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Commercial viability of screen printed silk stoles using *Aipan* motifs

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Abstract

The present study was undertaken to design silk stoles using *Aipan* motifs and evaluate their commercial viability. Eight designs for silk stole were prepared into three different colour schemes, contributing to 24 sheet of designs. Out of which the most preferred eight designs of stoles were shortlisted and used to develop the stoles. The preferences of the prepared stoles were taken from eighty post graduate students i.e. forty students each from Ludhiana (Punjab) and Udham Singh Nagar (Uttarakhand) Department of Apparel and Textile Science, College of Community Science between the age 21 to 29 years. To determine the suitability of the selling price and overall impact of the prepared stoles, a questionnaire was developed and administered in the sample space with a sample size of 80 respondents. These silk stoles were saleable between price range of ₹1,600 to ₹2,300 earning 25% profit.

Keywords: *Aipan* motifs, designs, screen printed silk, commercial

Introduction

Aipan taken from the Sanskrit word "*Lepana*" means doing plaster. *Aipan* is one of the well-known folk arts of Uttarakhand's *Kumaun* area. It is a type of traditional floor painting that is varied in nature and has both religious and aesthetic relevance. *Aipan* is traditionally drawn using wet ochre mud, known as *Geru*, which is red in colour and white paste (*Biswar*) at the house's sacred place and main entrance for special religious rituals or auspicious events. *Aipan*'s designs and motifs are classical in style, with geometrical figures, floral designs, symbolic motifs and figures of Gods and Goddesses. Traditionally this art was drawn by hand on doorsteps and walls, which was time consuming and laborious. However, because of the influence of westernization and the mobilization of local populations from their native places, this art form has been declining over time. Few designers and researchers are concerned about the resurgence of vanishing of this folk arts, so it is proposed that this art forms be rejuvenated in the form of colour variation, design modification and product diversification. It can also increase the income of the artists by giving them a new media to exhibit their painting. Thus, artists are always in search of new ideas and the inspiration from *Aipan* folk art, the investigator attempted to bring out the versatility and diversity of these motifs by adapting traditional motifs into creating new designs for stoles.

Methodology

Documentation and selection of *Aipan* motifs

The motifs used in *Aipan* art were documented from primary and secondary sources which included woman involved in *Aipan* art work and religious experts as primary sources. The secondary source included information from the library, internet, and magazines. The motifs which were suitable for screen printing were modified using computer software Corel DRAW X7.

Design development using adapted *Aipan* motifs

The modified *Aipan* designs were scored by a panel of twenty judges from Department of Apparel and Textile Science, PAU, Ludhiana. Each shortlisted design was further developed in three different colour combinations which included monochromatic, complementary and analogous colour schemes. One best colour combination was selected from each shortlisted design by the judges. On the basis of preferences of judges, eight most preferred designs of stoles were selected for preparation of tabby silk stoles using different adapted *Aipan* motifs.

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Preparation of the screen printed stoles

Different screens were prepared according to different sizes. The shortlisted designs were transferred on a film sheet by printout, which was then used to prepare the screen. An amount of pigment colour (as per requirement of shade) was added to binder and further turpentine oil was added to this paste. Water was also added to lower down the consistency of the paste, if needed and stirred vigorously in one direction. Printing was carried out in dyeing and printing lab of the Department of Apparel and Textile Science. The prepared printing paste was poured on one side of the screen frame and was spread over the tabby silk fabric of size 200×68.58 cm with uniform pressure by squeeze. The screen was lifted carefully and paste was allowed to dry.

Finishing and curing of printed stoles

For printed stoles, curing is very essential to fix the pigment colours on the fabric. After printing, the curing of printed stoles was done at 140 °C for 4-5 seconds. Stoles were dried and washed. All the eight stoles prepared through screen printing technique were embellished using tassels.

Preferences of consumers for prepared screen printed stoles

The preferences of the stoles were taken from a sample of eighty college going students i.e. forty students each from Punjab Agricultural University, Ludhiana, Punjab and G.B. Pant University of Agriculture and Technology Pantnagar, Udham Singh Nagar, Uttarakhand in the age group of 21 to 29, from the College of Community Science. A questionnaire was constructed to study the preferences of the respondents

for the prepared stoles. The different attributes for the preference of stoles included uniqueness of design, arrangement of motifs, colour combination, intricacy of design and overall appearance. Cost price of each prepared stoles was calculated by keeping in mind the cost of fabric, embellishments, printing colours, screens and labour cost. A profit margin of twenty five per cent was added to the cost price of each prepared stole to calculate the quoted price.

