

Design development of traditional embroidery motifs in knitwears through computer aided designing

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■ **ABSTRACT** : Technological advancements have brought automation and computer aided manufacturing (CAD/CAM) system in all the areas including textile and garment industry. CAD has specific design system using computer as a tool to design anything from aircraft to knitwears. India has a fairly large hosiery industries and most of the hosiery units are concentrated in Punjab. Today, the consumption of knitted goods has increased rapidly and consumer demand for garments which are comfortable and fashionable. Computerized embroidery machines are available to cater the needs of bulk production and to match the international standards. *Phulkari* is the traditional embroidered shawl of rural folk of Punjab. Now as the traditional products are being widely used and adopted in latest fashion trends, the designers have begun to explore conventional motifs in modern textiles. To keep pace with changing demands of the consumer taste and fashion, the conventional embroidery motifs provide a source of inspiration to many young designers in developing interesting patterns. The presented study was conducted to design simple but stylish knitwear product with traditional embroidery stitch of *Phulkari*. For conducting the present study a total of thirty *Phulkari* motifs were identified on the basis of primary and secondary sources. Preferences of consumers were studied for these designs and based on the preferences of eighty randomly selected respondents in the age group of twenty to thirty years, ten most preferred designs were developed for knitwear using *Phulkari* motif. Thus, ten designs were developed with five different colour combinations for the production of final articles.

■ **KEY WORDS** : Computer aided embroidery, Traditional embroidery, Embroidery design development, Knitting

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The popularity of knitting has grown tremendously in the recent years because of the increased versatility of techniques, the adaptability of many new man made fibres and the growth in the consumer demand for wrinkle resistant, stretchable and snug fitted garments, particularly in expanding areas of sports wear and other casual wear segments (Vadhani, 2001). Technological advancements have brought automation and computer aided manufacturing (CAD/CAM) system in all the areas including textile and garment industry (Anonymous, 2004). CAD has specific design system using computer as a tool to design anything from aircraft to knitwears (Anonymous 2004). India has a fairly large hosiery industry and most of the hosiery units

are concentrated in Punjab. Today, the consumption of knitted goods has increased rapidly and consumer demand for garments which are comfortable and fashionable. Computerized embroidery machines are available to cater the needs of bulk production and to match the international standard. *Phulkari* is the traditional embroidered shawl of rural folk of Punjab. Now as the traditional products are being widely used and adopted in latest fashion trend, the designers have begun to explore conventional motifs in modern textiles. To keep pace with changing demands of the consumer taste and fashion, the conventional embroidery motifs provide a source of inspiration to many young designers in developing interesting patterns.

Objectives:

- To identify the motifs of traditional *Phulkari* that can be incorporated into knitted structures.
- To develop designs for knitwear articles using most preferred motifs of *Phulkari* and incorporating the most preferred designs into knitted articles.

RESEARCH METHODS

A total of thirty *Phulkari* motifs were identified on the basis of primary and secondary sources. Preferences of respondents were studied with respect to various aspects of designs. Preferences of the panel of judges comprising faculty and PG students from the Department of Clothing and Textiles regarding motifs and colour combinations to be used for knitwear designing were studied. Based on the results of the judgments, ten most preferred motifs and colour combination were selected for design and product development. Among those five the most preferred are discussed in this paper.

RESEARCH FINDINGS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been presented under following heads:

Socio-economic profile of the respondents

Socio- economic profile of the respondents was studied before taking their preferences regarding various *Phulkari* motifs (Table 1). Majority of respondents selected for studying the preferences belonged to 25 -30 years of age (45%) and were graduates (51.25%). About forty seven per cent women in the selected sample were working followed by 40 per cent respondents were the students whose preferences were taken. Nearly 73 per cent respondents belonged to nuclear family type having family income between Rs. 40000-55000/- per month (43.75%).

Preferences of respondents towards knitted articles with *Phulkari* motifs revealed that majority of them preferred to have these in waist belts (22.43) followed by *Kurtis* (18.87), for *Juti* (16.60), preferred shoulder bags(15.73) and fifth rank was given to file covers (15.53) as indicated by the mean scores and ranks given (Fig. 1).

