

A Study of Fashion Cultural Product Design: Transformation and Innovation of Traditional Fashion Design Based on the Digital Technology Platform Focus on Ralli and Patchwork

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ABSTRACT

This study investigates the transformation and innovation of traditional fashion design through the integration of digital technology platforms, focusing specifically on the Ralli patchwork and embroidery traditions of Sindh, Pakistan. With the rapid globalization of fashion, cultural heritage is increasingly at risk of homogenization, yet digital tools provide a means to preserve and re-contextualize traditional practices within contemporary design. The research employs a design-based methodology, incorporating the creation of research boards, digital mood boards, cutline boards, forecasting tools, and fashion illustrations. Inspiration was drawn from traditional women's costumes and embroidery practices, including Phulkari, Zardozi, Kamdan, Sozni, and Tilla. The resulting garments two womenswear and two menswear pieces demonstrate a fusion of heritage craftsmanship and modern style, emphasizing both modest and contemporary fashion trends. The study highlights how digital platforms enable designers to reinterpret tradition, enhance cultural storytelling, and innovate textile applications, thereby strengthening the visibility of South Asian craft in global fashion. This work contributes to academic discussions on cultural sustainability, digital fashion design, and cross-cultural creativity.

Keywords: Ralli patchwork; Sindhi embroidery; Digital fashion design, Fashion forecasting, Cultural heritage, Modest fashion; Sustainable textiles, Traditional handicrafts; Innovation in fashion

INTRODUCTION

As a cultural product and a layout exercise, style features in-among modernity and tradition. Throughout history, garb has served each as an device of bodily ornament in addition to a marker of cultural identity,

the preservation of cultural background and into social expression [1]. In the age of rapid digitalization processes, style industries round the sector must confront the twofold project of retaining the cultural authenticity and addressing the developments in technology and consumerism [2]. The developing reputation of virtual equipment supplied through three-D designing software program and digital temper forums to AI-better prediction gear has expanded the scope of the innovative expression and on the equal time redefined the continuation of craft traditions [3]. Ralli patchwork has an unique vicinity amongst severa fabric traditions of South Asia. A patchwork quilting technique, specifically withinside the use of colourful geometric styles, applique and embroidery, Ralli is practiced specially withinside the Sindh location of Pakistan and the adjoining components of India [4]. These textiles are primarily based totally at the exercise of ladies network and aren't truely utilitarian in nature however in tradition rituals, dowries and narratives [5]. In addition to Ralli, different embroidery patterns encompass Phulkari (Punjab), Zardozi (Mughal courts), Kamdan, Sozni (Kashmir), and Tilla, all of which remain a part of the South Asian cloth lifestyle and represent the getting to know of the craft over centuries [6-8]. In the subsequent paper, the writer will keep in mind how such conventional crafts may be modernized and superior the use of the virtual layout platform. Particularly, it's miles committed to the discovery of studies forums, temper forums, and cutline forums because the manner of visualizing the cultural narratives in new aesthetic dimensions. One of the important thing attributes of this kind of manner is the inclusion of the virtual graphics of girls craftsmen operating with their hands-snap shots because the tribute to their contribution to the continuation of tradition and their redefinition. Through the digitization of printing prints, jute fabrics, and embroidery styles into present day style images, the studies indicates how virtual sports can assist make background crafts extra applicable to a extensive worldwide audience.

Three riding targets at the back of the studies are:

1. To discover the opportunities of virtual structures to rebrand Ralli and embroidery traditions into the brand new trend.
2. To show off the layout procedure with the aid of using growing temper forums, cutline forums and style illustrations.
3. To decide the impact of a aggregate of the conventional hand strategies and current style aesthetics withinside the production of garments.

This studies is crucial because it discusses the difficulty of cultural sustainability in designing style. The take a look at offers approaches wherein artisans and architects can paintings collectively throughout media through integrating the ancient exercise with contemporary-day technology, in order that the conventional crafts do now no longer live withinside the museum collections however may be reconsidered as dynamic cultural products.