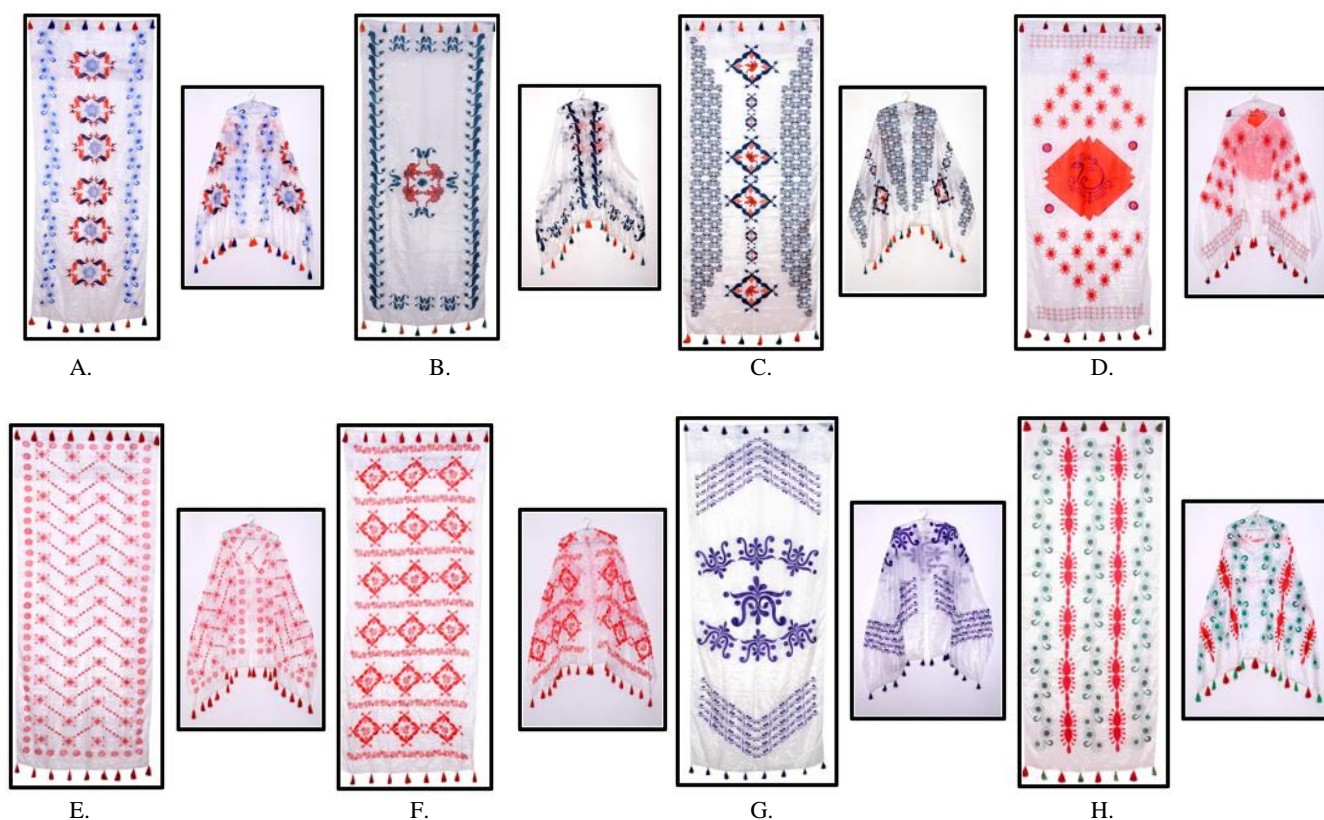
Results and Discussion

Eight stoles using *Aipan* motifs were prepared in this study and their commercial viability was studied by taking the preferences of eighty respondents and their results are given below.

Evaluation of stoles designed using adapted *Aipan* motifs

Each eight designs of stoles were developed into three colour combination and evaluated by twenty judges and scored. It is evident that the design A was most preferred in complementary colour scheme using blue and orange colours. Design B was preferred in complementary colour scheme with blue-green & red-orange colours. Similarly complementary colour scheme was preferred to develop design C with use of blue-green & red-orange colours. The design D was liked using analogous colour scheme with red, red-violet and red-orange colours. Design E and F were developed using monochromatic colour scheme with red colour. Design G was developed using monochromatic colour scheme with violet colour and design H was developed using complementary colour scheme with red & green colours.

Screen printed stoles



Preferences of consumers for prepared stoles with screen printing technique

The preferences of the prepared stoles were taken from eighty post graduate students i.e. forty students each from Ludhiana (Punjab) and forty students from Udham Singh Nagar

(Uttarakhand). Table 1 shows the preferences given by the respondents on the basis of design attributes which included uniqueness of design, arrangement of motifs, colour combination and intricacy of design.

