kota Doria weaving practices, while the design-led component addressed motif digitization, layout planning, and digital printing to enable product innovation.

Both primary and secondary data sources were employed. Secondary data were gathered from books, research papers, articles, magazines, and online sources to develop a comprehensive understanding of the history, techniques, and contemporary trends related to Mandana art and Kota Doria textiles. Fieldwork was conducted in culturally significant regions of Rajasthan, selected for their enduring association with Mandana art and Kota Doria weaving. To document authentic Mandana motifs, villages in Kota, Bundi, and Sawai Madhopur were visited, as these areas continue to practice the art on walls and floors during rituals and festivals. These locations offered rich visual and cultural references, crucial for capturing motifs in their original context. For Kota Doria, Kaithoon was chosen as the primary weaving cluster due to its continued presence of skilled weavers and its role as a living center of this handloom craft. These sites were selected intentionally for their accessibility to practitioners who maintain traditional knowledge, ensuring an in-depth understanding of both crafts.

Primary data collection involved direct documentation of Mandana motifs through observation, structured questionnaires, and photographs, complemented by in-depth interviews with 30 respondents. For Kota Doria, 50 respondents—including master weavers, weavers, and local designers/graphers—were interviewed to identify challenges in sustaining the craft and to gather insights on improving product design, sales, packaging, branding, and market reach.

By combining ethnographic documentation with experimental design practices, this methodology enabled the integration of Mandana motifs into digitally printed Kota Doria textiles, bridging traditional craftsmanship with contemporary men's fashion and market-oriented design.

4. Sampling and Evaluation Strategy

A purposive sampling approach was adopted to ensure the inclusion of participants, motifs, and evaluators that collectively represented both cultural authenticity and contemporary design relevance. Authentic Mandana motifs were carefully selected based on clarity, cultural significance, and suitability for adaptation onto textile surfaces. Practicing artisans and weavers were identified through local networks in Kota, Bundi, Sawai Madhopur, and Kaithoon—regions renowned for preserving traditional Mandana art and Kota Doria weaving. Additionally, designers, academicians, and consumers were engaged as evaluators to provide informed perspectives on design aesthetics, usability, and cultural resonance.

The evaluation process comprised two sequential stages. In the first stage, ten digital prototypes each for men's kurtas and turbans were assessed on parameters including aesthetic appeal, motif placement, and overall design appropriateness.

Feedback from this stage facilitated the selection of the top three designs per category, which were subsequently digitally printed on Kota Doria fabric. The second stage involved assessing the market potential of the finalized products, considering wearability, cultural relevance, consumer preferences, and purchase intent. This structured strategy ensured a rigorous and comprehensive evaluation of both design integrity and market feasibility while preserving the cultural and textile heritage embedded in the motifs.

5. Design Development, Prototype Evaluation, and Market Assessment

This section provides a comprehensive account of the design intervention carried out to integrate traditional Mandana motifs with Kota Doria fabric for the creation of contemporary men's apparel. The intervention involved a multi-stage process that included detailed field documentation, digital translation of hand-drawn/ photographed motifs, prototype development, and two structured rounds of evaluation to refine the designs. The primary aim of this exercise was to revive Mandana folk art by transferring it onto a wearable medium, while simultaneously broadening the design vocabulary and product range of Kota Doria beyond its conventional association with women's sarees. This approach sought to create garments that are culturally resonant, visually appealing, and commercially viable.

Field visits to Kaithoon, the principal weaving hub for Kota Doria, provided invaluable insights into the current design practices, production methods, and operational constraints of the cluster. Conversations and hands-on interactions with master weavers revealed that digital printing technology has not yet been integrated into their workflow. The cluster continues to rely predominantly on traditional handloom weaving and block printing techniques, with a strong focus on producing women's sarees. There is currently little to no exploration of men's garments or alternative product categories within the local production ecosystem.

The below figure presents photographs captured during these field visits, illustrating the current design and production processes observed among local weavers



Fig 1: Photographs showcasing the current design practices observed during field visits

Visual analysis of these field photographs indicated that the motifs currently in use are bold, dense, and visually heavy, often creating a mismatch with Kota Doria's lightweight and translucent character. The color combinations were observed to be inharmorous—bright, brocade-like shades that appear overpowering on the subtle base of Kota Doria. The borders, typically measuring 9–12 inches in width, dominate the delicate fabric body, diminishing its understated elegance. The motifs and color palettes bear close resemblance to Banarasi and Paithani sarees, thereby lacking a distinctive regional identity. While floral, figurative, and jaal (all-over) designs predominate, geometric and abstract motifs appear only sparingly in border patterns. This repetition and external borrowing have resulted in a dilution of local aesthetics, rendering the products less appealing to younger consumers who perceive them as ornate and outdated. The observations underscore the need for design innovation rooted in regional culture and heritage.

To address these identified gaps, twenty digital prototypes were developed—ten for men's kurtas and ten for turbans—using Adobe Photoshop and Illustrator. Each design sought to reinterpret Mandana motifs in a manner that was culturally authentic yet technically adaptable to Kota Doria's weave structure. The color palette drew inspiration from traditional Mandana art, especially the earthy tones of geru (red ochre) and khadiya (milky white). This was extended to include both vibrant hues reminiscent of freshly drawn Mandana motifs and muted shades echoing aged, weathered surfaces. Subtle textural variations were also explored to reflect the rustic charm of regional plastered walls. Careful harmonization ensured that the colors enhanced, rather than overpowered, Kota Doria's translucent base. Each design was systematically coded for effective reference during evaluation:

- Men's Kurtas: MKDK01–MKDK10
- Turbans: MKDT01–MKDT10

Here, **MKD** represents *Mandana Kota Doria* (common for the entire product range), **K** denotes *Kurta* (for all ten kurta designs), **T** denotes *Turban* (for all ten turban designs), and **01–10** indicates the numeric series assigned to each design. The Mandana motifs were collected through extensive fieldwork in the villages of Tonk, Bundi, and Sawai Madhopur, where artisans continue to practice this traditional art. The below figure presents visuals of the researcher's interactions with Mandana artists during these visits.



Fig 2: Photographs showing the researcher interacting with mandana artists during field visits.

The motifs—ranging from geometric and floral to ritualistic—were digitized into high-resolution files while maintaining their original proportions and details. Each motif's regional name and symbolic significance were recorded to preserve cultural integrity during adaptation. The table below shows examples of the documented motifs, including both their original and digitized versions, along with their categories and local names. It combines photographs taken during field visits with some images from Kothari (2013), as a few Mandana motifs were worn out in the field and needed to be referenced from the book for clarity.