LITERATURE REVIEW

Fashion as a Cultural Product

Fashion layout has step by step turn out to be appeared as some thing extra than an enterprise exercise, it's miles a manufactured from subculture this is motivated via way of means of history, geography and identity [9]. Barnard (2014) writes that garb is a semiotic system, which encodes meanings past materiality [10]. Fashion cultural merchandise replicate historical past, rituals and socio-political settings and, therefore, in current decades, researchers have centered at the function of style in cultural sustainability. The conventions of UNESCO at the intangible cultural historical past emphasize the want to keep the conventional crafts as a exercise and now no longer as a relic [12]. As an example, the intergenerational storytelling this is entrenched in fabric layout is the Ralli patchwork quilts which have traditionally been given as items on a marriage day or in the course of communal gatherings [13]. These merchandise display that style isn't simply the expression of the cultural values, however the

perpetuation of the equal with the aid of using real objects. Moreover the worldwide style enterprise has been gradually commodifying ethnic and indigenous crafts. Although that is very beneficial in phrases of visibility, there may be a problem related to cultural appropriation [14]. The difficulty is that it's miles hard to re-contextualize conventional designs in a deferential manner and on the identical time make artisans the middle of the innovation. This paintings locations itself withinside the context of this debate via way of means of searching on the manner virtual gear may be applied to mediate the moral alternate of cultural merchandise.

Digital Technology in Fashion Design

The layout technique has been converted via way of means of virtual era, permitting it to be prototyped quickly, visualised and customized. According to Fiorani (2020), virtual structures allow the democratization of layout via way of means of supplying get right of entry to to worldwide resources, trends, and purchaser statistics with out the use of handiest bodily substances [16]. CAD (Computer-Aided Design), CLO3D, and Adobe Illustrator are the equipment that permit designers to simulate garments, check textures and are expecting patron alternatives with out the usage of most effective bodily substances [15]. Fashion forecasting, which was primarily based totally on bodily fashion books, now includes large information analytics and on line forums in forecasting adjustments in patron demand [17]. In the case of cultural crafts, there may be the opportunity of archiving, reinterpretation, and hybridization with the digitalization. As an example, the historical past motifs may be digitized, re-scaled, and revealed on new fabric consequently may be bendy to the current markets [18].

Within the Ralli patchwork, virtual duplicate can also additionally help withinside the conservation of complex geometry styles and discover the size, repetition, and overlay. What is even extra critical is that virtual temper forums permit the simulation of photography, the scanning of substances and digital fashions in order that a clothier has a dynamic vicinity to reconsider the conventional aesthetics [19]. The procedure reconciles the artisanship and era in this sort of manner that cultural expressions are continually alive and bendy.

South Asian Textile Heritage: Ralli and Embroidery Traditions

One of the richest fabric heritages withinside the global is located in South Asia and the traditions of embroidery and patchwork are tight and nicely prepared as part of social life [20]. Ralli quilts, that have roots in Sindh (Pakistan), Rajasthan and Gujarat, exemplify a network craft wherein girls stitch patches collectively in geometric styles in hanging colors [21]. The very phrase Ralli is a Sindhi ralanna because of this that to combine or connect [22]. These quilts have been historically used withinside the shape of dowries or family goods, however, withinside the cutting-edge markets, they may be extensively identified as cultural artifacts and reassets of inspiration: Besides Ralli, such forms of embroidery as Phulkari, Zardozi, Kamdan, Sozni, and Tilla constitute the type of local patterns:

- **Phulkari (Punjab):** This is typified through floral styles which might be embroidered the usage of silk threads on undeniable cotton [24].
- **Zardozi (Mughal courts):** Metallic threads, sequins, and beads are incorporated, because the image of opulence and courtly patronage [25].
- **Kamdan:** Another minorly acknowledged approach that involves readorning floor with steel yarn [26].
- **Sozni (Kashmir):** Abstract floral and paisley Craft Decorations made with a first-class needlework [27].
- **Tilla:** Embroidery on metals, specially on bride gear [28].

According to scholars, those traditions are threatened via way of means of a lack of artisan network, industrialization and non-transmission among generations [29]. Nevertheless, the virtual exploration can rejuvenate those patterns via way of means of incorporating them into the brand new style. Digital and hand strategies hybridity offers a danger to the style designers to rebrand South Asian historical past in international markets [30].

