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J Keerthi

Teaching Associate, Department of Apparel and Textiles, College of Home Science, APGC, Lam, Guntur, Andhra Pradesh, India

Jyoti V Vastrad

Dean, College of Community Science, CAU, TURA, Meghalaya, India

Rendering of adopted designs with stencil printing technique on sarees

J Keerthi and Jyoti V Vastrad

Abstract

'Stained Glass' or filling glass is an art, with rich colours and beauty which was initially used in windows of cathedral of Europe and the Roman churches during 1100 A.D.-Stained glass windows also used as an educative resource to educate people about biblical stories during the early Roman period. In this research-stained glass were taken as design inspirational object and adopted using Corel DRAW-12 software. Collection of 100 stained designs, rendered 50 based on suitability to the saree embellishments under five categories *i.e.* animal, bird/insect, floral, stylized and geometrical. Selected designs were rendered with stencil printing technique on sarees and accepted and Saree II with bird motif ranked first & saree I with animal motif ranked second by the consumers.

Keywords: Embellishment, rendering, stencil printing, stained glass, source of inspiration, sarees

Introduction

Fabric Embellishment very important aspect for changing trends according time. Every person wants to be unique with their unique style. To satisfy the consumer desires and wants fashion/textile designer plays key role. They set or create trend by the inculcation of these innovative designs to fabrics. Fabric embellishment means adding other materials or colours such as tassels, embroidery, painting, dyeing and printing to the fabrics or apparels to establish the beauty of the fabrics or apparels. Among them Stencil printing method is the simple, easier, cheaper and it requires less man power, equipment produce beautiful deigns than the other fabric ornamentations. Another benefit is that the less wastage of water, dyes and less damage to the environment than dyeing. Stencil printing was also practiced in India during the Gupta period (6th to 8th century). Now this stencil printing technique advanced with screen printing technique for fast process. Appearance plays key role to build a status to the wearer in the society. To embellish clothing source of inspiration plays very important role in any design process. It helps in evolving a concept which helps in developing new design idea, characteristics and in creating a distinct design. It may be from nature *i.e.* flowers, leaves, plants, hills, animals, stars, moon etc., or else from artificial objects *i.e.* musical instruments, ornaments, architectural objects, craft works, etc.

Bhasin (2015) ^[1] described that the source of inspiration in Kanchipuram sarees is from the temples of Kanchipuram with their unique architecture styles. This major influences for the Kanchipuram designers to choose their inspiration.

Gupta and Joseph (2015) ^[2] inspired by Greek motifs, collected eighty motifs and sketched manually in black and white colour on handmade sheet for developing designs suitable for table cloth.

Meenu and Rupali (2014) ^[5] have explored and studied the traditional designs used in miniature paintings of Rajasthan to simulate textile designs suitable for fashion apparel.

To preserve the Indian cultural heritage as well as to maintain the value of inimitable Indian textiles, monumental designs of India were taken as inspiration by Kishore *et al.* (2013) ^[4] to develop designs suitable for textiles.

Stencil printing is a resist style of printing methods of applying surface designing. It was first developed by Japanese, was the precursor of modern screen printing. Today it is considered a handcraft (Joseph, 1980) ^[1]. Stencil is the name used for the thin cut outs which are usually made of paper, plastic or metal. Separate pattern is cut out from a special waxed paper or thin metal sheet for each colour (Sara, 2014) ^[3]. It must be planned so that they register or fit together properly to result in a perfect print. A difficulty with stencil printing is that the design areas must be connected to prevent parts of the stencil from falling out.

Corresponding Author:

Jyoti V Vastrad

Dean, College of Community Science, CAU, TURA, Meghalaya, India

To offset this problem, Japanese stencil artists developed a method of tying the various sections together with silk filament or human hair (Joseph, 1980)^[1].

A stencil design is usually limited to the application of 2-3 colours and is generally used for printing fewer repeats on a narrow width of fabric (Swami, 2011)^[4]. The Pigments are used as colours for printing. These are insoluble colour particles that are held on the surface of fabric by agent. The thickened dye or pigment is called print paste (Sara, 2007)^[2]. The stencil printing process can be accomplished with the help of a cotton swabs, brushes, or air pressure pumps, each giving the desired effects (Swami, 2011)^[4]. Printing allows great design flexibility and relatively inexpensive to get patterned fabric. Patterns can be achieved with printing that are not possible with any other method (Sara, 2007)^[2].

In this research article, Stencil printing technique was used as rendering technique for the development of fabric embellishment, because it allows great design flexibility and relatively inexpensive to get patterned fabric. This article helps small entrepreneurs to start mini business with this stencil printing technique to decorate apparels. It will also help for further research and advanced application for fast production process and marketing in huge production

Materials and Method

The study was undertaken to embellish the sarees through one of the surface embellishment technique i.e. stencil printing during the year 2020.