Sr. No.	Detail	Original Design	Adapted Design	Category
1	Sathiya			Religious
2	Sravan			Religious
3	Sun			Religious
4	Chakri			Religious
5	Phool Ka Chowk			Geometric Flora
6	Phool Ka Chowk			Geometric Flora
7	Phool Ka Chowk			Geometric Flora
8	Bawadi			Geometric
9	Phuladiya			Geometric

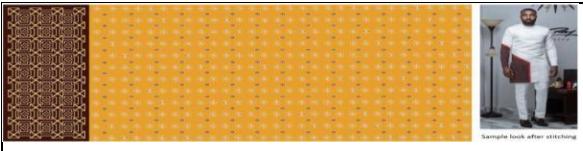
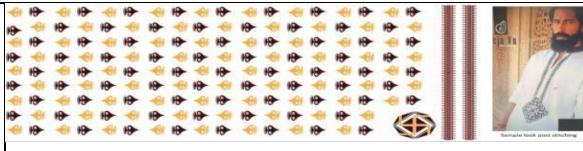
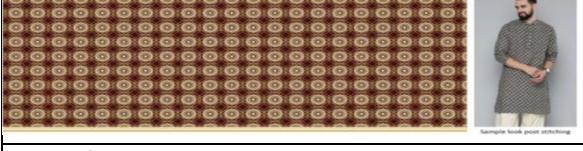
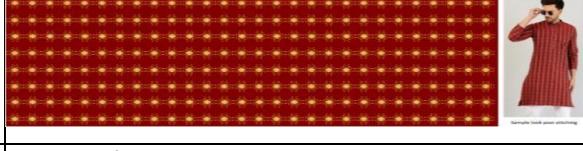
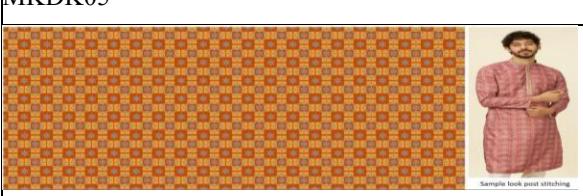
10	Bel			Organic- Flora
11	Paan Patta			Organic- Fauna
12	Paan Patta			Organic- Fauna
13	Cheeran			Geometric
14	Bharan			Geometric
15	Shakkarpura			Geometric

Table 1: Images showing original motifs, their digitized versions, categories, and regional/local names.

The above table demonstrates the diversity and symbolic depth of Mandana motifs, emphasizing their suitability for adaptation across geometric, organic, and ritual design categories. In adapting these motifs for apparel design, thoughtful modifications were made in terms of scale, repetition, orientation, and placement to achieve both aesthetic balance and functional relevance.

For kurtas, motifs were strategically positioned on yokes, borders, and central panels, while running patterns were designed to create cohesive surfaces. In turbans, continuous and alternating repeats ensured a rhythmic visual flow along the fabric length.

The below tables present the digitally developed prototypes for men's kurtas and turbans, with their designs and placements illustrated below.

	
MKDK01	MKDK02
	
MKDK03	MKDK04
	
MKDK05	MKDK06
	
MKDK07	MKDK08

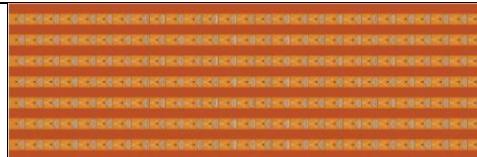
	
MKDK09	MKDK10

Table 2: Digitally developed kurta prototypes.

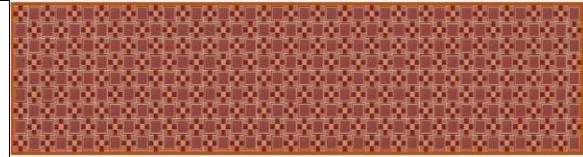
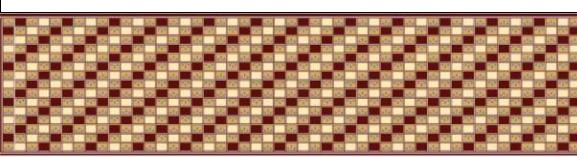
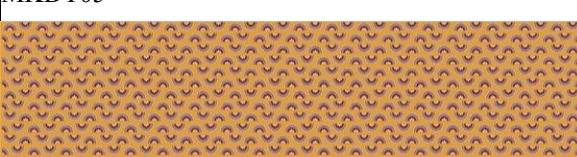
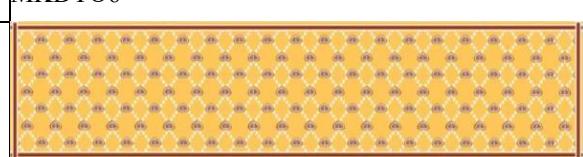
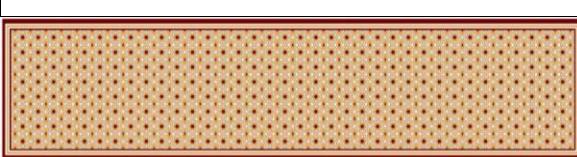
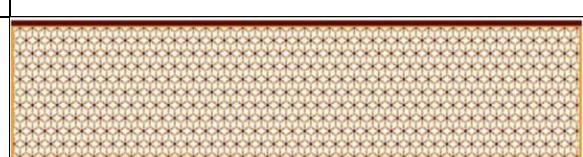
	
MKDT01	MKDT02
	
MKDT03	MKDT04
	
MKDT05	MKDT06
	
MKDT07	MKDT08
	
MKDT09	MKDT10

Table 3: Digitally developed turban prototypes.

It can be seen from the above table how Mandana motifs were adapted into continuous surface repeats to complement the linear drape of turbans. Following prototype development, the first round of evaluation was conducted with 100 respondents, including designers, academicians, textile professionals, and informed consumers. Using a five-point scale (1 = poor, 5 = excellent), participants assessed each design based on motif selection, placement, color harmony, uniqueness, and overall appeal. The below table presents a summary of average scores and rankings for all designs.

Kurta Code	Score	Rank	Turban Code	Score	Rank
MKDK01	1884	4 TH	MKDT01	1906	1 ST
MKDK02	1835	8 TH	MKDT02	1840	6 TH
MKDK03	1897	2 ND	MKDT03	1800	9 TH
MKDK04	1894	3 RD	MKDT04	1809	8 TH
MKDK05	1822	9 TH	MKDT05	1817	7 TH
MKDK06	1882	5 TH	MKDT06	1901	2 ND
MKDK07	1802	10 TH	MKDT07	1797	10 TH

MKDK08	1847	7 TH		MKDT08	1867	5 TH
MKDK09	1917	1 ST		MKDT09	1880	3 RD
MKDK10	1872	6 TH		MKDT10	1877	4 TH

Table 4: Prototype evaluation summary table with average scores for each design.