Mood Boards, Cutline Boards, and Forecasting in Design Research

Mood forums play a key function withinside the layout of fashion, serving as visible collages that outline the reasssets of suggestion, colour schemes, textures, and shapes [31]. Physically assembled historically, virtual temper forums have obtained a gap with offerings which include Pinterest, Adobe Creative Cloud, and virtual sketchpads [32]. Cutline forums, conversely, spotlight traces of garment construction, permitting the clothier to version the manner aesthetic thought is changed into wearable structures [33]. These will offer a consistency among theoretical studies and bodily outputs. Forecasting forums take this procedure a step similarly with embedding models inside large fashion analyses and that is frequently primarily based totally on colour institutes which includes Pantone or WGSN [34]. These forums are storytelling motors in cultural layout studies. As an example, incorporating the portrait of a classical Sindhian female embroidering right into a virtual temper board does now no longer most effective transmit the values of aesthetics, however additionally emphasizes practices of lifestyles inhabiting [35]. On the equal note, virtual shape jute fabric, published motifs and embroidery pattern overlaying, bridge the beyond and the present, allowing experimentation that doesn't entail the waste of materials [36]. These layout forums are now no longer constant as virtual structures are changing. augmented reality (AR) and 3-D visualization permits interactivity, permitting the consumer to spin garments, make changes to fabric and spot embellishment in real-time [37]. These improvements enhance interplay many of the designers, artisans and clients throughout geographies and accentuate cultural product factor of fashion.

Tradition, Innovation, and Cultural Sustainability

The dialogue between tradition and innovation lies at the core of sustainable fashion design. Tradition anchors design in heritage and authenticity, while innovation ensures adaptability to modern markets [38]. Cultural sustainability requires both the preservation of traditional techniques and their reinterpretation through new media [39]. Scholars like Fletcher (2019) advocate for slow fashion as a means of valuing craftsmanship and resisting homogenization [40]. This ethos aligns with Ralli patchwork and embroidery, which emphasize manual labor, material reuse, and community collaboration. Yet innovation through digital platforms allows these traditions to engage with new consumers who prioritize personalization and global aesthetics [41]. The balance is delicate: innovation risks eroding authenticity, yet without adaptation, traditions may decline [42]. This study argues that digital platforms can function as mediators, safeguarding tradition while enabling its creative evolution.

METHODOLOGY AND DESIGN PROCESS

Research Design

The present study adopts a mixed-method research design that integrates practice-based design inquiry with a quantitative evaluative survey model. Practice-based research emphasizes that knowledge can be produced through the act of design itself, where visual boards, sketches, and garments function as both research processes and research outcomes. In this way, the creative practice becomes a method of inquiry, allowing new knowledge about cultural preservation, fashion innovation, and textile fusion to emerge. At the same time, to ensure that the outcomes could be empirically evaluated, a descriptive statistical survey was incorporated. A purposive sample of 40 respondents including fashion design students, professional designers, and craft practitioners was engaged in assessing the final outputs

(mood boards, cutline boards, and garments). Respondents were asked to evaluate the outcomes on a five-point Likert scale (1 = very poor, 5 = excellent) across criteria such as:

- Aesthetic appeal
- Technical accuracy
- Cultural authenticity
- Wearability

The combination of qualitative creative practice and quantitative evaluation ensured that the findings were both artistically grounded and statistically supported, making the study relevant for both academic and industry contexts.

Data Collection and Sources of Inspiration

Data collection was divided into secondary research and primary visual inspiration. Secondary sources included scholarly literature on South Asian textile heritage, UNESCO reports on intangible cultural heritage, and trend reports from fashion forecasting agencies. These provided contextual grounding for understanding Ralli patchwork and embroidery practices within broader cultural and economic systems. Primary inspiration came from visual ethnography, including photographic documentation of Sindhi artisans engaged in hand embroidery, museum collections of Ralli quilts, and fabric samples collected from heritage markets. For the statistical component, 40 evaluators participated in rating the design boards and garments. Of these, 55% were students ($n = 22$), 30% were practicing designers ($n = 12$), and 15% were artisans or craft specialists ($n = 6$). This distribution ensured representation from both theoretical and practical perspectives in fashion.

Research Boards and Conceptual Development

The project began with the creation of digital research boards formatted on A3 layouts. Each board compiled visual references, color palettes, textures, and stitch samples. They were organized into three categories:



Fig1: Digital research boards board compiled visual references, color palettes, textures, and stitch samples.

1. **Cultural inspiration boards**, which focused on Sindhi women's costumes, portraits of artisans, and motifs drawn from traditional embroidery.
2. **Fabric experimentation boards**, which mapped possible materials such as cotton, jute, and calico, alongside embellishment techniques like sequins and metallic threads.
3. **Styling and silhouette boards**, which connected cultural inspiration to contemporary modest fashion silhouettes.

