

Digitization of traditional 'Kutch and Kathiawar embroidery motifs' and access their marketability

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ABSTRACT

Indian cultural and tradition are reflected through its magnificent and fabulous art and crafts. Embroidery has always been an integral part of Indian culture and Gujarat is famous for the embroidery of Kutch and Kathiawar, whose beauty lies in the rich designs, variety of motifs and stitches. In the present study, traditional embroidery motifs of Kutch and Kathiawar were explored and collected for the creative designing. Top-ranked ten motifs were selected out of two hundred motifs for creative design development and thirty creative designs were developed with the help of Corel DRAW X3 software using selected traditional embroidery motifs. The selected designs with preferred colour ways were transformed into digital embroidery form. Design size, length of stitch and their density pertaining to the type of traditional embroidery stitch were assigned using Wilcom E2 embroidery software for development of selected home furnishing textile articles for product development. Respondents were evaluated the products on the basis of technique used (2.80), aesthetic appeal (2.40), placement of motif (2.80), colour combination (2.76), uniqueness of design (2.86), overall appearance (2.80) and price also. The study found that all the respondents rated the developed products with digital embroidery technique are excellent and also observed that, many respondents were ready to pay more than the suggested price.

Keywords: Traditional Embroidery, CorelDraw, Digitization, Designing, Product development

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INTRODUCTION

Embroidery has always been an important art and craft pocket of Indian traditions (Rastogi, 2013). Gujarat boasts some of the most colourful and exquisite handicraft of India. Gujarat has given India the greatest tradition in embroidery work and craft through its famous and versatile *kutch* and *kathiawar* embroidery [1]. The regional and cultural diversity of regions can be easily noticed in their unique styles through the peculiar types of threads, colours and motifs related to nature, religion and everyday life of people-representing the culture and lifestyle of their community [2]. In traditional *Kutch* and *Kathiawar* embroidery, probably the richest in design and most varied in stitches. Designs may be inspired from natural, floral, geometric, abstract, tribal, mythological, architectural designs etc. The stitches used in the embroidery of *Kutch* and *Kathiawar* are chain stitch, herringbone, interlacing stitch, darning stitch and buttonhole stitches. Motifs used in this type of embroidery are many- floral, peacocks, animals, birds, trees etc. Persian influence can be also seen in the motifs. A motif is the most basic unit or the smallest unit of pattern. Motifs are repeated in different ways to create patterns and these patterns are repeated to create a design. Motif has a distinct identity of its own in a pattern or design. For contemporary designs *Kutch* and *Kathiawar* embroidery motifs were used to embellish 'ghagras' – these

are long multicolour skirts, cholis or blouses, torans or wall and door hangings, floor mats, cushion covers, bolster covers, footwear and many more articles [3]. The changing trends of fashion and increased demand for contemporary designs have led to the use of various softwares and modern techniques to bridge the gap between consumer demands and supply. Computer Aided Designing (CAD) has brought a revolution in the textile industry [4]. Embroideries have always aided as a means of supplementary income for their creators with its cultural and social significance [5]. These days, machine embroidery has supplanted hand embroidery as machine embroidery spares a great deal of time and diligent work. Digital embroidery plays an important role in present fashion world. It is both utilized for inventive work on individual pieces and for mass production of clothing products [6]. Therefore, digital embroidery continues to remain one of the most favoured ornamentation for decoration of apparel as well as home furnishing (Poelo, 2009). Hence, the present study has been planned to documentation of traditional *Kutch* and *Kathiawar* embroideries motifs and develop creative design.

MATERIAL AND METHODS

Secondary sources (museum, craft fair, magazines, book, thesis) were explored for the documentation of traditional motifs from traditional *Kutch* and *Kathiawar* embroidery. Thirty experts were purposively selected as experts in this field. Taking preference of experts for selection of traditional *Kutch* and *Kathiawar* embroidery motifs, designs, placements & colour ways. Fifty consumers were selected for assessment and marketability of developed products. The data were coded, tabulated and analyzed using frequency and mean scores to draw the meaningful inferences.

