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Research Paper

Preferences of judges for product development using *Naala* (Tape) weaving techniques

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■ **ABSTRACT :** Traditional *Naala* making craft of Punjab is on the verge of varnishing. Thus, an effort was made to study opinion of clothing and textile experts for diversification of the craft. Total twenty eight designs comprising of four designs for each of seven most preferred products by college -girls were sketched. Product-wise preferences with respect to designs, motifs, yarns, colours were taken from a panel of randomly selected ten judges comprising of faculty and post-graduate students from Department of Apparel and Textile Science. Among the four designs of shrugs (A), first rank was given to A_3 (mean score 2.8). Design L_1 comb (*Kanghi*) for cap and design L_2 (plain) for bolster got first rank with equal mean score 7.56. Design L_3 lozenges (*Burfi*) for cushion cover, design L_4 square (*Dabbiyan*) for skirt and design L_5 holes (*Moriyaan*) for shrug obtained first rank with mean score 7.11 and 5.3, respectively. First rank was given to design F_6 of a bag with mean score 6.3 and design F_1 for footwear with mean score 6.5. First rank was given to yarn Y_2 for shrug with mean score 11.2, yarn Y_3 for bag (mean score 10.4). Out of twenty eight developed designs of products, seven most preferred designs of products were prepared through *naala* making technique.

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■ **KEY WORDS:** Product designs, *Naala* (tape), Motifs, Yarns

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Women used to weave *Naalas* frequently through finger weaving techniques. Unlike, loom weaving there is no separation between warp and weft strands in finger weaving. In other words, all strands play both roles of warp and weft. Finger weaving is also practiced by Native Americans to create belts, straps and other similar items through a non-loom weaving process (Anonymous, 2011). Sprang technique of weaving was used for weaving the loom woven *Naalas* by the rural women of Punjab.

Finger weaving is a form of flat braiding involving the thread interlacement. One of the warp threads is passed through the rest of the warp threads lifted by the fingers. This weaving process required no elaborate tools but a scissor for cutting the yarns. The absences of tools made finger weaving a mobile craft practice. Number of warp threads in different colours and their order was determined by designs to be woven. It was reported by all the respondents that they could handle maximum of 45-60 strands comfortably (Kaur, 2013). Thus, the study was carried out with the below mentioned objectives :

– To study preferences of judges for product

designs sketched for using *Naala* making techniques.

– To identify product-wise preferences of judges for motifs, yarns and colours for product development through *Naala* making techniques.

■ RESEARCH METHODS

Total twenty eight designs comprising of four designs for each of seven most preferred products were sketched and ranked by a panel of ten judges comprising of faculty and post-graduate students from Department of Apparel and Textile Science. Preferences of the experts regarding design, colours, yarns, weave of products were taken to prepare the products.

■ RESEARCH FINDINGS AND DISCUSSION

Nature has been a guiding hand in deciding the colours and designs. It has filled the rural women of the Punjab with many original ideas to enable them to express their emotions in visual forms. These motifs and designs carry meanings seated deep in the weaver's heart (Kaur, 2013). Each design is unique because of typical motifs, the arrangements or layout of motif (Chawla, 2012). The results obtained from the present investigation as well as relevant discussion have been summarized under following heads:

Product design-wise preferences of judges :

The data in Table 1 revealed that among the four sketched designs of shrug, first rank was given to A_3 with mean score 2.8. Design A_2 obtained second rank with mean scores 2.7 followed by A_4 (mean score 2.3). Design A_1 got the last rank with mean score 2.2 (Fig. 1). First rank was given to design B_3 with mean scores 3.3 for bag. B_2 was second preferred design by the judges with mean score 2.7. Design B_1 was ranked third and design B_4 was least preferred by the judges (Fig. 2).