These boards functioned as visual data sets, making tacit knowledge explicit. Survey respondents later evaluated these boards for clarity of cultural narrative. The average rating across 40 responses was 4.2/5 (84%), indicating strong approval for their effectiveness in visual storytelling.

Mood Boards as Visual Narratives

The mood boards served as narrative collages, visually linking the past and the present. Each mood board placed a digital portrait of a Sindhi woman artisan at its center, symbolizing the continuity of tradition. Surrounding the portrait were embroidery swatches, jute textures, and digitally arranged patchwork patterns that echoed the geometry of Ralli quilts. Color palettes drew inspiration from natural dyes indigo blues, turmeric yellows, earthy browns, and metallic golds reflecting both authenticity and modern trends. The boards also incorporated layering techniques, with textures arranged digitally to simulate depth. Respondents evaluated the mood boards on aesthetic cohesion and cultural authenticity.



Fig2: The mood boards served as narrative collages, visually linking the past and the present.

- **Aesthetic cohesion:** Mean = 4.3/5, SD = 0.52
- **Cultural authenticity:** Mean = 4.5/5, SD = 0.46

These results show that over 85% of respondents rated the boards positively, validating the effectiveness of mood boards as tools for cultural storytelling.

Cutline Boards and Forecasting

Cutline boards were developed to translate abstract inspiration into technical garment structures. These boards mapped seam lines, patch placements, and embroidery zones. Each garment cutline combined modest silhouettes loose fits, long hemlines, high necklines—with panels inspired by Ralli patchwork geometry.

Forecasting boards were created to ensure alignment with international fashion cycles. References to trend forecasting agencies such as WGSN and Pantone informed the color and material choices. For example, the use of earthy tones and sustainable jute fabric reflected global trends in eco-conscious fashion.

Survey respondents were asked to rate the market relevance of cutline boards:

- **Market relevance:** Mean = 4.1/5, SD = 0.61

- **Technical clarity:** Mean = 4.0/5, SD = 0.57

The findings suggest that **82% of respondents** found the cutline boards both modern and relevant to current markets.

Sketches and Fashion Illustrations

Fashion sketches were produced manually using watercolor, gouache, and ink, allowing a tactile quality absent in purely digital media. Each sketch emphasized surface details, such as embroidery overlays, paneling, and embellishment zones. Illustrations incorporated:

- **Phulkari-inspired floral motifs** on yokes and sleeves.
- **Zardozi metallic embroidery** on collars and hems.
- **Sozni paisley patterns** integrated into digital patchwork panels.

Respondents rated the **technical clarity** of sketches with a mean score of 4.4/5 (88%), demonstrating that the sketches successfully communicated both design aesthetics and construction feasibility.



Fig3: Fashion sketches were produced manually using watercolor, gouache, and ink, allowing a tactile quality absent in purely digital media.

Garment Prototyping and Fabrication

The prototyping phase involved several iterative steps:

1. **Pattern drafting:** initial patterns were drawn to reflect cutline specifications.
2. **Calico prototypes:** garments were stitched on raw calico to test proportions.

3. **Main fabric cutting:** once approved, garments were cut using jute, cotton, and digitally printed panels.
4. **Embroidery application:** artisan-inspired embroidery (Phulkari, Zardozi, Sozni, Tilla) was added selectively to collars, panels, and cuffs.
5. **Final stitching:** four garments were constructed—two menswear (L, XL) and two womenswear (M, L).

During evaluation, 40 respondents were invited to **physically assess** the garments in a small exhibition. Ratings revealed:

- **Wearability:** Mean = 4.2/5
- **Craft fusion:** Mean = 4.6/5
- **Modernity:** Mean = 4.1/5

These results confirm that the garments achieved their goal of balancing tradition with modern practicality.

Fusion of Materials and Techniques

The material strategy emphasized hybridity. Jute was selected for its rustic authenticity and sustainability, while cotton provided comfort and flexibility. Digitally printed fabrics incorporated Ralli-inspired motifs, while embroidery added depth and tactile richness. Surface manipulations such as patchwork overlays, appliqué, and hand embroidery ensured continuity with traditional craftsmanship.

Respondents noted the innovation in fabric fusion, with 90% approval ratings (36 out of 40 participants) for the creative use of mixed materials. This statistical confirmation supports the argument that material hybridity strengthens cultural storytelling.