RESULTS AND DISCUSSION

The results of the present study, derived by following the prescribed methodology and using standard tools mentioned there in, have been compiled:

Documentation of traditional *Kutch* and *Kathiawar* embroideries motifs

Preferences for *Kutch* & *Kathiawar* embroidery motifs: The data presented in Table 1 indicated that as per experts preferences, motif number 18 scored highest mean score (17.80) and ranked I followed by motif number 5 (17.53) ranked II, 15 (16.50) ranked III, 2 (16.47) ranked IV, 14 (16.40) ranked V, 4 (16.33) ranked VI, 23 (16.17) ranked VII, 17 (15.97) ranked VIII, 30 (15.87) ranked IX and motif number 13 (15.83) which got X rank.

Table 1: Preferences of experts for selection of *Kutch* & *Kathiawar* embroidery motifs for design development n=30

Motif No.	Mean score	Ranks	Motif No.	Mean score	Ranks	Motif No.	Mean score	Ranks
1	15.07	XX	11	14.13	XXIX	21	14.70	XXV
2	16.47	IV	12	15.43	XVII	22	15.63	XIV
3	14.87	XXII	13	15.83	X	23	16.17	VII
4	16.33	VI	14	16.40	V	24	15.73	XII
5	17.53	II	15	16.50	III	25	15.50	XV
6	14.57	XXVI	16	14.73	XXIII	26	15.33	XVIII
7	14.40	XXVIII	17	15.97	VIII	27	15.43	XVI
8	15.70	XIII	18	17.80	I	28	13.77	XXX
9	15.83	XI	19	15.17	XIX	29	14.47	XXVII
10	14.70	XXIV	20	14.97	XXI	30	15.87	IX

The rest of the motifs preferred by experts in descending order were motif number 9 (15.83), 24 (15.73), 8 (15.70), 22 (15.63), 25 (15.50), 27 (15.43), 12 (15.43), 26 (15.33), 19 (15.17), 1 (15.07), 20 (14.97), 3 (14.87), 16 (14.73), 10 (14.70), 21 (14.70), 6 (14.57), 29 (14.47), 7 (14.40) and motif number 11 (14.13). The least preferred motif was motif number 28 with mean score 13.77 and ranked XXX.

It is thus found that the top ten preferred motifs of *kutch* and *kathiawar* embroidery which were selected for design development were motif number 2, 4, 5, 13, 14, 15, 17, 18, 23 and 30.

Creation and Selection of created Designs

Selection of stylized Kutch & Kathiawar embroidery designs: The data presented in Table 2 depicts that the most preferred stylized design of Kutch & Kathiawar embroidery was design number 3, scoring highest mean score (22.40) and ranked I, followed by design number 28 (19.33), ranked II and design number 24 (18.70) ranked III.

Table 2: Preferential choices for stylized Kutch & Kathiawar embroidery designs for product development n=30

Design No.	Mean score	Ranks	Design No.	Mean score	Ranks	Design No.	Mean score	Ranks
1	15.40	XVIII	11	18.00	V	21	15.17	XX
2	15.33	XIX	12	16.23	XIV	22	16.50	XI
3	22.40	I	13	10.17	XXIX	23	16.40	XII
4	13.13	XXV	14	18.17	IV	24	18.70	III
5	16.23	XV	15	16.27	XIII	25	10.47	XXVIII
6	12.07	XXVI	16	14.43	XXIII	26	14.53	XXII
7	15.67	XVII	17	14.87	XXI	27	11.90	XXVII
8	15.87	XVI	18	16.80	VIII	28	19.33	II
9	17.07	VII	19	16.67	IX	29	9.16	XXX
10	17.30	VI	20	16.63	X	30	14.13	XXIV


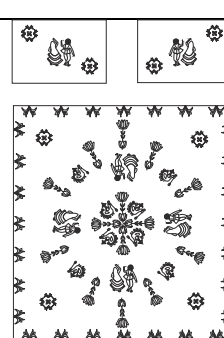
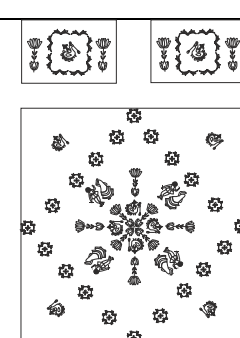
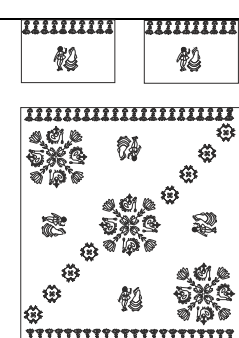