The above table highlights the top-performing designs based on cumulative scores — MKDK09, MKDK03, and MKDK04 among kurtas, and MKDT01, MKDT06, and MKDT09 among turbans—selected for digital printing.

Based on these results, the six top-ranked designs were digitally printed on authentic Kota Doria fabric sourced from the Rajasthan State Handloom Development Corporation, Jaipur. As Kota Doria is traditionally woven in saree lengths, these lengths were creatively repurposed for the construction of kurtas and turbans. Printing was executed at Geeta Fabs Pvt. Ltd., Gurugram, ensuring clarity, precision, and color durability. The below photograph shows the researcher observing the process of digital printing on fabric using a textile printing machine.



Fig. 3: Top six designs selected from the first evaluation undergoing digital printing.

After printing, the fabrics were professionally finished, tailored into garments, and photographed to showcase the final digitally printed kurtas and turbans, which are presented below on mannequins.



Fig 4: Display of final digitally printed kurtas and turbans on mannequins during

A second evaluation round was conducted to assess market potential and consumer acceptance of the printed prototypes. This phase included 300 respondents, comprising respondents from 1st phase of survey along with weavers, Mandana artisans, designers, boutique owners, educators, industry experts, etc. Respondents evaluated the garments on aesthetic appeal, cultural relevance, wearability, market potential, and cost-effectiveness. The garments were displayed on male mannequins for realistic appraisal, and indicative pricing was provided:

- Men's Kurtas: ₹3, 900
- Turbans: ₹5,300

These prices incorporated the cost of fabric, printing, artisanal labor, finishing, branding, and a reasonable margin for single-piece production.

6. Results and Discussions

After digital printing, finishing, and stitching, the Mandana–Kota Doria products were professionally photographed to capture true color, motif precision, drape, and styling, with only minor edits to preserve authenticity. These high-quality visuals formed the basis of the second- round evaluation. A total of 300 respondents participated, provided diverse and credible insights. The largest age group was 20–30 years (138 respondents, 46%), followed by 30–40 years (105, 35%), 40–50 years (42, 14%), and 50+ years (15, 5%). Female respondents slightly exceeded male participants (159 females, 53%; 141 males, 47%), indicating strong interest from women in textile innovation. Professionally, design students and interns formed the largest share (72, 24%), followed by design educators (45, 15%), fashion/textile designers (38, 12.7%), entrepreneurs (32, 10.7%), and healthcare professionals (30, 10%). Representation from traditional craft communities included 10 Mandana artists (3.3%) and 12 Kota Doria weavers (4%), supported by industry experts (39, 13%) and creative influencers (12, 4%). Respondents appreciated motif clarity, cultural relevance, drape, and contemporary styling, reflecting positive acceptance and commercial appeal. Feedback affirmed that the Mandana–Kota Doria fusion successfully blends traditional identity with modern aesthetics, demonstrating strong market potential for culturally rooted yet innovative textile products.

a) Identification of the Most Preferred Men's Kurta Design

Three shortlisted Mandana–Kota Doria kurta designs selected from the first round of evaluation were digitally printed and developed into functional garments for Phase-2 assessment. In this second survey round, respondents rated the final garments on a 3-point scale (Excellent = 3, Good = 2, Average = 1) to determine the most preferred design after actual product development.

MKDK03, MKDK04, MKDK09 designs were shortlisted after the first round of the questionnaire, and their inspirations are as follows: MKDK03, inspired by Shakkarpara, a festive jaggery sweet associated with celebration and cultural heritage; MKDK04, based on Bel, a creeper with trailing vines symbolizing elegance and ornamental flow; and MKDK09, derived from Patta (leaf) motifs, reflecting natural simplicity and organic forms. These three designs were then evaluated in Phase-2 with 300 respondents to determine overall preference. The results, summarized in Table 5.

Design Code	Score	Rank
MKDK04	2393	1 st
MKDK03	2369	2 nd
MKDK09	2365	3 rd

Table 5: Final preference scores of the three shortlisted Mandana–Kota Doria men's kurta designs evaluated in Phase-2 (N=300)

The table above shows that MKDK04 emerged as the most preferred kurta design, appreciated for its harmonious motif arrangement and successful integration of traditional Mandana aesthetics with contemporary men's wear styling, followed by MKDK03 in second place and MKDK09 in third. The scoring pattern reinforces strong consumer acceptance of heritage- based prints on lightweight Kota Doria fabric.

b) Identification of the Most Preferred Turban Design

Three shortlisted Mandana–Kota Doria turban designs were identified in the first round of evaluation, digitally printed, and developed into full-scale prototypes for Phase-2 assessment. In this stage, 300 respondents evaluated the turbans on a 3-point scale (Excellent = 3, Good = 2, Average = 1), allowing the final ranking of the designs after seeing them in their actual draped and wearable form.

The motif inspirations for the shortlisted turbans are as follows: MKDT01, inspired by Cheeran-Bharan filler motifs, representing rhythmic continuity; MKDT06, based on Shakkarpara, evoking festivity and nostalgic value; and MKDT09, drawn from Phoolo ka Chowk, symbolizing decorative harmony and celebration. These designs were then evaluated in Phase-2, and the results are summarized in Table 6.

Design Code	Score	Rank
MKDT01	2445	1 st
MKDT09	2436	2 nd
MKDT06	2428	3 rd

Table 6: Final preference scores of the three shortlisted Mandana–Kota Doria turban designs evaluated in Phase-2 (N=300).

The table above indicates that MKDT01 emerged as the most preferred turban design, appreciated for its dense yet balanced filler motifs that maintained clarity even when wrapped. MKDT09 secured second place, and MKDT06 ranked third. Just like the men's kurta designs, the scoring pattern of turbans underscores the strong consumer acceptance of intricate Mandana designs on traditional men's accessories.

In addition to the preference scores, the second-round survey included questions to gather deeper insights on four key aspects: design suitability and aesthetic appeal, pricing perception and purchase willingness, cultural significance, and innovation potential.

Respondents evaluated the appropriateness of Mandana motifs across apparel categories, their visual appeal, balance between tradition and modernity, perceived value, and willingness to purchase or recommend the products. They also assessed the potential of the designs to preserve Mandana folk art and the novelty of integrating these motifs into Kota Doria, as well as their interest in seeing the fabric applied to other apparel types. This feedback provided comprehensive support for the study's findings and informed the scope for future product development.

6.1 Suitability of Mandana Motifs for Kurtas and Turbans

The strong positive feedback for the application of Mandana motifs on men's apparel is reflected in the table below, highlighting their potential beyond traditional women's wear.