It is clear from the data that among four designs of cushion covers, first rank was given to C_4 with mean score 3.5. Second preference was for design C_2 with mean score 2.7 (Fig. 3). Also, first rank was given to design D_1 with mean scores 3.3 for skirt. Design D_2 obtained second preference with mean score 2.8 (Fig. 4). Among the four designs of bolster, first rank was given to E_2 with mean score 3.5. Design E_4 was the second most preferred one by the judges with mean score 2.1 followed by design E_3 which was ranked third (mean

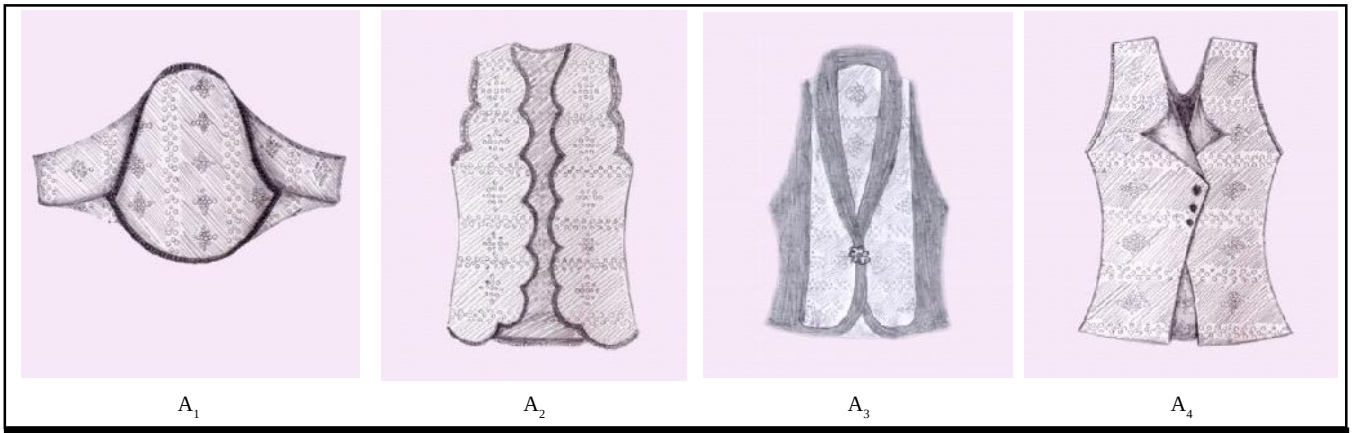
Table 1 : Preferences of judges for sketched product designs **(n=10)**

	Product designs			
Shrug	A_1	A_2	A_3	A_4
Scores/WMS	22 (2.2)	27 (2.7)	28 (2.8)	23 (2.3)
Ranks	IV	II	I	III
Bag	B_1	B_2	B_3	B_4
Scores/WMS	28 (2.8)	23 (2.3)	33 (3.3)	16 (1.6)
Ranks	III	II	I	IV
Cushion Cover	C_1	C_2	C_3	C_4
Scores/WMS	18 (1.8)	27 (2.7)	20 (2.0)	35 (3.5)
Ranks	IV	II	III	I
Skirt	D_1	D_2	D_3	D_4
Scores/WMS	33 (3.3)	28 (2.8)	17 (1.7)	22 (2.2)
Ranks	I	II	IV	III
Bolster	E_1	E_2	E_3	E_4
Scores/WMS	27 (2.7)	35 (3.5)	17 (1.7)	21 (2.1)
Ranks	IV	I	III	II
Footwear	F_1	F_2	F_3	F_4
Scores/WMS	27 (2.7)	21 (2.1)	20 (2.0)	32 (3.2)
Ranks	II	III	IV	I
Cap	G_1	G_2	G_3	G_4
Scores/WMS	39 (3.9)	19 (1.9)	20 (2.0)	22 (2.2)
Ranks	I	IV	III	II

