

Digital canvas embroidery articles of cotton

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ABSTRACT : Cross stitch is one of the basic and most commonly used stitch of canvas embroidery. To work only in cross stitch can be tedious indeed, not only in execution, but also in the finished result. Digital/computer assisted embroidery can be applied to a variety of fabrics, threads, decorative objects and stitches. Six digital canvas embroidery articles were developed by using innovative canvas embroidery designs, variety of threads and fabrics, embroidery ornamentation material like sequins, beads and stones and a combination of canvas stitches, as per consumer demand. Lack of fluidity in basic canvas stitch (cross stitch) and its tendency to pull fabric out of shape when rendered alone are the major limitations of canvas embroidery. A variety of straight, diagonal, cross and composite canvas stitches when supplemented with prevalent embroidery ornamentation material added amazing fluidity and clarity in the canvas embroidery designs. It was found that out of 6 value added articles, 5 were highly acceptable in descending order, *i.e.* kurti, wall panel, belt, cushion cover and file cover. Mobile cover was fairly acceptable. This aspect of digital canvas embroidery breaks the monotony and imparts a fresh novel look to the existing canvas embroidery.

Key words : Composite canvas stitches, cross stitch, digital canvas embroidery, ornamentation material, value addition

Canvas embroidery is a traditional feature of needlework in every culture. It is known by a number of names *i.e.* needlepoint work, needlework tapestry, canvas needlework and canvas work or canvas embroidery. The most suitable of the many names applied to the work are undoubtedly canvas work or canvas embroidery. Canvas embroidery is the technique of forming stitches on a special open-weave fabric known as canvas. For most of the Indian women, canvas embroidery means embroidery on canvas, worked entirely in cross stitch. But by using innovative canvas embroidery designs, variety in threads and fabrics, embroidery ornamentation material like sequins, beads and stones and a combination of canvas stitches, one can effectively produce a variety of new articles as per consumer demand. Punia and Singh (2008) have stated that to save the reminiscent beauty of the traditional Indian embroideries, famous Indian designers have given these a fresh look by using varying stitches, threads, fabrics and by supplementing embroidery with fascinating embroidery ornamentation material.

Naik and Wilson (2006) have stated that

digital/computer assisted embroidery can be applied to a variety of fabrics. It can be worked with many types of threads namely cotton, silk, wool, linen, gold, silver and even special hair. Decorative objects such as shells, beads, sequins, jewels, coins and mirror are often sewn to these embroidered pieces. Poelo (2009) reported that computerized embroidery became popular for two reasons. First reason is that it lessens the amount of labour placed into the work as the computer and the digitizing software do most of the work as in perfecting the design and embroidery. With this machine embroidery technique, there is less effort involved and no time wasted at all. The other benefit is of the lesser cost incurred in embroidery digitizing. Keeping these facts in mind a study was conducted to develop a few digital canvas embroidery designs and their placement on various articles.

MATERIALS AND METHODS

The research was designed and conducted phasewise which has been described

under the following heads (Fig.1):

- Exploratory work
- Experimental work
- Comparative analysis of articles

Exploratory work : Fifty consumers with up market taste who visited the selected selling units of Hisar city were selected from different locations of Hisar city namely CCS Haryana Agricultural University, Hisar; Guru Jambheshwar University of Science and Technology, Hisar; Hisar Cantonment and Fateh Chand College for Women, Hisar.

For obtaining the preferences of consumers for canvas embroidery articles, an exhaustive list of canvas embroidery articles was prepared on the basis of their availability in the market and related literature. The choice preferences of consumers were obtained using preferential choice index. The order of preference of consumers for articles on the basis of overall appearance was also studied. Two top ranked canvas embroidery articles preferred by the consumers from each category *i.e.* clothing article and accessories, furnishing articles and utility articles were selected for development of digital canvas embroidered articles.

Experimental work : The experimental work for the present study was undertaken in Hisar city and New Delhi. A collection of 60 digital innovative embroidery designs was created using a theme, 'OCEAN LIFE' on the basis of results of market survey and related literature available on canvas embroidery. Moreover not a single design of canvas embroidery was observed on the selected theme during market survey.

Sixty innovative canvas embroidery designs were created using eXPerience wings/XP wings Version 2.5, embroidery software. These designs included 10 designs each for 2 preferred articles from 3 categories *i.e.* clothing articles and accessories, furnishing articles and utility articles. These designs were developed on the basis of shape, size and end-use of articles.

The prepared designs were subjected to evaluation by experts. The 30 experts who were having basic knowledge of canvas embroidery were purposively selected from the Department of Clothing and Textiles, CCS Haryana Agricultural University, Hisar; Fateh Chand College for Women, Hisar and Govt. Post graduate College, Hisar. The preferences of experts were taken using preferential choice index.

For the selection of raw material *i.e.* fabric, thread, their colour and embroidery ornamentation material along with different types of canvas stitches for various preferred articles, preferences of 30 experts were taken again using preferential choice index.

The requirement of the raw material *i.e.* fabric, thread and embroidery ornamentation material was calculated and purchased from the local market. The selected design of each article was embroidered in suggested placement and colour. Six digital canvas embroidery articles were produced at Brahmputra Needle Craft (Pvt.) Limited, Okhla, New Delhi in the monitoring of designer and researcher.