Table 1: Preferences of respondents on the basis of different design attributes n=80

| Stoles | Uniqueness of design | | Arrangement of motifs | | Colour combination | | Intricacy of design | |
|--------|----------------------|------|-----------------------|------|--------------------|------|---------------------|------|
| | WMS | Rank | WMS | Rank | WMS | Rank | WMS | Rank |
| A | 4.52 | V | 4.41 | V | 4.95 | I | 4.60 | IV |
| B | 5.31 | I | 4.74 | II | 4.56 | V | 4.69 | III |
| C | 4.89 | II | 4.61 | III | 4.90 | II | 4.54 | V |
| D | 4.61 | IV | 5.15 | I | 4.40 | VI | 4.70 | II |
| E | 4.82 | III | 4.36 | VI | 4.86 | III | 4.94 | I |
| F | 3.82 | VII | 4.60 | IV | 3.73 | VIII | 4.21 | VII |
| G | 3.71 | VIII | 4.11 | VII | 3.97 | VII | 4.47 | VI |
| H | 4.30 | VI | 4.01 | VIII | 4.61 | IV | 3.81 | VIII |

The uniqueness in design of stole act as differentiating parameter and these add up to a distinctive feature in existing design, ultimately creating value to the product. In order to know the uniqueness of the designs, preferences were taken from the respondents which are shown in table 1. Stole B having the WMS of 5.31 was ranked first and stole G with WMS of 3.71 was ranked last. The creative arrangement of motifs leads to the development of design. The ranking of the prepared stoles revealed that stole D was most preferred with

the WMS of 5.15 and stole H having WMS of 4.01 was the least preferred in terms of arrangement of motifs. It is evident that stole A with WMS of 4.95 was the most preferred colour combination and was given first rank. For selection of any stole used by the consumers, intricacy act as an important parameter in the designing of the stoles. The first rank was given to stole E having WMS of 4.94, whereas eighth rank was obtained by stole H with WMS of 3.81.

Table 2: Preferences of the respondents for overall appearance of the stoles n=80

| Stoles | Very Good | | Good | | Fair | |
|--------|-----------|-------|------|-------|------|-------|
| | F | % | F | % | F | % |
| A | 26 | 32.5 | 35 | 43.75 | 19 | 23.75 |
| B | 34 | 42.5 | 35 | 43.75 | 11 | 13.75 |
| C | 48 | 60 | 17 | 21.25 | 15 | 18.75 |
| D | 27 | 33.75 | 26 | 32.5 | 27 | 33.75 |
| E | 16 | 20 | 43 | 53.75 | 21 | 26.25 |
| F | 14 | 17.5 | 38 | 47.5 | 28 | 35 |
| G | 21 | 26.25 | 19 | 23.75 | 40 | 50 |
| H | 11 | 13.75 | 22 | 27.5 | 47 | 58.75 |

The overall appeal of the products influence the buyer in various ways. Before making any buying decisions, it leaves an everlasting impression on the mind of the buyer. Preference of the choice of respondents was done on the basis of overall appearance on the three parameter as fair, good and very good. The data pertaining to preference of respondents for overall appearance of stoles is furnished in table 2. The stole C was considered very good by 60 per-cent of the respondents. Stole E was considered good by approximately 54 per-cent of the respondents. The stole H was considered

fair by approximately 59 per cent of the respondents.

Cost calculation of prepared stoles

An effort was made to study the commercial viability of the prepared silk stoles. Cost price of each prepared stoles was calculated by keeping in mind the cost, embellishments, printing colours, screens and labour cost. The cost of fabric for each stole costed Rs 400/-. The quoted price was worked out by adding twenty five percent profit to the cost price.

Table 3: Cost calculation for the prepared stoles

| Stole | Raw material cost (₹) | | | Calculated cost and quoted price (₹) | | | | |
|-------|-----------------------|----------------------|-------------|--------------------------------------|-----------------|---------------------|---------------------|--------------|
| | Embellishments (a) | Printing colours (b) | Screens (c) | Finishing cost (d) | Labour cost (e) | Cost price (a to e) | Profit margin (25%) | Quoted price |
| A | 80 | 150 | 795 | 50 | 250 | 1725 | 431 | 2156 |
| B | 80 | 150 | 780 | 100 | 250 | 1760 | 440 | 2200 |
| C | 80 | 100 | 620 | 50 | 250 | 1500 | 375 | 1875 |
| D | 80 | 200 | 820 | 50 | 300 | 1850 | 462 | 2312 |
| E | 40 | 100 | 680 | 50 | 150 | 1420 | 355 | 1775 |
| F | 40 | 100 | 600 | 50 | 150 | 1340 | 335 | 1675 |
| G | 40 | 100 | 585 | 50 | 150 | 1325 | 331 | 1656 |
| H | 80 | 150 | 695 | 50 | 250 | 1625 | 406 | 2031 |

Opinion of the respondents regarding the suitability of price of the prepared stoles

Price is an important element considered by the buyers before buying any product. Pricing is a key for the sale of the products and to know the suitability of price for the prepared stoles, responses were taken from the respondents.