WMS-Weighted mean score

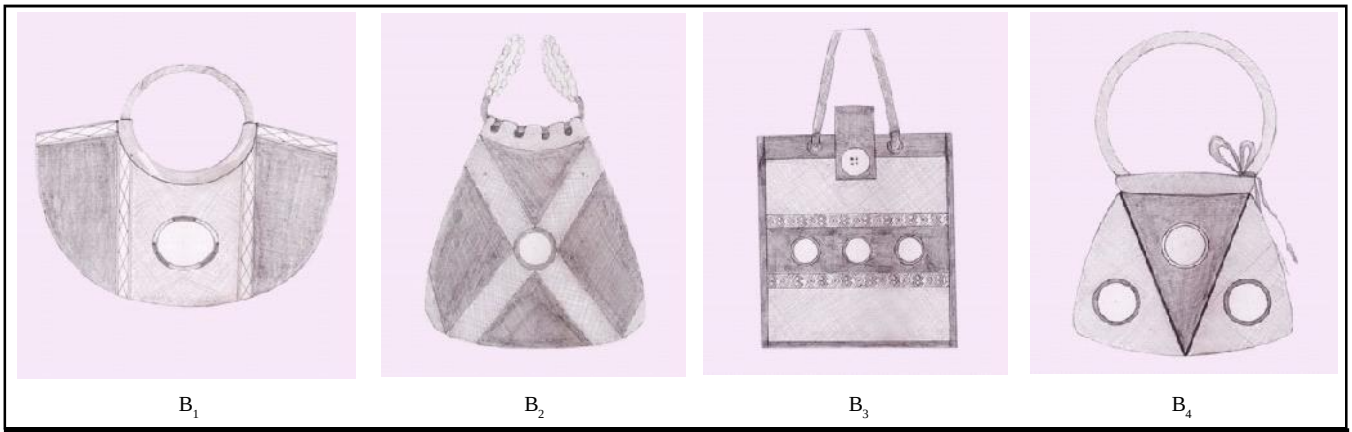
score 1.7) and design E_1 least preferred by the judges (mean score 1.2), respectively (Fig. 5).

First rank was given to F_4 with mean score 3.2 for footwear. Second preferred design for footwear by the judges was F_1 with mean score 2.7. Third rank was given to F_2 and design F_3 was least preferred by the judges (Fig. 6). First rank was given to G_1 with mean score 3.9 among four designs of cap. Design G_4 was ranked second



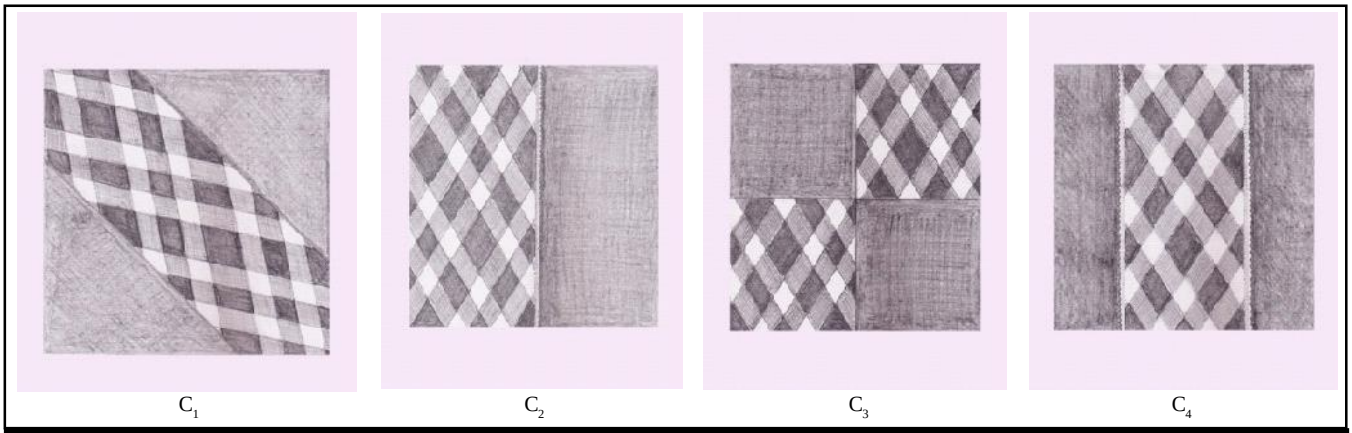
A_1 A_2 A_3 A_4

Fig. 1 : A_1-A_4 Designs of shrug (A)