Selection and pre-treatment of fabric

A market survey was conducted to know the availability of cotton colored sarees based on experts preferences and were sourced from Mangalagiri of Guntur district and from Vijayawada of Krishna district of Andhra Pradesh state. Coloured Cotton sarees contain starchy matter to remove that, materials were soaked in luke warm water with 1% detergent. Squeezed and dried under shade. Later, fabrics were ironed neatly for further printing process. Other raw materials like-acrylic colours and tools were procured from local market.

Stencil Printing

Stencil printing technique is the oldest and easy method to decorate apparel and fabrics. It is a method of printing which is done using stencils to resist, parts of design from printing colour on fabric. It is a quicker method of executing design in various colours and shades. Stencils can be made out of various materials from a waxed paper to X-ray sheet to metal plate.



Fig 1: Design sheets



Fig 2: Wax coated design



Fig 3: Stencil cutting



Fig 4: Developed stencils

Preparation of Stencils

Handmade stencils were used in this research work. Developed designs - animal, bird, floral, stylized and geometric motifs were photocopied and stuck on bond

papers that are was later dipped into wax solution to make them water repellent. Depending on the colours used in the design the numbers of stencils were cut precisely. Care was taken to keep the design intact and the edges.



a. The printing bed

b. Design registration

c. Stencil placement

Printing with Stencils

Sarees Crease free saree was placed over the developed printing bed and design placements was placed and marked. Designs were printed on sarees by stencil printing technique (Figure 1.). The sarees were hung on lines for 24 hrs. Five sarees with different design placement were printed.

Preference for stencil printed sarees

Visual analysis was done by panel consisting of 30 members who assessed the developed stencil printed designs through their opinion and preferences. Finished sarees were draped on dress forms for display so that pallu also could be visualized and the motif, design placement could be judged.

Statistical analysis

Weighted Mean Score (WMS) that was calculated for the preference data was calculated using the formula

$$\text{Weighted Mean Score} = \frac{\sum S_1 F_1}{N}$$

Where, S_1 - Scores derived by the respondents answer, F_1 – Frequency, N - Sample size.

Five point rating scale was used to obtain the preference for developed stencil printed sarees. Weighted Average Ranking (WAR) was calculated using the formula

$$\text{Weighted Average ranking} = \frac{\sum R_i F_i}{f_i}$$

Where

R_i - Ranks given by consumers, F_i - the frequency

Results and Discussion

Description of sarees designed in stained glass motifs

Saree-I: Animal motif A4 developed in four colour scheme was done on saree-I. It was a pink colour saree with motif used as border, in a manner that it looked like a half saree model. The background stained glass effect in the motif was done in a combination of two colours as shown in fig. 4.36.

Saree-II: Peacock motif used in pairs was selected to be printed on the second saree as seen in fig. 4.37. Motifs were shown only in the saree central part as pairs and in singles in the pallu region. Printing was done on yellow background in tetradic colour harmony. Shaded effects were created in the peacock motif and in the back ground of motif.

Saree-III: Design on this saree (Fig. 4.38) was printed on a background similar to saree-II. Tetradic colour harmony was used in the flowers while background was done in shades of blue to simulate stained glass effect. The blouse for the saree was done with a small part of motif at the sleeve border.

Table 1: Description of the saree designed with stained glass motifs

S. No	Saree type	Saree colour	Motifs	Colour of motif	Placement of motif
1	Saree -I	Light pink	Animal (Elephant)	Orange and blue	Border part, look like half saree model
2	Saree -II	Yellow	Bird (Peacock)	Blue- green	Centre part as pairs
3	Saree -III	Yellow	Flowers	Blue shades	Border part in single
4	Saree -IV	Greenish blue	Stylized	Red – purple	Border part in single
5	Saree -V	Pink	Geometric	Blue - purple	Border part as pairs

Saree-IV: Monochromatic colour harmony motifs were done on a greenish blue saree. Motifs were printed in red-purple shades, with a lighter background and a deeper colour in the stylized motif. Similar to the above sarees, the blouse was designed with only border pattern was shown in the fig. 4.39.

background. Shades of yellow was shown in the motif background while motif was done in blue-purple colour. The blouse for this saree was done with a border and one single motif on each sleeve.

Saree-V: Geometric motif was used in pairs to create the pattern in this saree as shown in fig. 4.40 Complementary colour harmony was used in printing the motif on pink

Consumer acceptance of Stencil printed cotton sarees

Table 3 records the weighted mean scores of consumer acceptance of Stencil printed cotton sarees. The details are explained as follows.