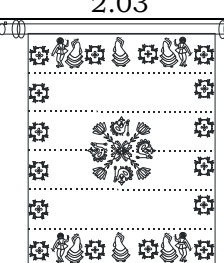
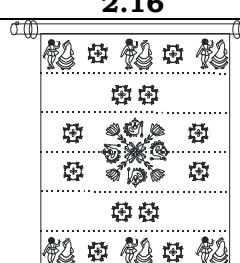
The other preferred stylized designs of Kutch & Kathiawar embroidery in descending trends were design number 10 (17.30), 18 (16.80), 19 (16.67), 20 (16.63), 22 (16.50), 23 (16.40), 15 (16.27), 12 (16.23), 5 (16.23), 8 (15.87), 7 (15.67), 1 (15.40), 2 (15.33), 21 (15.17), 17 (14.87), 26 (14.53), 16 (14.43), 30 (14.13), 4 (13.13), 6 (12.07), 27 (11.90), 25 (10.47) and design number 13 (10.17). The least preferred Kutch & Kathiawar embroidery design was design number 29 with mean score 9.16 and rank XXX.

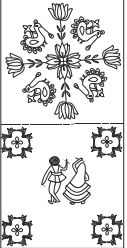


The data elucidates that the top three ranked stylized designs of Kutch & Kathiawar embroidery were design number 9, 16 and 24 selected for preparation of design placements for selected textile articles.

Preparation and Selection of Design Placements

Preferential choices of experts for developed design placements for product development are explained in this Table 3.

Table 3 : Preferences for design placements of Kutch & Kathiawar embroidery for selected products n=30

Selected products	Selected Design no. 3, 24 and 28	Design Placements (Mean Scores)		
		Placement-I	Placement-II	Placement-III
Double bed sheet with pillow covers	 Design no. 3	 2.03	 2.16	 1.96
		 Design no. 24		




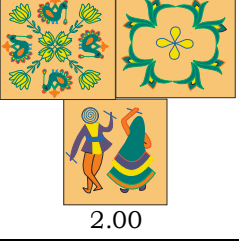
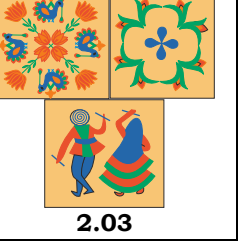
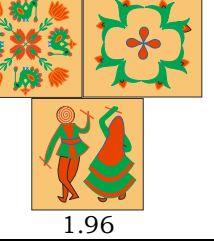
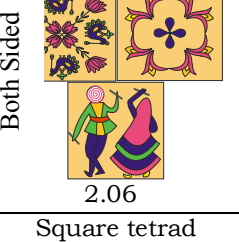
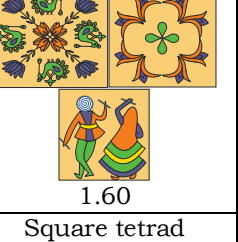
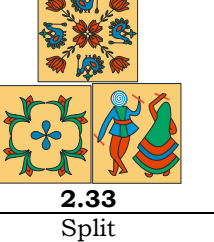
	28	1.93	2.20	1.86
Cushion cover (set of five)	Both Sided			
		1.86	2.50	1.63

The data presented in table elucidates that the most preferred of *Kutch & Kathiawar* embroidery for double bed sheet with pillow covers, roman blind and cushion covers was placement II.

Simulation and Selection of Colour Ways for Digital Embroidery

All the developed colour ways were got evaluated by a panel of thirty experts and the data related to their preferences for developed colour ways of each selected home furnishing textile articles

Table 4: Preferential choices for colour ways of *Kutch & Kathiawar* embroidery for selected products n=30

Selected products	Selected design placement	Colour ways for digital embroidery (Mean Scores)		
		Colour way-I	Colour way -II	Colour way -III
Double bed sheet with pillow covers	II	 1.83	 1.96	 2.23
		Rectangular tetrad colour scheme	Square tetrad colour scheme	Triad colour scheme
Roman blind	II	 2.00	 2.03	 1.96
		Square tetrad colour scheme	Rectangular tetrad colour scheme	Complementary colour scheme
Cushion cover (set of five)	II	 2.06	 1.60	 2.33
		Square tetrad colour scheme	Square tetrad colour scheme	Split Complementary colour scheme

It is inferred from the data the most preferred colour ways of *Kutch & Kathiawar* embroidery on double bed sheet with pillow covers was colour way III prepared using triad colour

scheme, for roman blind, colour way II prepared using split complementary colour scheme and for cushion cover, colour way III prepared using split complementary colour scheme.

