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Engineered Ikat Textile of Gujarat - A Design Intervention
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ABSTRACT

India – the country of rich heritage and culture is pictured through its traditional textiles which are kept alive through generations by the craftsman and his workmanship. Patola of Patan known as a double ikat silk textile, manifests the richness of heritage craft in dazzling colours and admirable motifs, but is a time consuming yarn resist textile. It cannot be duplicated anymore, since the GI recognition is served for its products under the name Patan Patola.

The low cost variants of the celebrated Patan Patola have emerged in the Saurashtra region of Gujarat since last four decades as a single ikat craft. These handloom clusters were generally making weft ikat, but some of them had expertise in double Ikat too. The product which they were making since years was a Saree; the Indian draped garment for women.

In the dynamic world of continuous changes, where the power looms are replacing the traditional handlooms, the craft is struggling to be alive in the world of technology and changing tastes of consumers. A design intervention was planned to adapt the product as per the current market. The present study thus aimed to understand the design practice of these craftsmen and build new layouts for yardages which could be developed into specific styles of garments; catering to the demand of the contemporary markets.

Pattern layouts for yardages were engineered using traditional as well as contemporary motifs and colours. The producers of the engineered textiles were craftsmen and master craftsman who were keen to venture into making new product in cotton as well. The constructed garments were showcased at different platforms for feedback. The craftsmen adopted this new concept to bring variety in their produce and thus enhance the market penetration.

THE CRAFT AND CRAFTSMEN

India – the kaleidoscope of cultures, while Gujarat is the hub of handicraft and traditional textiles, has made remarkable impact not only in India but across the world through centuries. Gujarat is known for its colourful culture. The most magnificent handloom textile of Gujarat is Patola.

Patola, the double Ikat handloom textile of Gujarat is famous for its unique motifs and the technique of making the textile. The Patola of Patan has received its Geographical Indication Certificate, but it is still languishing as a craft. In contrast, the single Ikat craft of Patola is thriving in other districts of Gujarat. Today, in villages of Surendranagar and Rajkot districts of Gujarat, replicas of intricate Patan Patolas are woven with similar but simpler designs. They are produced faster and are cheaper than those of Patan since they are made with single Ikat technique. The Patola sarees of Surendranagar are available in weft Ikat and in all colours as the
craft clusters are using synthetic dyes. These handloom clusters are generally making weft Ikat, but some of them have expertise in double Ikat too. The silk sarees and dupattas are made using acid dyes.

Patola is an unparalleled handloom of Gujarat which is incomparable in its flexibility and adaptability, allowing to experimentation and which gives enough space for innovation. Attempts have been made in 2015 under the Departmental Research Scheme (DRS) of our department of Clothing and Textiles, The Maharaja Sayajirao University of Baroda, Vadodara, to train the artisans in their dyeing practices. The master weaver from village Somasar, Taluka-Muli and district Surendranagar was trained in reactive dyeing for cotton. The master craftsman was in need of new product to be launched in cotton; to make it more affordable to him since procuring silk in the right price was a problem. Moreover, silk cannot be worn all year long. Therefore, the choice of cotton with new product range was the need of the hour.

FOCUS OF THE STUDY

The study was focused on design practice of single Ikat craft of Surendranagar. A descriptive and exploratory research was planned. The study has been divided in two phases and systematic procedure was followed to accomplish the objectives of the study.

To study the design practice three villages Wadhwan, Katariya and Somasar in Surendranagar district of Gujarat were selected for the preliminary visits by following purposive random sampling method.
Design collection of the craftsmen
The researcher collected designs (Plate 1) from the craftsmen during the field visits. It was observed that the craftsmen would record the motifs with pencil/pen/colour pencils or pens on graph paper locally available to them which included A4 size graph paper or graph book with five boxes per cm. One motif occupied 61 x 61 boxes on a graph paper which was nearly 12 cms x12 cms.

Design Analysis
The designs of the Ikat craft of Gujarat i.e. Patola has a distinct feature of grid based pattern. The grid based pattern was obtained by dividing the whole motif into smaller unit as that on a graph sheet. A bunch of yarns (weft) when tied was termed bhaag and it was represented by the smallest square on a graph sheet. This bunch when on loom was termed as ribbon. 61 bhaag made one repeating unit and similarly, one border consisted of 31 x 61 bhaag.