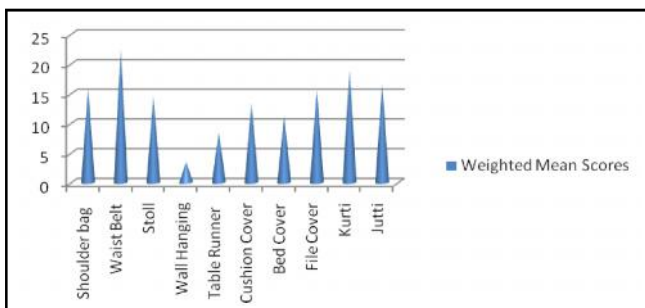


Fig. 1 : Weighted mean scores for various articles

Table 1 : Distribution of respondents according to their socio-economic profile (n=80)

Socio-economic profile	Number of respondents	Percentage of respondents
Age (yrs)		
20-25	16	20.00
25-30	36	45.00
30- 35	28	35.00
Educational status		
Secondary	12	20.00
Graduate	41	51.25
Post graduate	27	33.75
Occupation of the respondents		
Student	32	40.00
Working women	38	47.50
House wife	10	12.50
Occupation of the family		
Service	36	45.00
Business	44	55.00
Family type		
Nuclear	58	72.50
Joint	22	27.50
Family income (per month in Rs.)		
Up to 25,000	8	10.00
25,000-40,000	22	27.50
40,000-55,000	35	43.75
Above 55,000	15	18.75

Preferences of respondents for various motifs:

Preferences of the respondents for incorporating *Phulkari* motifs in the knitwear designing were taken with respect to various designs and it was found from their mean scores that majority of respondents had preference for geometrical motifs (24.10) followed by floral motifs (23.26), for stylized motifs (19.59), for chope (17.6 0) and for bird and animal motif (15.45) (Fig. 2).

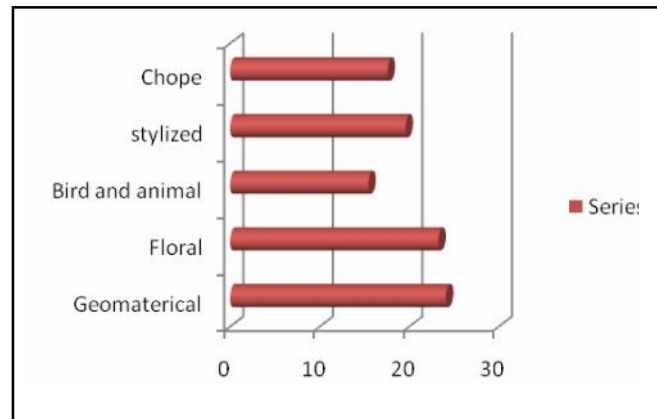


Fig. 2 : Preference of respondents for various motifs

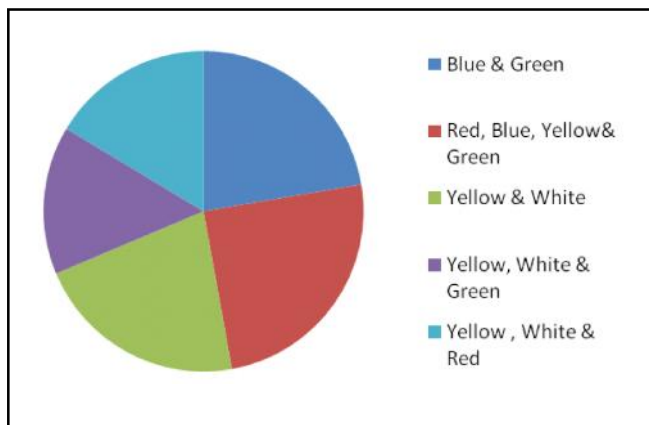


Fig. 3 : Weighted mean scores for colour combinations

Data in pie (Fig. 3) revealed the various ranks given to various colour combinations which were preferred by the majority as red, blue, yellow and green, *i.e.* 29.7 followed by blue and green, 26.7. whereas yellow and white ranked third with mean score of 25.7, yellow, white and red stood forth in rank (19.59) and yellow, white and green stood fifth in rank with mean score of 17.9.

Product development:

Keeping in mind above preferences, ten articles were prepared. Designs were drawn on coral draw and then these designs were fed to computer system of knitting machine to get final pieces of knitwears with *Phulkari* motifs through highly sophisticated computerized knitting machines. Only five articles are discussed along with their pictures in this paper (Fig. 4).

Conclusion:

It be can be concluded from the above study that various *Phulkari* motifs based on the preferences of the respondents



Fig. 4 : Knitwear with Phulkari motifs

and judges incorporated in the knitwear were appreciated and adopted by the respondents. Similarly, other traditional embroideries can also be adopted through CAD system to develop various products. Thus, computer aided designing system is a boon in modern era to the textile industry through which a variety of products can be designed. Hence the use of computer aided designing is helpful in the revival of traditional embroidery in more sophisticated and modern method of designing trendy and fashionable products.

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