Table 2: Consumer acceptance of Stencil printed cotton sarees. N = 30

S. N.	Saree type	Suitability of design (WAR)	Clarity of design (WAR)	Motif colour combination (WAR)	Print quality (WAR)	Overall appearance (WAR)
1	Saree -I (Animal motif)	3.10	3.43	3.60	4.03	4.13
2	Saree -II (Bird motif)	3.20	3.33	3.96	4.13	4.20
3	Saree -III (Flower motif)	3.86	3.53	4.13	3.73	4.10
4	Saree -IV (Stylized motif)	3.96	4.13	4.03	4.33	4.06
5	Saree -V (Geometric motif)	3.43	3.56	3.53	3.40	4.03

Suitability of design

It is observed from the above table that, stylized motif saree has scored highest weighted mean scores (3.96), followed by floral designed saree (3.86). Whereas elephant motif saree records lowest scores (3.10) towards suitability of design for stencil printing on saree.

Clarity of design

Majority of respondents opined that stylized motif saree (4.13) has recorded higher score than geometric motif saree (3.56) and floral motif saree (3.53) for clarity of design. On the other hand peacock motif stencil printed saree scored (3.33) lowest weighted mean scores.

Motif colour combination

Floral designed stencil printed saree motif colour combination was accepted by majority of respondents (4.13) followed by stylized (4.03) and peacock motif (3.96) colour combination.

Print quality

Highest weighted mean scores was observed for stylized motif saree (4.33) than peacock designed (4.13) and animal motif saree (4.03) towards print quality. Whereas geometric designed saree (3.40) scored lowest weighted mean scores.

Overall appearance

Peacock designed saree scored (4.20) higher weighted mean scores, followed by elephant designed saree (4.13) and floral

designed (4.10) with respect to overall appearance of design on saree. Geometric designed saree records lowest (4.03) weighted mean scores for overall appearance of design on saree.

3. The consumer preference for stencil printed cotton sarees

Data presented in Table 3 depicts the preference of consumer towards stencil printed sarees. Bird motif (peacock) stencil printed saree was ranked first by the majority of respondents (86.66%). Elephant motif stencil printed saree was secured second rank (83.33%). Floral and stylized motif sarees were placed in third and fourth rank respectively. Whereas geometric motif stencil printed saree was ranked in fifth place by the majority of consumers (93.33%).

Reasons for preference of the stencil printed sarees

Table 4 represents the data on consumer evaluation of stencil printed sarees. Saree II scored highest average (2.8) followed by saree IV (2.56) for use of stained glass motifs on saree is appropriate. Sarees II, III and IV scored (2.5) towards use of stencil printing technique in rendering the design in apt by the consumers. Consumers opined that design is unique and different from ordinary printing for saree II (2.7) and saree I (2.5). Saree I with animal motif has highest average scores (2.93) and saree II with bird motif (2.8) with respect to overall appearance of the product is appealing or unique.

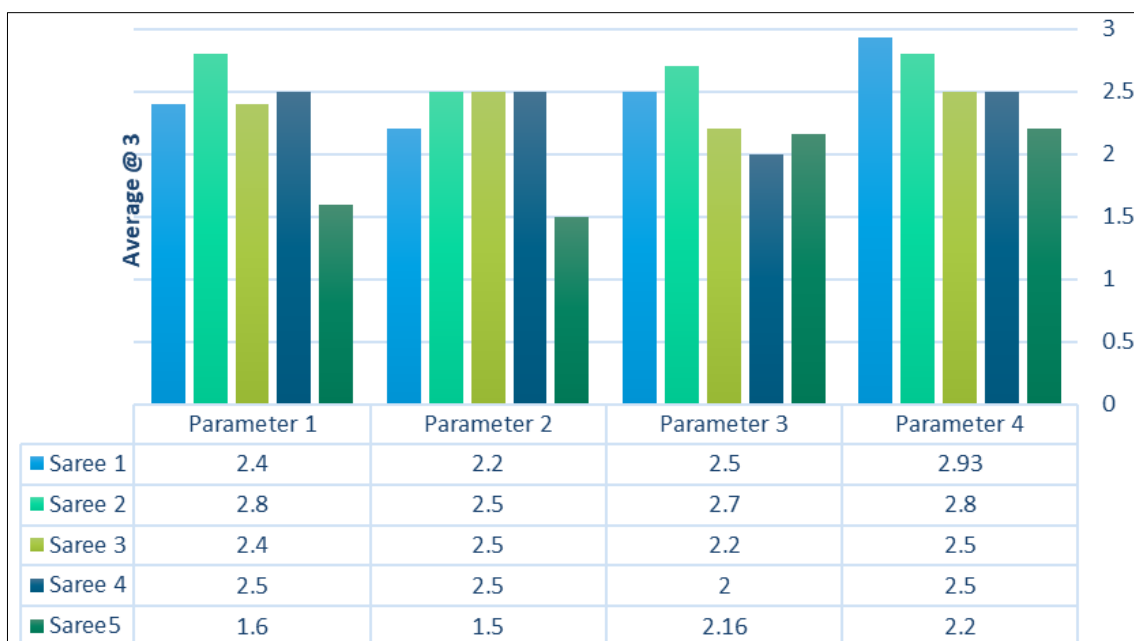
Table 3: Consumer preference for stencil printed cotton sarees. N= 30