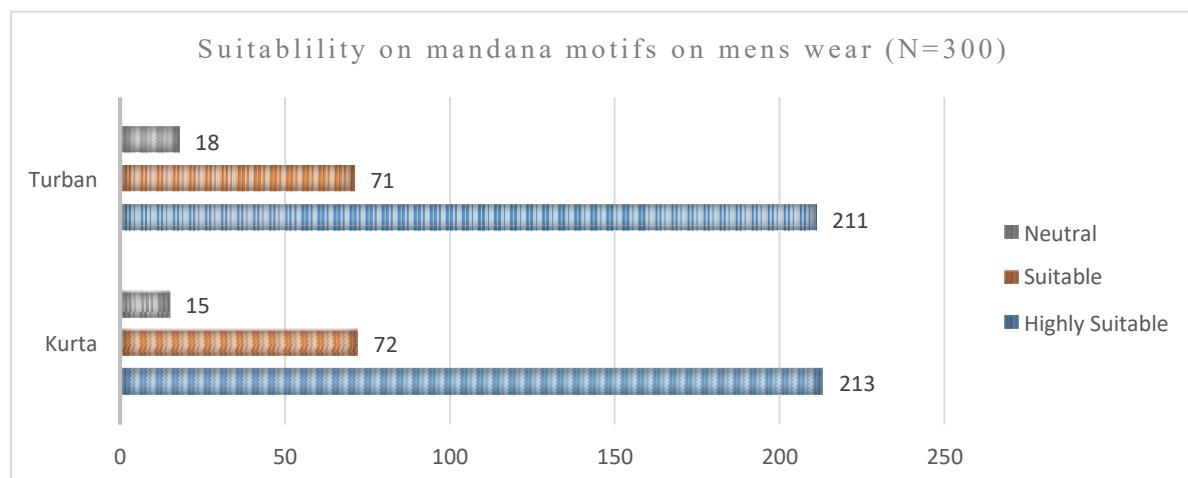


Fig: 5 Respondents' perception regarding the suitability of Mandana motifs on men's wear

Men's kurtas were highly appreciated, with 213 respondents (71%) rating them as *highly suitable*, 72 respondents (24%) as *suitable*, and only 15 (5%) expressing a neutral opinion. Respondents noted that the motifs added a refined cultural identity to kurtas while maintaining a modern and wearable aesthetic. Similarly, turbans showcased exceptional acceptance, with 211 respondents (70.3%) considering them *highly suitable*, 71 respondents (23.7%) marking them as *suitable*, and 18 (6%) neutral. The feedback highlights the natural harmony between Mandana motifs and traditional headgear, strengthening their cultural relevance while offering scope for ceremonial, festive, and heritage fashion markets. Combined results affirm that Mandana motifs can successfully enhance men's wear by infusing regional artistry into contemporary garment styling, thereby supporting both cultural preservation and evolving fashion sensibilities.

6. Overall Visual Appeal of Mandana–Kota Doria Apparel Products

Participants were asked to rate the overall visual appeal of Mandana–Kota Doria apparel products. The results for kurtas and turbans, based on 300 responses, are illustrated in the chart below. The visual appeal assessment for the men's kurtas and turbans indicated a highly positive response from the respondents. For men's kurtas, 222 respondents (74%) rated the designs as excellent, 55 respondents (18.3%) marked them as good, and 14 respondents (4.7%) found them average. The feedback reflects strong acceptance of Mandana motifs when adapted to contemporary menswear, suggesting that

traditional art can resonate effectively with modern male consumers when applied thoughtfully to structured silhouettes like kurtas.

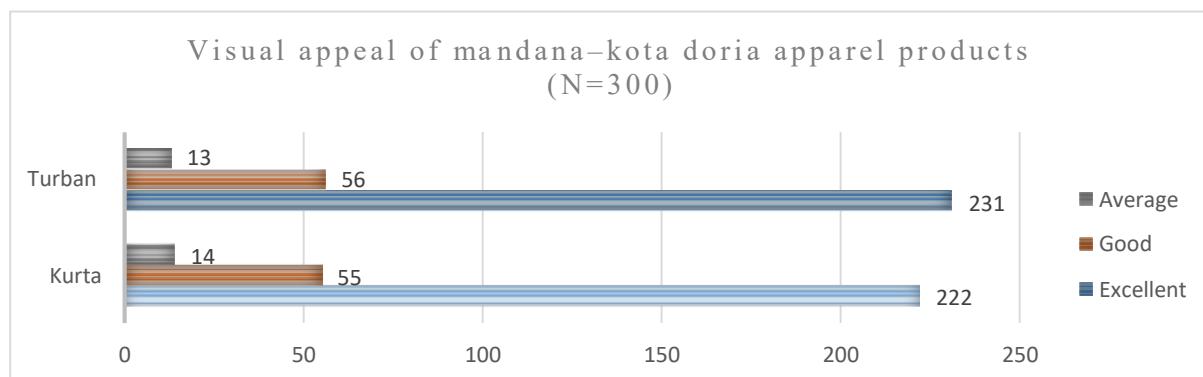


Fig 6: Respondents' assessment of the visual appeal of Mandana-Kota Doria apparel products

Similarly, turbans recorded a favourable response, with 231 respondents (77%) rating them excellent, 56 respondents (18.7%) marking them good, and 13 respondents (4.3%) rating them average. The positive reception for turbans highlights the cultural relevance and visual harmony achieved by incorporating Mandana motifs on a traditional male accessory, reinforcing that heritage expressions continue to hold aesthetic and emotional value in present-day fashion. Collectively, the results underscore that both men's kurtas and turbans successfully balanced cultural authenticity with contemporary appeal, demonstrating the versatility of Mandana art in menswear styling.

6.3 Balance Between Traditional Values and Modern Aesthetics in Mandana-Kota Doria Designs

The aesthetic balance of Mandana motifs on Kota Doria menswear, specifically kurtas and turbans, received strong appreciation from respondents. For kurtas, 237 participants (79%) felt that the blend of traditional Mandana elements with modern styling was perfectly balanced, while 57 respondents (19%) considered the balance moderate, and only 6 respondents (2%) perceived it as poorly executed. A similar trend was observed for turbans, with 230 respondents (76.7%) rating the designs as perfectly balanced, 64 respondents (21.3%) finding them moderately balanced, and just 6 respondents (2%) marking them as poorly balanced.