On graph paper (Plate 2)
- 1 box = 1 bhaag
- 1 repeating unit = 61 bhaag
- 1 border = 31 x 61 bhaag
Each ribbon had six weft yarns.
On the loom, the measurements considered were as follows:
- 1 ribbon =1/8th" i.e. 6 weft yarns/ ribbon
- 8 ribbon = 1” i.e. 48 weft yarns/inch
- 1 repeat = 8 x 10” i.e. 384 weft yarns in one repeat.
Every repeat was separated by bobbins. Each bobbin was having six into sixty numbers of wefts in continuous length. It required 24-28 bobbins called kokri to complete one sari i.e. in weaving,
- 1 repeat = 1 bobbin
- 1 sari = 24-28 bobbin
The product usually made by the craftsmen was sari (Plate 3) in silk which measured 45 inches width and 5 meters of length. The fabric count was usually 75 EPI and 48 PPI. The sari of 45 inches would have approximately 3400 warps, and 36 inches width of dupatta would have approximately 2800 warps while 28 inches of stole would have approximately 2000 warps. One unit would repeat 4 times width wise in 45 inches width of sari and 24-28 times length wise excluding the border and pallav. The repeat would also differ according to the yarn diameter and number of ply used. A Sari would have one design repeat of size 10 x 8 inches.

DESIGN INTERVENTION

Motif development using CAD
Based on the analysis of collected designs (on graph paper) from the field, the design drafts were first developed in 60 x 60 pixels using Adobe Photoshop CC (Plate 4). These motifs were developed further for designing the fabric layouts.

![Plate 4: Graph Development of Traditional Patola designs and border using CAD Fabric development](image)

Design Development
An understanding of the design practice of the craftsmen was essential to be able to develop motifs using digital media. The researcher used Adobe photoshop CC 2014 to create motifs in a grid structure. The layouts were developed as per the style of the garment with minimum wastage of fabric. The layouts were engineered into two formats; one with 36” width and another with 45” width. The range of designs was developed for each style and with its 3D modelling. Further the pattern designs on a grid structure were developed and provided to the artisans (Plate 5).
Layouts were explained to the weavers (Plate 5) as per the garment styles. The purpose of its development and the amount required of fabric in each design was made clear to them. The woven pattern design were also given to them without interfering with their design practice. The researcher planned out specific lengths and width and design repeats in consultation with the weaver. The fabric when developed would be put to use as dress materials with designs engineered to fit a garment style.

The designs were divided into two categories i.e. Traditional and Contemporary designs. Ten different styles were selected to engineer the layout. Ten styles were explored in ten colour schemes. Total 100 layouts were prepared and the selection of styles and colours were given to the craftsmen.

The fabric was developed only after a selection of layout and colours were made by the weavers as per their convenience of making it in a stipulated time and their expertise. The weavers finalized six designs for weaving. The necessary changes in colours were made as per the weavers requirements.
Total six layouts (Plate 6) were selected by the different craftsmen of Katariya and Somasar. Two different layouts from traditional category and four from contemporary were selected. From these six layouts, first two were developed in cotton and dyed with reactive dyes by the craftsmen of Somasar. And rest were developed in silk using acid dyes.

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**The Packaging of the fabrics**
The brand packaging was done for the craftsmen to give him an opportunity to increase sales. (Plate 8) The handwoven engineered fabrics of Ikat were packed in the plastic bag with the padded material inside for support. The Picture of 3D modeling was placed on the top to show the consumer the final styling of the garment. The packaging was the part of intervention to promote the product as a brand in the market for the craftsmen.
Product Promotion and Feedback
The engineered layouts of Single Ikat Patola fabrics were displayed in the department of Clothing and Textiles for its promotion and feedback in terms of overall aesthetic appeal, cost effectiveness, and market acceptability. The potential consumers were introduced to the foremost idea of the product that was to be launched soon. The engineered fabrics as well as stitched garments were exhibited in the Exhibition. The Style I and II were in cotton dyed with reactive dyes and four were in silk. (Plate 9)

The single Ikat engineered fabrics exhibited were evaluated by 50 respondents which included both men and women. The collected opinions were analyzed and represented as graphs.

Respondent’s profile
The data analysis of the profile of respondents revealed that the age group of the respondents was in the range of 19 – 72 years. The age group and occupation of respondents was diverse since the invitation was open to all especially with a purpose to use this exhibit as a platform to bring about awareness of the existence and changes taking place in this craft. The group included teenagers and adults; were pursuing their fashion / clothing / textile /design studies or were employed as teachers in clothing / textile /design / fashion education, as young or mid aged fashion entrepreneurs.

Out of the total 50 respondents, 47 were females while three were males. One male respondent was working while the other was a retired Professor and the third one was a student. Of the total 47 females, 22 were working women and 25 were under-graduate and graduate students. The 22
working women respondents were further categorized, of which 64 per cent women were academicians and 34 per cent were fashion entrepreneurs.