S. No	Saree type	Ranks by the respondents					WAR
		1	2	3	4	5	
1	Saree –I (Animal motif)	04 (13.33)	25 (83.33)	01 (3.33)	-	-	1.9 ^{II}
2	Saree –II (Bird motif)	26 (86.66)	04 (13.33)	-	-	-	1.13 ^I
3	Saree –III (Flower motif)	-	01 (3.33)	26 (86.66)	03 (10.00)	-	3.06 ^{III}
4	Saree –IV (Stylized motif)	-	-	01 (3.33)	27 (90.00)	01 (3.33)	3.86 ^{IV}
5	Saree –V (Geometric motif)	-	-	01 (3.33)	01 (3.33)	28 (93.33)	4.9 ^V

Note: Figures in parentheses indicate percentages WAR: Weighted Average Ranking

Table 4: Reasons for preference of the stencil printed sarees. N=30

S. No	Parameter	Saree-I	Saree-II	Saree-III	Saree-IV	Saree-V
1	Use of stained glass designs on sarees are appropriate	2.4	2.8	2.4	2.56	1.6
2	Use of stencil printing technique in rendering the designs apt	2.2	2.5	2.5	2.5	1.5
3	The design is unique and different from ordinary Printing.	2.5	2.7	2.2	2.0	2.16
4	Overall appearance of the product is appealing or unique	2.93	2.8	2.5	2.5	2.2



Graph 1: Graphical representation of consumer evaluation on developed sarees



Fig 4.36: Finished saree-I.



Fig 4.37: Finished saree-II

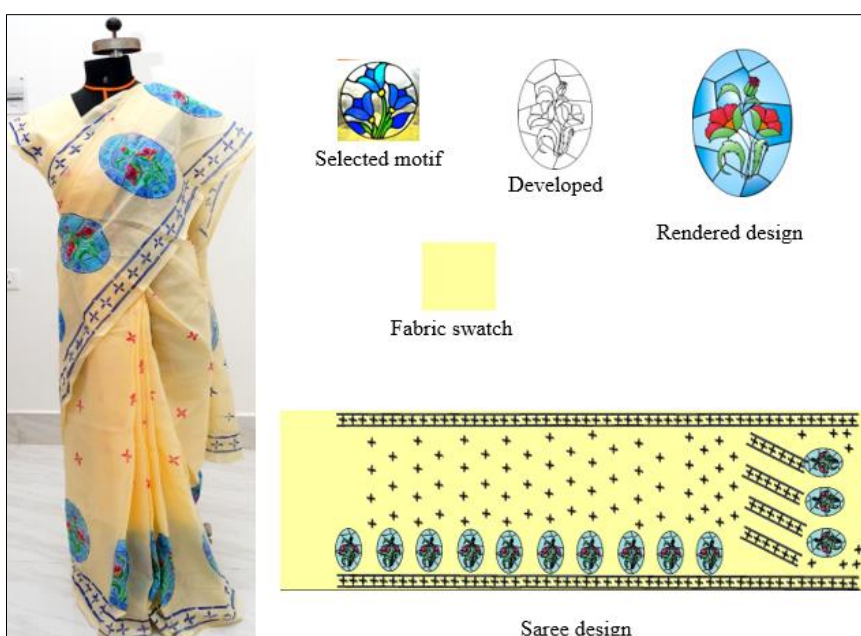


Fig 4.38: Finished saree-III.



Fig 4.39: Finished saree-IV



Fig 4.40: Finished saree-V.

Conclusion

Developed stained glass designs animal, bird, floral stylized and geometric designs were rendered perfectly with stencil printing technique on sarees. All the designed sarees accepted and Saree II with bird motif ranked first & saree I with animal motif ranked second by the consumers (Graph-1 or table 4). This research work would be helpful to the designers to create innovative designs in easy manner with this technique.

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