B_1 B_2 B_3 B_4

Fig. 2 : B_1-B_4 Designs of bag (B)

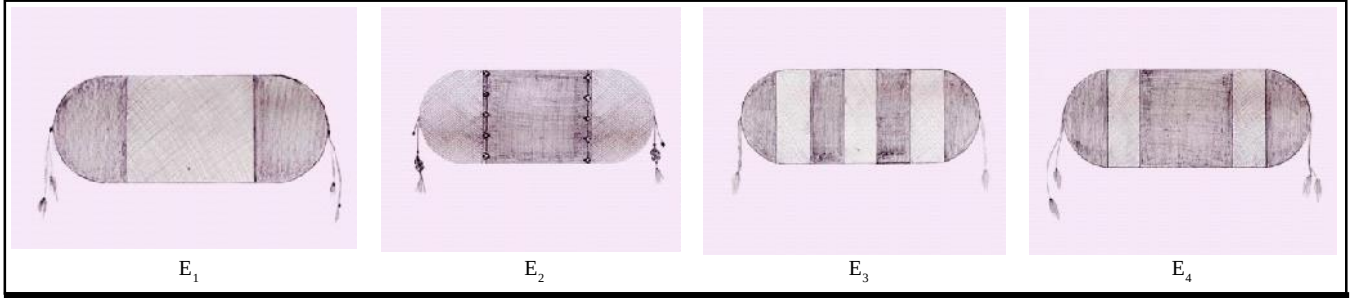


C_1 C_2 C_3 C_4

Fig. 3 : C_1-C_4 Designs of cushion cover (C)

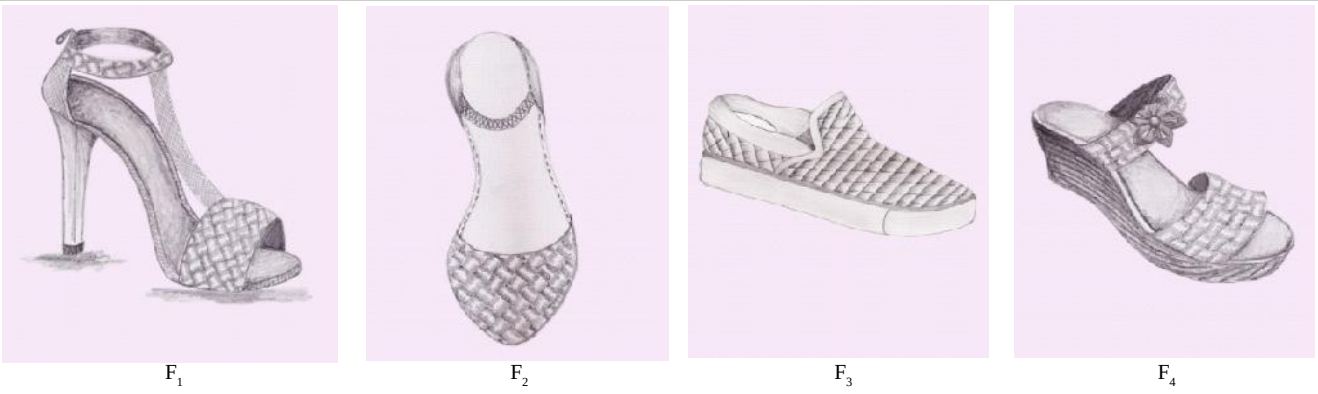
D_1 D_2 D_3 D_4

Fig. 4 : D_1-D_4 Designs of skirt (D)