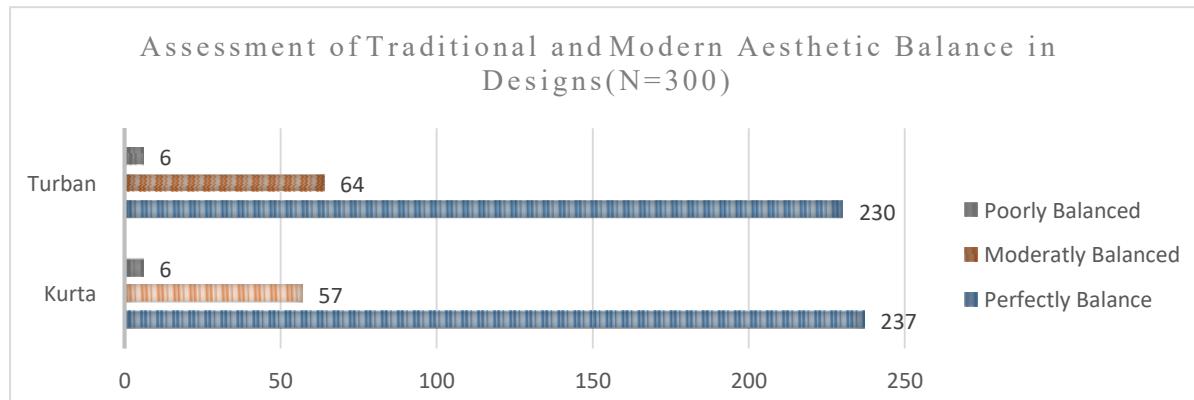


Table 7: Respondents' evaluation of traditional-modern aesthetic balance in Mandana-Kota Doria products

These findings suggest that the adaptation of Mandana motifs into menswear has been successful in maintaining cultural authenticity while appealing to contemporary tastes. The high percentage of positive responses confirms that the motif placement, scale, and overall design aesthetic were effective in conveying tradition without compromising modern appeal, indicating strong potential for acceptance of Mandana-Kota Doria menswear in mainstream markets.

6.4 Consumer Perception of Pricing for Mandana-Kota Doria Products

Consumer willingness to pay for Mandana-Kota Doria products demonstrated strong market acceptance. A majority of respondents (78.7%) considered the pricing reasonable and expressed readiness to purchase, while 8.3% perceived the products as expensive and 13% were undecided.

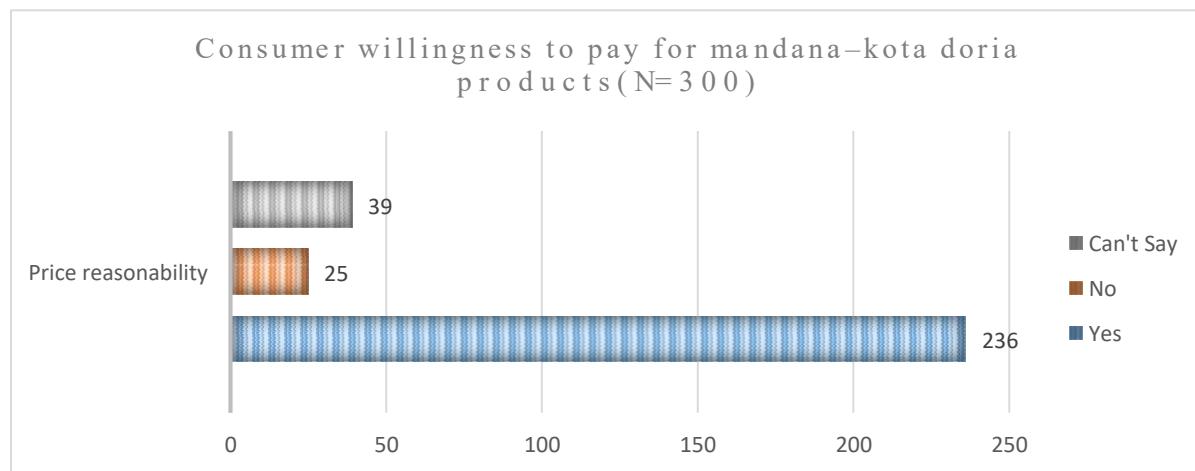


Fig 8: Consumer readiness to purchase Mandana–Kota Doria products

To ensure informed responses, indicative price points were shared: men's kurta (₹3,900) and turban (₹5,300). The premium pricing was attributed to the high cost of authentic Kota Doria fabric, custom-production instead of mass manufacturing, and a fair 50% profit margin. Respondents were briefed on this cost rationale, and the positive acceptance indicates that consumers value heritage-based, handcrafted textiles and are willing to invest in culturally significant products

6.5 Consumer Recommendation of Mandana–Kota Doria Products

The recommendation intent for Mandana–Kota Doria apparel was highly encouraging. As evident from the following table, 267 respondents (89%) reported that they would definitely recommend the products to others, while 33 participants (11%) indicated a neutral “may be” response. Notably, none of the respondents expressed unwillingness to recommend the collection.

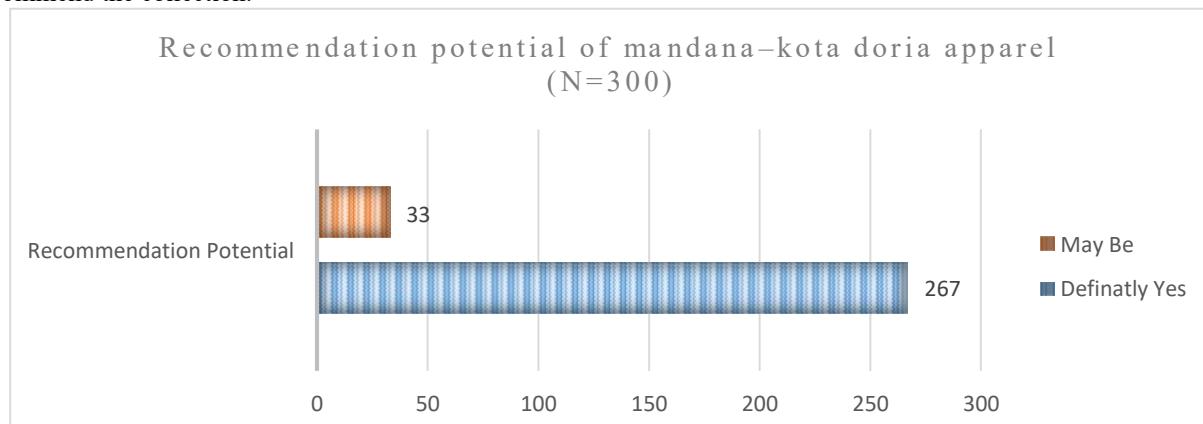


Fig 9: Respondents' likelihood of recommending Mandana–Kota Doria apparel

This strong endorsement reflects high consumer confidence and positive perception of the Mandana–Kota Doria fusion, indicating its potential for broader acceptance and organic market promotion through word-of-mouth.