Digitization of embroidery designs

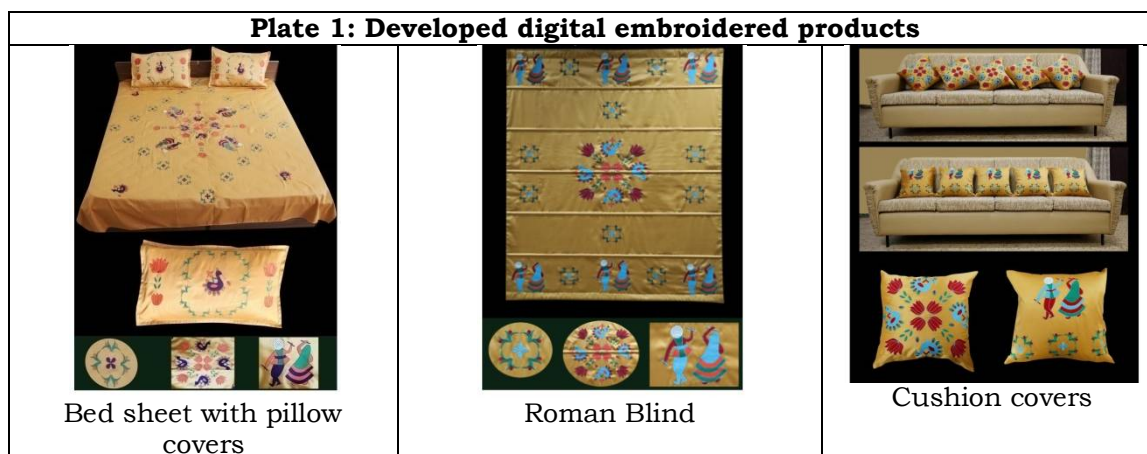
The conversion of selected designs into digital embroidery form. The selected created designs with preferred colour ways were transformed into digital embroidery form assigning design size, length of stitch and their density as per the type of traditional embroidery stitch using Wilcom E2 embroidery software. Traditionally, in *Kutch & Kathiawar* embroidery, the stitches used are herringbone, chain, interlacing, darning and buttonhole, whereas in digital form the stitches used were *tatami*/fill stitch having stitch length ranging from 2-8 mm having stitch density 35-90 stitches/cm; running stitch with stitch length ranging from 2-5mm having stitch density 30-50 stitches/cm; satin having stitch length ranging from 2-6 having stitch density 50-100 stitches/ cm were used for development of selected products.

Table 5: Stitch specifications for development of digital embroidery designs

Embroidery	Types of digital embroidery stitches used	Length of stitch (mm)	Stitch density (stitches/cm)
<i>Kutch & Kathiawar</i>	<i>Tatami / Fill</i>	2-8	35-90
	Running	2-5	30-50
	Satin	2-6	50-100

Development of Products and Calculation of Cost

Products were developed with selected stitches, colour ways, design placements and on selected fabric. Developed products are presented in Plate-1. The data further elucidate that the cost of *Kutch & Kathiawar* embroidery digital designs applied on double bed sheet with pillow covers was Rs. 4800, on roman blind was Rs. 4700 and on cushion cover (set of five) was Rs. 4400. The cost was calculated on the basis of raw materials used, embroidery threads, design punching & embroidery and finishing.



Assessment of Market Potential of Developed products

The developed products were exhibited in the Department of TAD, CCSHAU, Hisar and evaluated by fifty consumers. Opinion of consumers pertaining to the suitability of selected traditional embroidery motifs, created designs, placement of designs, colour combination, workmanship and marketability was sought using three point continuum scale. The data in table 6 highlights that consumers had high opinion regarding all the developed digital embroidered products as they strongly agreed to all the opinion statements with regards to the use of motifs, trendy designs & articles, design suitability, digital embroidery technique & as per selected home furnishing textile articles, design placements, colour ways, quality of workmanship, market potential, alternative for revival of traditional Indian embroidery crafts etc. as indicated by average weighted mean scores of all the developed digital embroidered home furnishing textile articles were above 2.35.