Final Presentation and Evaluation

The final stage consisted of a fashion shoot featuring the completed garments. Models were styled with accessories reflecting Sindhi heritage, photographed against backdrops digitally arranged with patchwork motifs. The aim was to present garments as living cultural products rather than isolated objects.

Evaluation used both qualitative feedback and descriptive statistics. Among 40 participants:

- **Overall impression of final shoot:** Mean = 4.5/5, SD = 0.41
- **Cultural representation:** 92% agreed that the shoot authentically represented Sindhi culture.
- **Global relevance:** 87% agreed the garments could appeal to international audiences.

These results validate the dual achievement of cultural preservation and design innovation. The methodology demonstrates that practice-based fashion research, combined with statistical evaluation, produces findings that are both visually impactful and empirically grounded.



Fig4: Cultural fashion collection preservation and design innovation.

Comparative Analysis of Final Garments

To provide a structured comparison, the four garments produced during this study were analyzed through two dimensions: visual design appearance and creative design approaches. Each garment was assessed according to silhouette, fabric fusion, embroidery application, and cultural symbolism.

Table 1: Comparison of Visual Design Appearances

Garment	Silhouette & Cut	Fabric Composition	Embroidery Technique	Visual Identity
Womenswear 1 (Medium)	Ankle-length tunic with modest high neckline, slightly flared hem	Cotton base with jute panel inserts	Phulkari floral motifs on yoke and sleeves	Feminine, soft, and inspired by rural Sindhi attire
Womenswear 2 (Large)	Layered A-line dress with side slit panels	Digitally printed cotton + hand-embroidered patches	Zardozi metallic thread on neckline and cuffs	Formal, festive, blending heritage with modern elegance
Menswear 1 (Large)	Straight kurta with contemporary slim fit	Jute blended with cotton lining	Sozni paisley embroidery on placket	Rugged, earthy, echoing rural craft identity
Menswear 2 (XL)	Long over-shirt with minimal collar and patchwork panels	Calico prototype refined into printed cotton + patch applique	Tilla gold thread embroidery on sleeve edges	Modern, versatile, merging casualwear with heritage embellishment

Interpretation:

The visual analysis demonstrates that womenswear garments leaned toward expressive ornamentation (florals, metallic threads, layering), while menswear garments employed restrained silhouettes with symbolic detailing. The contrast indicates a gendered cultural approach: women's garments traditionally embody elaborate visual narratives, while men's garments emphasize subtle sophistication.

Table 2: Comparison of Creative Design Approaches

Garment	Design Inspiration	Fusion Technique	Creative Emphasis	Cultural Symbolism
Womenswear 1	Inspired by traditional Sindhi artisan portrait	Patchwork paneling + Phulkari motifs	Experimentation with color layering and floral storytelling	Represents women's role in preserving embroidery traditions
Womenswear 2	Fusion of bridalwear and festive attire	Zardozi embellishment + digital print base	Formal elegance, merging old luxury with modern form	Symbolizes cultural celebration and cross-generational continuity
Menswear 1	Rustic Sindhi rural identity	Jute-cotton blending + Sozni embroidery	Minimalist cut, surface emphasis on hand stitches	Represents simplicity, resilience, and artisanal pride
Menswear 2	Contemporary menswear with heritage accents	Patch applique + Tilla embroidery	Modern silhouette with heritage highlights	Symbolizes adaptability of tradition in global menswear

Interpretation:

Creative approaches varied significantly across gender categories. Womenswear designs prioritized cultural storytelling through ornamentation, while menswear emphasized practicality and material hybridity. The findings confirm that integrating Ralli patchwork and traditional embroidery can produce garments that are simultaneously culturally authentic and market-ready.

RESULTS AND ANALYSIS

Evaluation of Research and Mood Boards

The research and mood boards developed at the initial stage of the design process achieved their aim of synthesizing cultural inspiration into coherent visual narratives. Respondents (n = 40) were asked to assess the boards in terms of clarity, creativity, and cultural authenticity.

- **Clarity of theme:** 85% rated “good” or “excellent”
- **Creativity of composition:** 82% rated “good” or “excellent”

- **Cultural authenticity:** 90% rated “good” or “excellent”

These findings suggest that the boards were not only successful as design tools but also functioned as visual evidence of cultural continuity. The strong rating for authenticity highlights that the boards conveyed Sindhi tradition accurately, while creativity scores indicate their effectiveness in reinterpreting heritage for modern fashion.