E_1 E_2 E_3 E_4

Fig. 5 : E_1-E_4 Designs of bolster (E)



F_1 F_2 F_3 F_4

Fig. 6 : F_1-F_4 Designs of footwear (F)

by the judges with mean score 2.2 (Fig. 7). Thus, design A_3 (shrug), B_3 (bag), C_4 (cushion cover), D_1 (skirt), E_2 (bolster), F_4 (footwear) and G_1 (cap) were selected for preparing the products.

Motif/design preferred by apparel and textile experts for product designs :

Each design is unique because of typical motifs, the arrangements or layout of motif (Chawla, 2012). Loom-woven/finger-woven samples prepared by the investigator were shown to judges to take their loom-woven/finger-woven product-wise design preferences (Fig. 8-9).

Data indicated that first rank was given to both design L_1 (*Kanghi*) for cap and design L_2 (plain) for bolster with equal mean score 7.56 (Table 2). Design L_3 (*Burfi*) for cushion cover, design L_4 (*Dabbiyan*) for skirt and design L_5 (*Moriyaan*) for shrug obtained first rank with mean score 7.11 and 5.3, respectively.

First rank was given to design F_6 for bag with mean

score 6.3 and design F_1 for footwear with mean score 6.5. Both of these samples were in plain weave but textural effect was created through the variation in the type of yarns and number of yarns grouped together for interlacing (Table 3).

Product-wise yarn preferences of the judges :

Punjab is an agricultural state and rural people of Punjab are more dependent on agriculture. Besides wheat and maize, cotton is one of the major crops cultivated in this state. The cotton was spun into yarns for weaving various articles like *Durries, Khes, Naalas,* etc. But college-going girls had preference for various types of acrylic yarns (Fig. 10).

First rank was given to yarn Y_2 for shrug with mean score 11.2 and yarn Y_3 for bag (mean score 10.4). Yarn Y_{10} obtained first rank for cushion cover with mean score 9.9, while for bolster and cap yarn Y_{10} obtained first rank with equal mean score 10.4 (Table 4). First rank was given to yarn Y_7 for skirt (mean score 9.00) and yarn Y_1 for footwear (mean score 11.00). Thus, Y_2, Y_3, Y_{10}, Y_7 and Y_1 were selected for preparing shrug, bag,

G_1 G_2 G_3 G_4

Fig. 7 : G_1-G_4 Designs of cap (G)

Table 2 : Product-wise preferences of the judges for using loom-woven designs of *Naala* weaving technique (n=10)

	Loom-woven									
Product / Design code	$A_{(Shrug)}$		$C_{(Cushion\ cover)}$		$D_{(Skirt)}$		$E_{(Bolster)}$		$G_{(Cap)}$	
	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank
L_1	3.8	VI	5.67	II	4.6	V	4.89	III	7.56	I
L_2	4.0	V	4.33	IV	5.4	III	7.56	I	5.78	II
L_3	4.9	III	7.11	I	4.8	IV	5.78	II	4.89	III
L_4	4.9	III	3.33	VII	5.9	I	4.11	VI	4.56	IV
L_5	5.3	I	4.11	VI	3.6	VII	4.44	V	4.44	V
L_6	5.2	II	4.33	IV	5.7	II	3.0	VII	3.0	VII
L_7	3.6	VII	4.56	III	3.7	VI	4.56	IV	4.11	VI
L_8	1.8	VIII	2.56	VIII	2.3	VIII	1.89	VII	1.89	VII

WMS-Weighted mean score

Table 3 : Product-wise preferences of the judges for using finger-woven designs of *Naala* weaving technique (n=10)

	Finger-woven			
Product / Design code	$B_{(Bag)}$		$F_{(Footwear)}$	
	WMS	Rank	WMS	Rank
F_1	2.0	VII	6.5	I
F_2	3.0	V	2.25	VII
F_3	4.3	III	3.75	IV
F_4	2.9	VI	4.125	III
F_5	3.5	IV	2.875	VI
F_6	6.3	I	4.75	II
F_7	5.8	II	3.375	V

cushion cover, bolster, cap, footwear, respectively.