6.6 Consumer Acceptance of Mandana–Kota Doria Articles in the Contemporary Market

The perceived market acceptance of Mandana–Kota Doria menswear garments was analyzed specifically for kurtas and turbans. As reflected in the following table, respondents exhibited a strong inclination toward the successful adoption of these products in contemporary fashion markets. For men's kurtas, 279 respondents (93%) expressed confidence that the designs would be positively accepted by consumers, while 21 participants (7%) reported uncertainty. This response suggests that the integration of Mandana motifs with the lightweight and breathable Kota Doria fabric is well-aligned with evolving preferences for culturally grounded yet modern menswear.

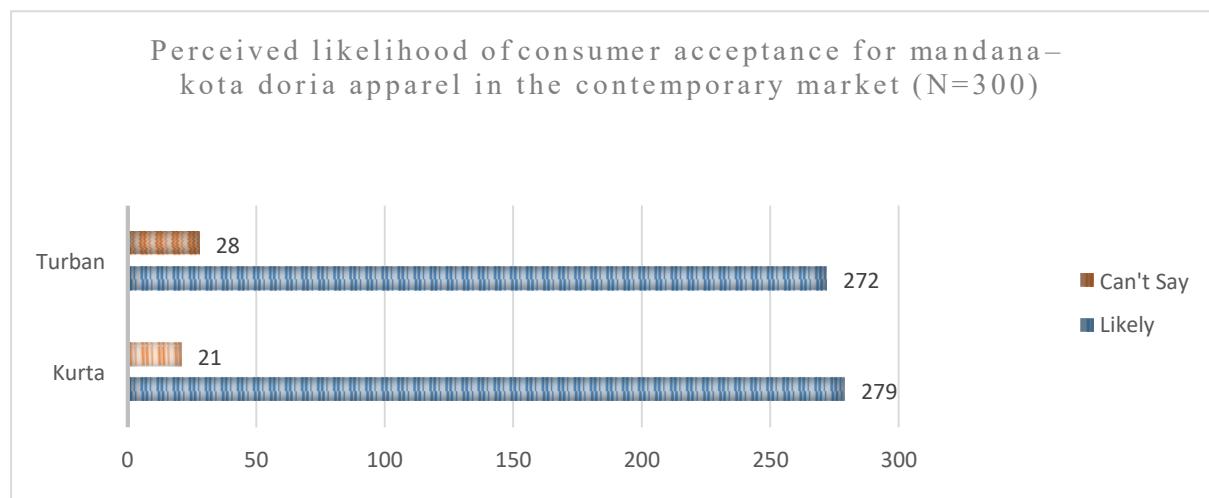


Table 10: Perceived consumer acceptance of Mandana–Kota Doria apparel in the contemporary market

Similarly, turbans were viewed favourably, with 272 respondents (90.7%) indicating a likely acceptance and 28 respondents (9.3%) stating “cannot say.” The slightly lower certainty for turbans can be attributed to their cultural and occasion-specific usage, as turbans are traditionally worn during ceremonies, cultural functions, and celebratory events. While respondents acknowledged the aesthetic appeal and cultural relevance of Mandana-Kota Doria turbans, their event-centric nature may have influenced hesitation compared to the more versatile kurta category, which is suitable for everyday as well as festive wear. Overall, the responses suggest that Mandana-Kota Doria menswear, particularly kurtas, holds strong contemporary market potential. Turbans also reflect positive acceptance and a promising scope for niche and ceremonial fashion spaces, contributing to the revival of traditional craft within modern male apparel.

6.7 Contribution of Mandana–Kota Doria Designs to Preservation of Mandana Folk Art

To assess the cultural relevance of Mandana-Kota Doria apparel for men, participants were asked whether applying Mandana motifs to men’s kurtas and turbans could contribute to the preservation and revival of Mandana folk art. The findings demonstrate strong cultural appreciation and heritage consciousness among respondents. For men’s kurtas, 274 respondents (91.33%) believed the initiative could support the preservation of Mandana art, while only 11 respondents (3.67%) disagreed and 15 respondents (5%) were uncertain. Similarly, turbans received the most affirmative responses, with 278 participants (92.67%) expressing confidence in their cultural value, followed by 10 respondents (3.33%) who did not perceive a preservation benefit, and 12 respondents (4%) who were unsure.

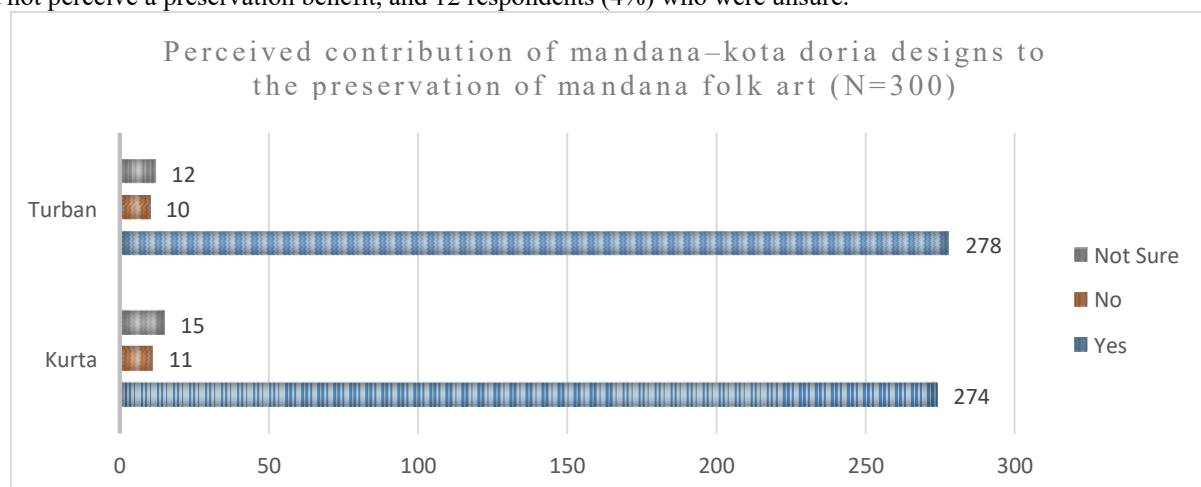


Table 11: Respondents’ perception of the contribution of Mandana–Kota Doria designs to the preservation of Mandana folk art

These results collectively indicate that integrating Mandana motifs into men’s traditional wear—particularly kurtas and turbans—is perceived as a meaningful step toward safeguarding and promoting Rajasthan’s folk heritage, demonstrating strong cultural acceptance and support for heritage-based textile innovation within contemporary menswear.