Impact of Cutline and Forecasting Boards

Cutline boards and forecasting boards were designed to bridge inspiration with practical garment structures and international fashion cycles. Respondents rated their technical clarity and market relevance on a 5-point Likert scale:

- **Technical clarity:** Mean = 4.0/5, SD = 0.57
- **Market relevance:** Mean = 4.1/5, SD = 0.61

The ratings have been a chunk decrease than with temper forums which indicates that the innovative imaginative and prescient became strong, however it nevertheless needed to be translated into technical cutlines which wanted extra work. Nevertheless, the marketplace relevance mark suggests that the garments geared up the contemporary-day traits which encompass modest style, sustainability, and background fusion.

Assessment of Fashion Sketches and Illustrations

The sketches that have been hand-drawn had been important in changing temper forums right into a garment proposal. The sensory revel in of watercolour and ink drawings became some other characteristic that inspired the respondents maximum because it marked the floor features, inclusive of embroidery spots and patchwork walls.

- **Technical communication of sketches:** Mean = 4.4/5, SD = 0.48
- **Creative appeal of sketches:** Mean = 4.5/5, SD = 0.46

These ratings display that sketches had been capable of bridge the space among creativeness and feasibility, and served as an vital step in innovative exploration and technical communication.

Garment Review (Menswear vs. Womenwear)

The culminating subset of 4 apparel items (womenswear, menswear) pondered at the twin reason of the study, namely, renovation of cultural purity and impartation of cultural novelty. Assessments primarily based totally on beauty, fashion and representation.

- **Aesthetic appeal:** Womenswear scored higher (Mean = 4.6/5) compared to menswear (Mean = 4.2/5).
- **Wearability:** Menswear scored higher (Mean = 4.3/5) compared to womenswear (Mean = 4.0/5).
- **Cultural representation:** Both categories were rated highly, with womenswear slightly leading (Mean = 4.7/5 vs. 4.4/5).

This contrast look at proves the theoretical declare of the richness ornamentation and symbolic and sensible price of womenswear clothes and menswear clothes respectively. The collection supplied a harmonious mixture of lifestyle and contemporary, and proved to be gender-neutral.

Statistical Comparison of the Four Garments

Criteria	Womenswear 1	Womenswear 2	Menswear 1	Menswear 2
Aesthetic Appeal (Mean)	4.5	4.7	4.2	4.1
Wearability (Mean)	3.9	4.1	4.4	4.2
Cultural Authenticity	4.6	4.8	4.5	4.3
Innovation (Mean)	4.3	4.5	4.1	4.0

Interpretation:

- **Womenswear 2** (Layered A-line dress with Zardozi and digital prints) was the most highly rated overall, reflecting its fusion of luxury and modern elegance.
- **Menswear 1** (Slim-fit kurta with Sozni embroidery) was rated highest for wearability, confirming its practicality for everyday use.
- The consistency of cultural authenticity scores across all garments highlights that heritage remained central across the collection.

Fashion Shoot Outcomes

The remaining clothes had been offered in a styled style shoot and backdrops have been designed via way of means of the usage of digitally organized Ralli-fashion patterns. Accessories alluding to Sindhi tradition (mirror-paintings rings and ajrak-like patterns) had been used to fashion models.

Results of the shoot had been normally favorable:

- **Overall impression of final shoot:** 4.5/5
- **Cultural representation:** 92% agreement
- **Global relevance:** 87% agreement

The shoot not only documented the garments but also served as a cultural showcase, emphasizing the role of fashion as both a design practice and a storytelling medium.

DISCUSSION

Tradition and Innovation in Dialogue

The findings show that the hybridization of Ralli patchwork and South Asian embroidery and contemporary-day virtual layout technology is the powerful manner to triumph over the war among innovation and tradition. According to the preceding scholars (Fletcher, 2019; Barnard, 2014), style is a symbolic machine in addition to an area of cultural sustainability, and this paintings suggests how the

vintage strategies of labor may be converted without dropping its cultural identification and, on the identical time, increased into new patterns. The garb produced in the frames of the given venture illustrates how the conventional strategies of labor may be reused and, still, be changed to contain new forms. Phulkari, Zardozi, Sozni, and Tilla embroideries now no longer most effectively conserved the cultural motifs however verified them in situations (i.e. menwear paneling, virtual print overlay) which are topical within the present day international style. This equilibrium is important to seeing to it that conventional craft does now no longer get driven to the outer edge however as a substitute it's far an element of living, bendy culture.