Product-wise colour preferences of judges :

Colour and ornamentation in woven *Naalas* is imparted through the pre-determined placement and interlacing of yarns in particular sequence. More number of intricate patterns were woven by the respondents using different colour scheme which showed their creativity in weaving.

Black colour obtained first rank for shrug, cushion

Fig. 8 : L_1-L_8 Loom-woven samples prepared for taking judges preferences

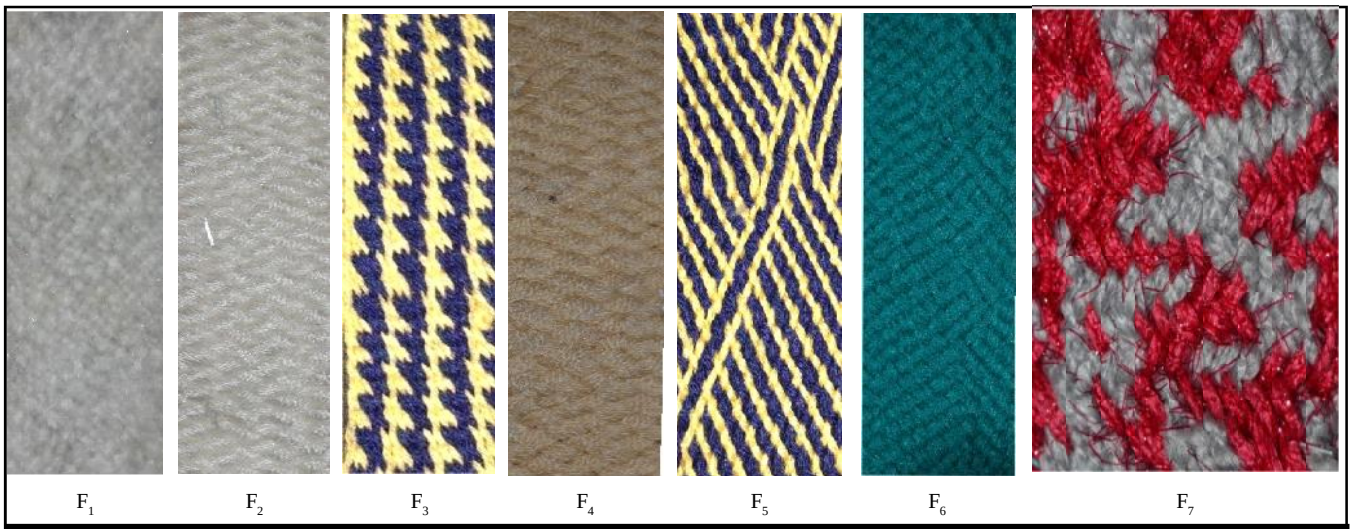


Fig. 9 : F_1-F_7 Finger-woven samples prepared for taking judges preferences

cover and footwear with mean score 4.7, 4.1 and 3.9, respectively and second rank was given to skirt (mean score 4.1), cap (mean score 3.2) and bag (mean score 3.0). Black colour for bolster was least preferred (mean score 2.1) by the judges (Table 5).