**Ranking of garment styles as displayed in the images**

It is evident from Graph 1 that the garment style VI was ranked as number one by the maximum respondents i.e. 56 per cent and ranked sixth by the least number of respondents i.e. only four per cent. The reason for it being the most appreciated style was attributed to its cut, silhouette and colour combination as suggested by many respondents. The garment was a sleeveless anarkali kurta with round neck and contrasting yoke in an accentuated neutral colour scheme. The point of emphasis was its gold zippered front opening. The next best style which received rank 1 was style IV with a good number of responses i.e. 26 per cent. This style too had a yoke in contrasting colour with stand collar and three-fourth sleeve and full circular skirt in purple. Style I, III and V had equal number of respondents i.e. eight per cent who ranked it as number one where as Style II got the minimum responses as rank 1.

The garment style III had received rank 2 by highest number of respondents i.e. 26 per cent where as style V was given rank 3 by maximum of 28 per cent respondents. It was noted that ranking especially for style III, IV and V were spread almost equally along the scale of rank 1 to 6. All these three styles were different from each other and made in bright silk fabrics.

On analysis of each garment style and its ranking received it was observed that Style I and II were given rank 6 by the maximum number of respondents i.e. 28 and 32 per cent respectively. These two garments were made from cotton fabric dyed with cold reactive dyes (sponsored by Colorant India). These cotton garment layouts could not fetch good results probably they appeared less bright as compared to the silk garments displayed alongside. Moreover, it could also be attributed to the fact that the actual colours of the fabric layout turned out to be different than those displayed in the images of the garment styles. The researcher had no control over the situation since the single Ikat craftsmen failed to stick to the suggested colour palette and delivered it only in nick of time to be displayed.

**Responses regarding the cost effectiveness of the engineered Ikat fabrics**

The cost was decided as per the raw materials and labour used by the craftsman where in the requirement of the amount of fabric length for each style was different. The price for the cotton
dress material was Rs. 2000 and Rs. 3000 where as for silk dress materials it ranged between Rs. 6000 – Rs. 8000.

Graph 2: Opinion regarding the cost effectiveness of the engineered Ikat fabrics

Graph 2 revealed the cost effectiveness of the engineered Ikat fabrics. From total 50 respondents, 34 respondents agreed buying Style I for the given price. 33 respondents were said yes to Style IV. 28 respondents were disagreed to buy Style V at given price. 29 respondents were agreed for Style VI.

Analysis of the preference to purchase the displayed dress materials at the listed price Graph 2 revealed that 56 to 68 per cent of respondents agreed to buy them at the given price for all the styles with the exception of dress material for style V. This was the only style which had a design worked in reverse i.e. the Ikat designs are usually seen on a darker ground, however, this dress material had a yellow ground with a blue design on it which is very unlike the Patola patterning. Probably, a reason more number of respondent disagreed to purchase it at a given price. Though style VI was found to be the most appealing and well appreciated by all the respondents. For style I one in cotton fabric which fetched maximum responses (34 respondents) in terms of agreeing to purchase at a given price of Rs. 2000 in comparison to Rs. 8000 for style VI in silk. However, the price was higher due to the amount of fabric required for that particular style which would require four metres of silk fabric in contrast to 2.5 metres required for style I in cotton material. Since the respondents were majority of students the cost effectiveness of the engineered Ikat fabrics (to be used as dress materials) for all styles were majorly accepted.

Designing of the layouts were planned with maximum feasibility for the craftsmen and minimal wastage when the garment is stitched. The layouts were design in such a manner that craftsmen could directly sell the engineered fabric to the consumers. This approach was planned for the sustainability of the craft as well as craftsmen.

Plate 10: Ramp walk with Engineered Ikat Stitched kurtis
The garments were displayed (Plate 10) in the Consortium of Green Fashion 2016 (CGF), International Conference on the theme ‘Empowerment of Khadi and Handloom.’

CONCLUSION

During the study, the researcher found that all the villages, involved in Ikat practices, were following similar pattern of working. The artisans in these villages were only involved in the making of saris and dupatta, which was taken up as job work by many. Most of them were poorly paid in comparison to the time and skill invested in making a single product; which promoted the chances of these artisans to shift to other occupation. However, the design intervention done for the weavers helped them to launch a new product in the market i.e. an engineered ikat fabric with different layouts for Kurtis/Kurtas in both cotton and silk was launched through an exhibition to cater to wider market segment.

This unstitched material was successfully designed to be tailored into various styles which were suitably packaged for its effective promotion. As per consumer responses the engineered fabrics were found to be more suited to niche market. These fabric layouts could be easily replicated by the artisans in other colour palettes with ease as per the consumers’ choice. Moreover, these layouts were designed to effect minimum or no fabric wastage during pattern cutting. However, these layouts had to be reworked if it had to be reproduced in different fabric widths which the artisans conveniently managed. Hence, this gave the investigator a hope that the artisan will be able to adapt these layouts and make newer ones too to sustain themselves in the contemporary market.

BIBLIOGRAPHY