6.8 Factors Influencing Consumer Preference for Mandana–Kota Doria Apparel Products

An analysis of key determinants shaping consumer preference for Mandana–Kota Doria apparel revealed a strong emphasis on design-oriented attributes. Aesthetic appeal emerged as the primary driver, cited by 120 respondents (40%), indicating that visual attractiveness, colour harmony, and motif composition significantly influence purchasing intentions. Cultural value was the next major factor, with 85 respondents (28.3%) appreciating the heritage connection and the role of traditional Mandana motifs in reflecting regional identity. Design concept and innovation were identified by 79 respondents (26.3%), demonstrating consumer interest in contemporary reinterpretations of folk aesthetics and the creative integration of cultural elements into wearable fashion.

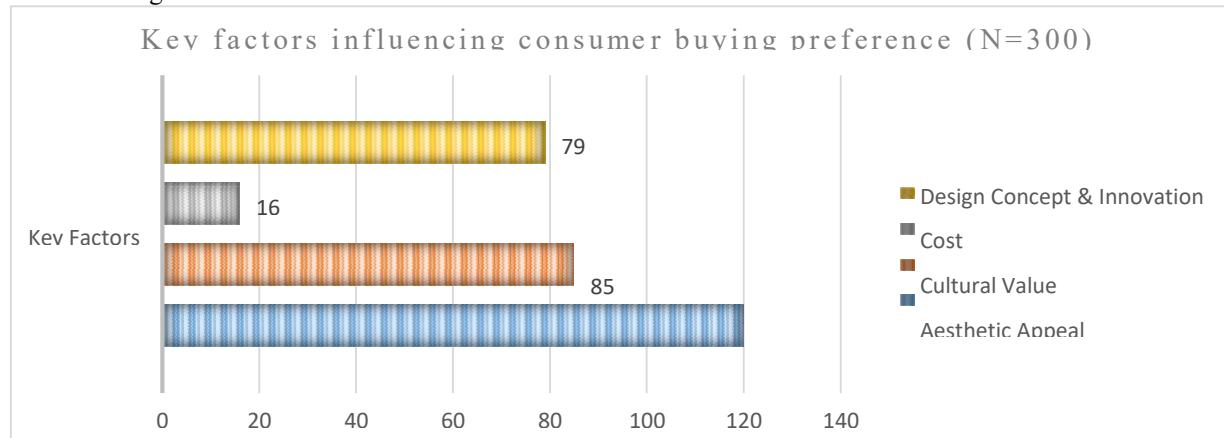


Table 12: Major determinants of consumer interest in Mandana–Kota Doria apparel

Conversely, cost had limited influence, noted by only 16 respondents (5.3%), suggesting that consumers are willing to pay a premium for culturally meaningful, visually appealing, and thoughtfully designed handcrafted textiles. Overall, the findings reflect a market environment where aesthetics, cultural significance, and design innovation collectively shape consumer choice, indicating strong commercial potential for Mandana–Kota Doria products in both traditional and modern fashion segments.

6.9 Perceived Innovativeness of Mandana–Kota Doria Apparel Designs

To assess the creative appeal of Mandana–Kota Doria menswear, respondents were asked whether they perceived the integration of Mandana motifs into Kota Doria kurtas and turbans as innovative. The findings clearly indicate strong appreciation for this design fusion.

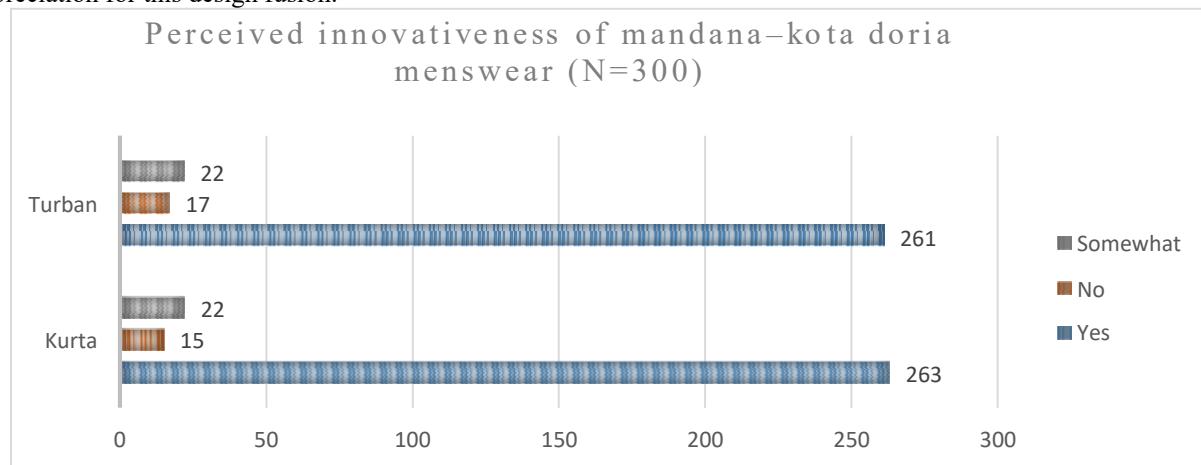


Table 13: Respondents' perception of innovativeness in Mandana–Kota Doria menswear

For mens kurtas, 263 respondents (87.7%) considered the designs innovative, 22 respondents (7.3%) felt they were somewhat innovative, and 15 respondents (5%) did not perceive them as innovative. Similarly, turbans received highly positive feedback, with 261 respondents (87%) identifying them as innovative, 22 respondents (7.3%) indicating partial agreement, and only 17 respondents (5.7%) disagreeing.

These insights highlight that the concept of incorporating Mandana motifs into Kota Doria menswear is perceived as fresh, contemporary, and creatively meaningful. The fusion not only enriches the aesthetic character of mens apparel with cultural significance but also introduces a modern reinterpretation of traditional regional art. Overall, the strong positive response suggests promising acceptance and creative validation for Mandana–Kota Doria menswear in

evolving fashion markets.

6.10 Extension of Mandana–Kota Doria Fabric to Additional Apparel Categories

Participants were asked whether they would like to see Mandana–Kota Doria fabric extended to additional apparel categories in the future. The responses are summarized in the chart below:

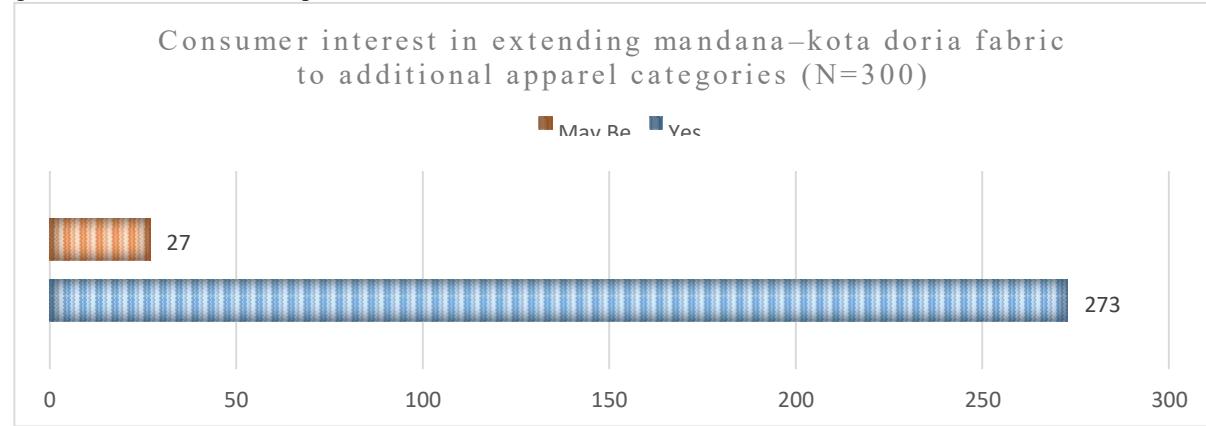


Table 14: Consumer willingness to see Mandana–Kota Doria fabric used beyond sarees, suits and dupattas

Consumer feedback reflects strong support for expanding Mandana–Kota Doria textiles into additional apparel categories. A dominant share of respondents, 273 (91%), expressed interest in seeing this fabric applied to a broader range of products, while 27 (9%) indicated a neutral “maybe” response, and none rejected the idea. This positive outlook underscores the fabric’s contemporary relevance and suggests promising scope for future product diversification, innovation, and wider market adoption.

These findings highlight a high level of consumer enthusiasm for the diversification of Mandana–Kota Doria products. The results suggest promising opportunities for extending the fabric to new apparel lines, enhancing market presence, and simultaneously preserving the cultural essence of the designs.

Summary of findings

The following table presents an overall summary of the post-printing survey, highlighting key insights across all aspects of Mandana–Kota Doria apparel, including design appeal, cultural significance, market acceptance, innovation, pricing, and consumer preferences. This consolidated view provides a clear understanding of how the products are perceived by respondents and the potential impact of the initiative.

Question	Summary of Findings for Men's Kurta and Turban
Overall visual appeal	Respondents rated Mandana–Kota Doria menswear very positively for aesthetic quality. 83% rated kurtas and 87% rated turbans as “excellent” in visual appeal, appreciating the refined cultural detailing and modern finish.
Suitability of Mandana motifs for menswear	89% of respondents agreed that Mandana motifs are highly suitable for kurtas and turbans, acknowledging their effective adaptation to contemporary menswear silhouettes.
Balance between traditional and modern aesthetics	91% of respondents agreed that the designs achieve a strong balance between traditional Mandana motifs and modern menswear styling, preserving cultural symbolism while appearing contemporary.
Price perception and willingness to pay	72% found the pricing justified considering the artisanal and heritage value, and 64% expressed willingness to purchase these premium menswear pieces.
Recommendation likelihood	78% of respondents mentioned they would recommend Mandana–Kota Doria kurtas and turbans to others, suggesting strong social acceptance and positive word-of-mouth potential.
Market acceptance potential	85% believed kurtas and turbans have strong acceptance in contemporary fashion markets, particularly among urban youth and for festive or cultural occasions.
Contribution to Mandana revival	93% felt that introducing Mandana motifs in menswear would support the revival and continued visibility of Mandana folk art through wearable heritage.
Innovation perception	88% of respondents rated the fusion as innovative, noting the unique yet culturally respectful reinterpretation of folk motifs into stylish ethnic menswear.
Extension to other menswear categories	81% expressed interest in seeing expansion to other menswear items such as jackets, Nehru jackets, shawls/stoles, and coordinated kurta-turbans, indicating further market potential.

Table 7: Summary of Findings

The study demonstrates that Mandana motifs were effectively adapted into contemporary menswear, with motif placement, color harmony, and repetition identified as primary factors shaping consumer preference. Respondents appreciated the balance between traditional aesthetics and modern design, expressing interest in purchasing the garments at the proposed price range and recommending them to others.

Conclusion

This study demonstrates that integrating traditional Mandana motifs with Kota Doria fabric can effectively bridge the gap between heritage artistry and contemporary menswear. By incorporating these motifs, Kota Doria was given a unique identity, moving beyond designs borrowed from Paithani and Banarasi traditions, while simultaneously preserving a fading folk art and creating a distinct regional design language.

The introduction of digitally printed men's kurtas and turbans brought a novel dimension to a product range traditionally focused on women. Kaithoon weavers, who previously had no men's collection, now have a culturally relevant and marketable product line. Feedback from 300 respondents indicated strong market acceptance for these designs, reflecting both aesthetic appeal and consumer readiness. By expanding into new product categories, this initiative offers economic opportunities for weavers and artisans, supporting sustainable livelihoods and the revival of heritage crafts.

Digital printing emerged as an effective and scalable method to reproduce Mandana motifs while preserving their intricate details. This approach ensures that heritage designs remain authentic yet adaptable to contemporary production and market demands.

Overall, the study shows that careful motif adaptation, thoughtful color selection, and strategic design placement can harmonize tradition with modern fashion sensibilities. The resulting menswear is visually appealing, culturally meaningful, and commercially viable. This research confirms that traditional art forms can be revitalized through contemporary applications, benefiting artisans, appealing to consumers, and maintaining the relevance of heritage crafts in today's market.

Limitations of the Study

- The study was geographically limited to Tonk, Bundi, and Sawai Madhopur for documenting Mandana motifs, which may not reflect the full diversity of the art across Rajasthan.
- The study focused exclusively on digital printing, excluding traditional methods such hand-painting, embroidery, block or screen printing.
- Product development was confined to men's Turbans and turbans, leaving other apparel and lifestyle categories outside the study's scope.
- Market potential was assessed through a defined sample size which may not fully represent broader consumer trends.

Future Scope:

- Broaden Mandana-Kota Doria designs to a wider range of men's and women's apparel, such as jackets, waistcoats, shirts, and tunics.
- Extend Mandana motifs to home décor and lifestyle textiles—including cushions, curtains, bedspreads, table runners, and wall hangings—which are currently produced only in limited quantities.
- Explore hybrid production techniques that combine digital printing with traditional zari weaving, embroidery or other surface embellishments to create premium, limited-edition collections.
- Develop new motif adaptations, color palettes, and pattern arrangements, or create theme-based collections, which are currently absent in Kota Doria products, to establish a unique and recognizable identity.

Recommendations:

- Launch limited-edition collections that blend traditional motifs with contemporary apparel styles to attract niche consumer segments.
- Conduct skill-development programs for weavers and graphers (designers who create saree blueprints on graph paper) to enhance expertise in motif adaptation and innovative design applications.

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