Grey and white colours did not obtain first rank for any product. White colour obtained second rank for each of shrug, bolster and cap with mean score 2.9, 3.9 and 3.2, respectively. Third rank was given to white colour for cushion cover (mean score 2.8), skirt (mean score

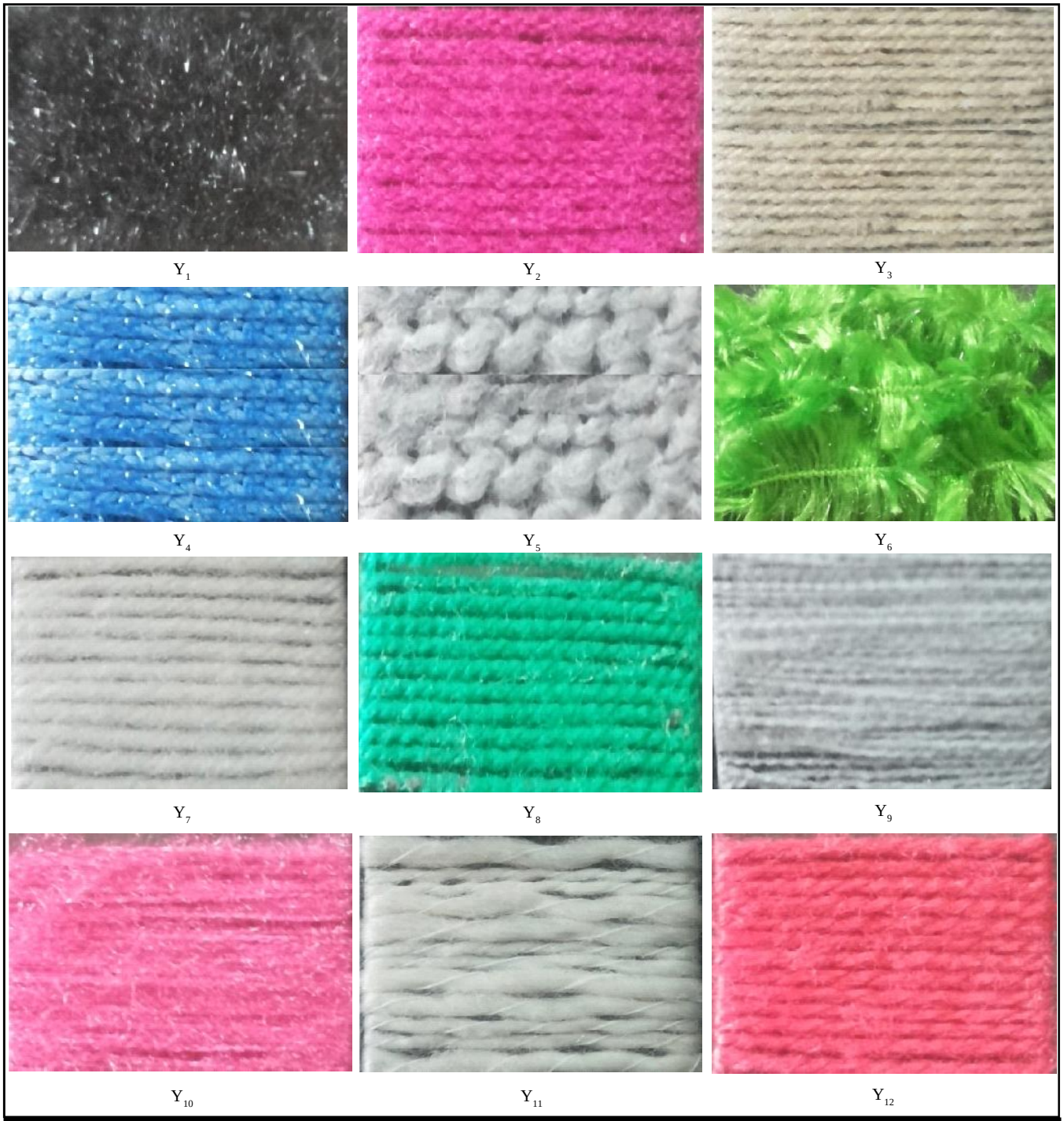


Fig. 10 : Y_1-Y_{12} Yarn samples for taking product-wise preferences of judges

Table 4 : Product-wise yarn preferences of the judges **(n=10)**

Products / Yarns code	$A_{(Shrug)}$		$B_{(Bag)}$		$C_{(Cushion\ Cover)}$		$D_{(Skirt)}$		$E_{(Bolster)}$		$F_{(Footwear)}$		$G_{(Cap)}$	
	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank
Y_1	5.2	VII	7.4	VI	7.9	IV	5.1	X	7.7	II	11.0	I	5.0	X
Y_2	11.2	I	8.0	V	4.9	IX	6.2	VIII	5.9	VIII	7.2	III	7.2	III
Y_3	7.7	V	10.4	I	4.0	XI	8.2	IV	7.2	III	5.3	XI	6.9	V
Y_4	3.7	XII	3.3	XI	5.3	VI	6.5	VII	4.9	XI	6.9	IV	7.2	III
Y_5	5.1	VIII	3.8	IX	3.1	XII	3.1	XI	4.5	XII	5.4	IX	4.9	XI
Y_6	8.4	II	6.9	VII	6.2	V	2.0	XII	6.9	V	8.9	II	4.5	XII
Y_7	5.0	IX	10.3	II	8.5	III	9.0	I	6.7	VI	5.4	IX	5.1	IX
Y_8	4.9	X	8.4	IV	5.1	VIII	8.9	II	6.1	VII	6.4	VI	7.7	II
Y_9	7.8	IV	9.2	III	9.3	II	7.2	V	5.1	IX	5.6	VIII	6.7	VI
Y_{10}	8.4	II	3.4	X	9.9	I	8.7	III	10.4	I	6.6	V	10.4	I
Y_{11}	6.7	VI	4.1	VIII	5.2	VIII	5.7	IX	7.2	III	5.7	VII	5.9	VIII
Y_{12}	4.0	XI	2.5	XII	4.6	X	6.6	VI	5.0	X	3.5	XII	6.1	VII

WMS-Weighted mean score

Table 5 : Product-wise colour preferences of judges **(n=10)**