Table 6: Assessment of developed digital embroidered products on different designing parameters n=50

Sr. No.	Opinion statements	Developed home furnishings (WMS)
1.	Use of Indian traditional embroidery motifs for digital embroidery is unique	2.52
2.	Developed designs gave sophisticated and modern look	2.56
3.	Developed embroidered design is suitable as per digital embroidery technique	2.80
4.	Placement of designs is eye catching and proportionate to home furnishing textile articles	2.80
5.	Colour combination of embroidery used with base colour is appealing	2.76
6.	Size, shape, placement and colour way of design has create rhythm, harmony and balance in developed products	2.86
7.	Digital embroidery technique is suitable for selected home furnishing textile articles	2.80
8.	Digital embroidered product gives the illusion of traditional embroidery crafts	2.24
9.	The quality of workmanship is very good	2.06
10.	Developed articles are innovative and trendy	2.86
11.	Digital embroidery technique will save time and energy	1.98
12.	The digital embroidered product will have good market potential	2.00
13.	Adapted designs can be used on different articles	2.28
14.	Digital embroidery technique can be good alternative for revival of traditional Indian embroideries	2.80
Average mean Score		2.52

WMS- Weighted Mean Scores, Strongly agree:3.00-2.33, agree:2.33-1.66 and Somewhat agree:1.66-1.00

The study found that all the respondents rated the developed products with digital embroidery technique are excellent and also observed that, many respondents were ready to pay more than the suggested price.

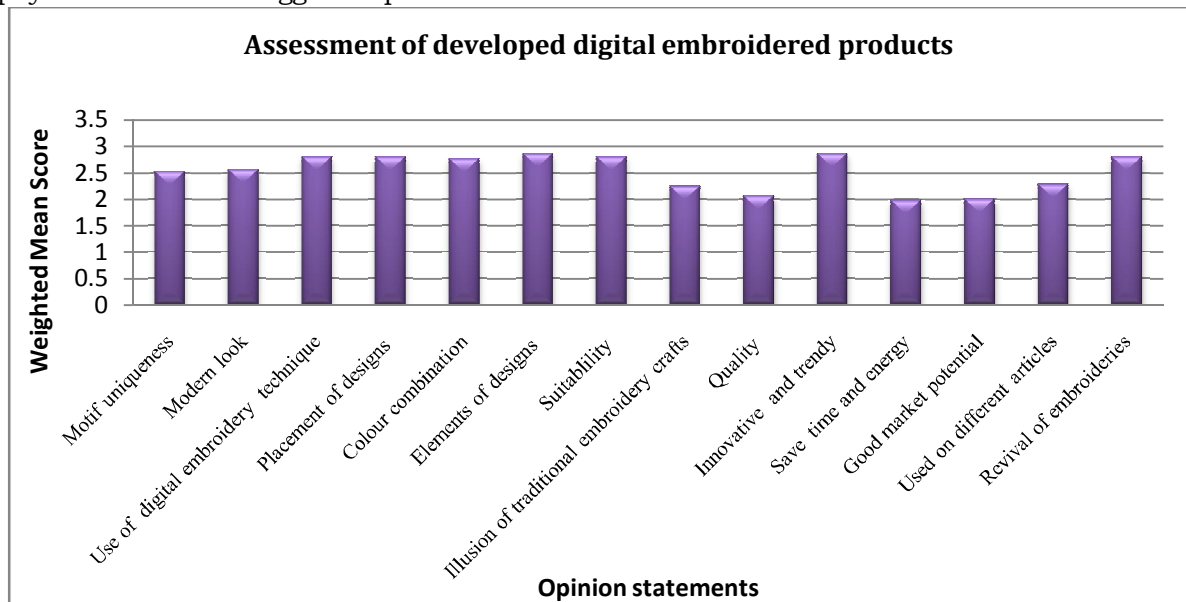


Figure 1: Assessment of developed digital embroidered products

CONCLUSION

All the documented motifs, created designs, color ways, design placements and digital techniques were highly appreciated by experts and consumers. The study also found that all the developed digital *Kutch* and Kathiawar embroidered products were highly appreciated by entrepreneurs and also provided modern look to home.

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