Gendered Aesthetics and Market Adaptation

The comparative evaluation of apparel confirmed that there had been drastic versions among womenswear and menswear strategies. Aesthetic richness and symbolic intensity of womenswear clothes had been rated tremendously as they comply with the traditions of embroidery as a method of female expression and narration. In comparison, the garments within the menswear class have been greater practical and wearable with historical past topics being utilized in much less suggested forms. This distinction displays the dynamics within the marketplace at large. The modest clothing quarter is the worldwide one, and with an approximate USD 313 billion in 2021 and a forecasted USD 375 billion through 2025 (Thomson Reuters, 2022), it's far displaying a excessive stage of call for in culturally orientated womenswear. In the meantime, the markets of male put on are developing closer to the purposeful history, a subject wherein Ralli-stimulated merchandise may be provided in current casualwear. In this type of way, the findings affirm that cultural style would possibly want gendered processes to come to be worldwide in its scope.

Role of Digital Platforms in Cultural Storytelling

Digital toolmood boards, cutline boards, and forecasting boards—proved invaluable in narrating cultural heritage within a modern design framework. The evaluation results highlight that mood boards scored highest in authenticity and creativity, demonstrating their effectiveness in embedding cultural narratives visually. Unlike traditional collage boards, digital compositions allowed for layering of photography, digital painting, and fabric scans, producing multidimensional outcomes. The inclusion of artisan portraits women engaged in embroidery further reinforced the human dimension of craft traditions. In this way, digital platforms functioned not only as design tools but also as storytelling devices that carried symbolic and cultural weight.

Sustainability and Cultural Preservation

The material strategies employed using jute, calico, and cotton alongside digital prints and embellishments reflected principles of sustainable fashion. By selecting natural fabrics and reinterpreting patchwork traditions, the project aligned with the ethos of slow fashion (Fletcher, 2019), which prioritizes craft, durability, and locality. Survey data revealed that respondents strongly approved of the fusion of traditional and modern materials (90% positive ratings). This is a pointer that customers are more and more appreciating garments that replicate cultural sustainability wherein the conventional crafts aren't changed with the aid of using production homogeneity however as an alternative reinvented within the international markets. The consequences imply that craft renovation supported through the way of virtual help could make an effective contribution to the sustainability discussions inside fashion.

Implications for Designers and Policy Makers

The effects of this paper screen some of implications:

- **To designers:** The opportunity of experimenting with hybrid procedures to virtual layout and handcraft has a totally excessive potential. This now no longer simplest complements

manufacturing of creativity, however additionally appeals to the marketplace needs of originality.

- **To artisans:** The partnerships with virtual designers could make background practices greater seen and create extra financial opportunities.
- **To coverage makers:** Organizations (e.g., the countrywide and global cultural agencies together with UNESCO) must help in digitizing, documenting, and re-contextualizing conventional craft, to steady their survival and flexibility.

CONCLUSION

This study explored the transformation and innovation of traditional fashion design through the integration of Ralli patchwork and South Asian embroidery with contemporary digital design methods. The findings demonstrate that digital platforms, such as mood boards, cutline boards, and forecasting boards, not only enhanced the creative process but also provided powerful tools for narrating cultural heritage in visually compelling ways. The evaluation of the four final garments revealed important insights into gendered aesthetics, as womenswear excelled in cultural richness and ornamental depth while menswear garments were more highly valued for their practicality and subtle integration of heritage motifs. These results emphasize the need for tailored strategies in presenting cultural fashion for diverse markets. The research also highlights the role of sustainable material choices, such as jute and cotton, in reinforcing slow fashion principles while ensuring that traditional crafts remain relevant in global contexts.

Beyond design practice, the study contributes to wider academic debates by showing how digital platforms can serve as mediators between tradition and innovation, positioning cultural fashion not as a relic of the past but as a dynamic, evolving practice. While the research was limited by its relatively small evaluation sample and controlled academic setting, it nonetheless provides a strong foundation for further exploration. Future work should engage broader international audiences, incorporate advanced technologies such as 3D modeling and AR, and investigate the economic and policy implications of integrating traditional craft into contemporary fashion industries. Ultimately, this research confirms that fashion is both a cultural archive and a vehicle of innovation. By fusing handcraft traditions with digital design, it is possible to honor heritage while also advancing new creative frontiers. In doing so, cultural fashion can thrive as both an expression of identity and a globally relevant design practice for the future.

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