Product / Colour	$A_{(shrug)}$		$B_{(bag)}$		$C_{(Cushion\ cover)}$		$D_{(skirt)}$		$E_{(Bolster)}$		$F_{(footwear)}$		$G_{(Cap)}$	
	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank
Black	4.7	I	3.0	II	4.1	I	4.1	II	2.1	IV	3.9	I	3.2	II
Grey	2.8	III	2.4	V	2.5	IV	2.2	V	2.2	III	3.0	II	3.1	IV
White	2.9	II	2.7	IV	2.8	III	1.9	III	3.9	II	2.8	III	3.2	II
Off-white	2.8	III	2.9	III	3.8	II	4.3	V	5.0	I	2.8	III	3.3	I
Beige	1.8	V	4.0	I	2.0	V	2.5	III	1.8	V	1.7	V	2.2	V

WMS-Weighted mean score

1.9) and footwear (mean score 2.8), respectively. White colour obtained fourth rank for bag (mean score 2.7).

First rank was given to off-white colour for both cap and bolster with weighted mean score 3.3 and 5.0, respectively, while second rank was given to off-white colour for cushion cover with mean score 3.8. Third rank was given to each of shrug, bag and footwear with mean score 2.8, 2.9 and 2.8, respectively. Off-white colour obtained fifth rank for skirt (mean score 4.3). For bag, beige colour obtained first rank with mean score 4.0. Sixty per cent judges preferred magenta colour for cap as colour accent, while 80.00 per cent preferred maroon for bolster and 70.00 per cent preferred blue colour for bag as colour accent.

Conclusion :

Loom-woven and finger-woven textures of *Naala* weaving techniques prepared by using different types of yarns were found suitable for many products other than *Naalas*. The products finally prepared accordingl to judgement of experts and college girls.

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