Table 4: Opinion regarding the suitability of price of the prepared stoles n=80

| Stole | Selling Price (₹) | High | | Appropriate | | Low | |
|-------|-------------------|------|-------|-------------|-------|-----|-------|
| | | f | % | F | % | F | % |
| A | 2150 | 27 | 33.75 | 53 | 66.25 | - | - |
| B | 2200 | 35 | 43.75 | 45 | 56.25 | - | - |
| C | 1900 | 22 | 27.50 | 58 | 72.50 | - | - |
| D | 2300 | 32 | 40.00 | 48 | 60.00 | - | - |
| E | 1800 | 4 | 5.00 | 62 | 77.50 | 14 | 17.50 |
| F | 1700 | 17 | 21.25 | 50 | 62.50 | 13 | 16.25 |
| G | 1650 | 14 | 17.50 | 59 | 73.75 | 7 | 8.75 |
| H | 2030 | 18 | 22.50 | 56 | 70.00 | 6 | 7.50 |

The table 4 shows that the majority of the respondents considered the selling price for stole A, C, E, F, G and H as appropriate, except for stole B and D. Only 5% of the respondents considered that selling price as high for stole E. Only less than 10% of the respondents considered that selling price as low for stole G and H as reported by 8.75 and 7.50% respondents respectively.

Assessment of the profit margins of prepared stoles

Quoted price was calculated after adding twenty five percent profit margin to the cost of each stole. Respondent's opinion about the quoted price for each stole was taken. Then, they were asked to mention the selling price for each stole that they would be ready to pay. Average selling price was calculated for each stole. Quoted prices for prepared stoles A, D, G, H was ₹2156/-, ₹2312/-, ₹1656/- and ₹2031/-, respectively, while the average selling price suggested by the respondents was little lesser, i.e. ₹2150/-, ₹2300/-, ₹1650/- and ₹2030/- respectively. Quoted price of stoles C, E and F was ₹1875/-, ₹1775/- and ₹1675/- respectively, while the average selling price suggested by the respondents was little higher, i.e. ₹1900/-, ₹1800/-, and ₹1700/- respectively. The stoles B and D had highest average selling price i.e. ₹2200/- and ₹2300/- respectively, because the number of colours was more which added to the cost of the screen in both the cases.

It was observed that highest profit was evident for stole F, i.e. 26.86 percent, followed by stole E & C with profit margin of 26.76 percent and 26.66 percent respectively. Stole H has profit margin of 24.92 percent. Stole A, G and D has profit margin of 24.63 percent, 24.52 percent and 24.32 percent, respectively. The calculated z-values of the prepared stoles for profit margin were found to be significant at 5% level of significance (Table 5).

Thus, there was a significant difference in selling price and cost price of the prepared stoles. The cost price of prepared stoles could be lowered with the mass production thus profit margin is expected to be higher.

Table 5: Assessment of the profit margins of the prepared stoles n=80

| Stole | Cost price (₹) | Quoted Price (₹) | Average Selling Price | z-value | Percentage profit |
|-------|----------------|------------------|-----------------------|---------|-------------------|
| A | 1725 | 2156 | 2150 | 9.51* | 24.63% |
| B | 1760 | 2200 | 2200 | 8.44* | 25.00% |
| C | 1500 | 1875 | 1900 | 10.56* | 26.66% |
| D | 1850 | 2312 | 2300 | 10.48* | 24.32% |
| E | 1420 | 1775 | 1800 | 21.01* | 26.76% |
| F | 1340 | 1675 | 1700 | 15.04* | 26.86% |
| G | 1325 | 1656 | 1650 | 15.87* | 24.52% |
| H | 1625 | 2031 | 2030 | 8.68* | 24.92% |

*Significant at 5% level of significance

Conclusion

The adaptation and reorientation of *Aipan* motifs helped to make different and fresh designs. This will maintain the interest among the designers for the demand of new and innovative designs. The high acceptability of the prepared stoles among respondents have shown that these stoles are commercially viable. The prepared stoles with adapted motifs were highly appreciated by the respondents. These silk stoles were saleable between price range of ₹1,600 to ₹2,300 earning 25 per cent profit. The cost price of prepared stoles could be further lowered after the mass production, thus increasing the profit margins.

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