Comparative analysis of articles : The acceptability of developed value added articles was evaluated for various design parameters *i.e.*, eye catching design, design placement, motifs, appropriate design proportion, colour combination, style, workmanship, shape, utility and uniqueness by the already selected 50 consumers having up-market taste using self structured five quantum scale. These articles were finally rated on the basis of their weighted mean score as highly acceptable (4.21 – 5.00), fairly acceptable (3.41 – 4.20), acceptable (2.61– 3.40), somewhat acceptable (1.81 – 2.60) and not acceptable (1.00 – 1.80).

RESULTS AND DISCUSSION

The, maximum number of consumers were post-graduate (62%), having 31-40 years of

age (54%), belonged to the family whose main occupation was service (82%) and monthly family income was above Rs. 50,000 (48%).

Digital canvas embroidery articles : *Kurti* and belt were the top ranked clothing articles and accessories ranked-I with WMS 3.0 and rank II with WMS 2.98, respectively. Among furnishing articles, wall panel and cushion covers were ranked first (WMS 3.0) and second (WMS 2.94), respectively. The mobile phone cover was the top ranked utility article with (WMS 3.0) while file cover was ranked second with (WMS

2.88) in the same category. Therefore, these articles were selected for digital embroidery.

Digital designs : For belt and *kurti* design number 1(border design) got the first rank with weighted mean score 2.90 and 3.00, respectively. Design number 8 was found to be the least preferred design with WMS 2.40. Design number 3 (aquarium design) with weighted mean score 2.8 was liked the most for the cushion cover while design number 2(whale design) with weighted mean score 3.0 was preferred for wall panel. . Design number 4 (WMS 2.16) for cushion

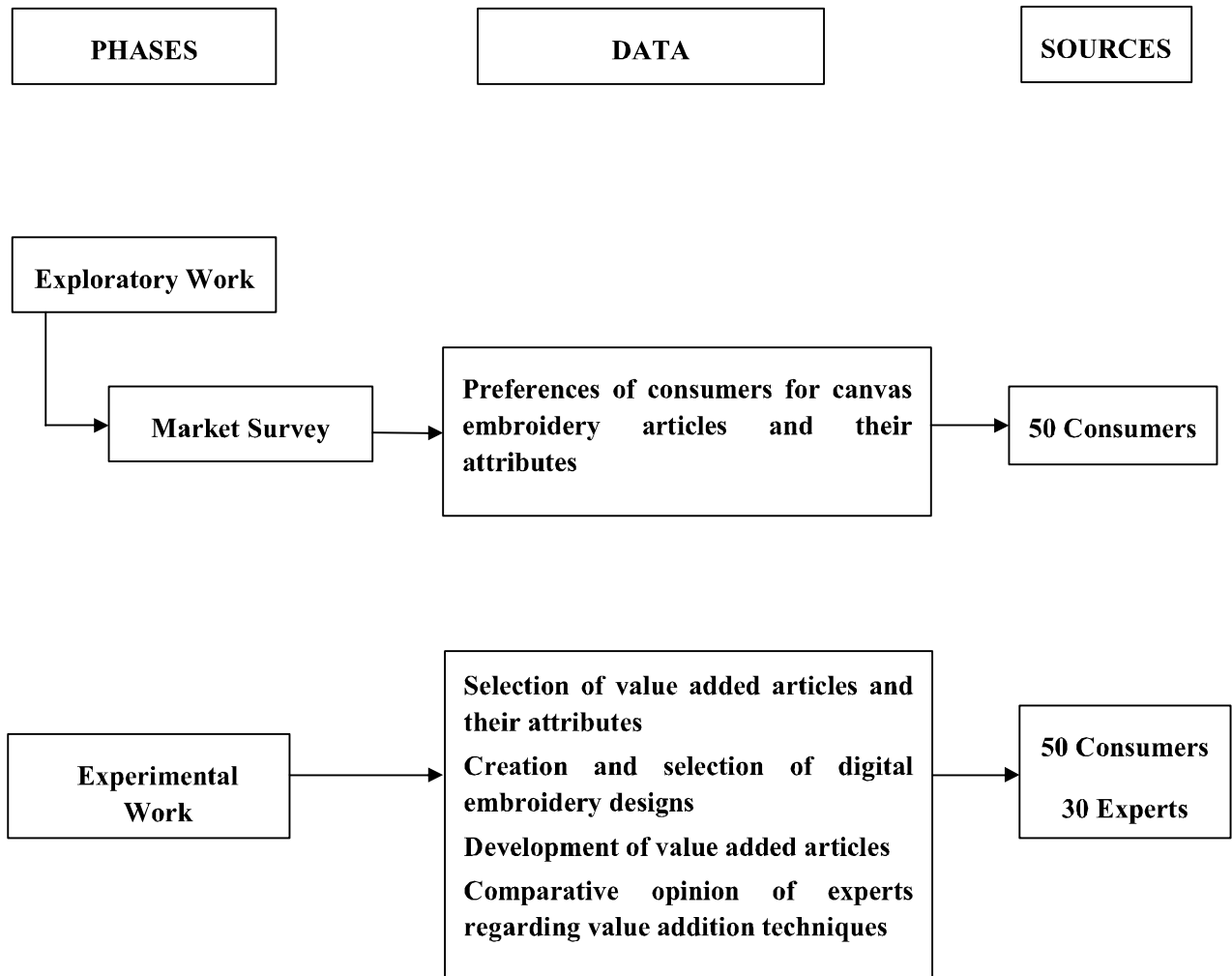


Fig. 1: FLOW CHART ADOPTED FOR METHODOLOGY

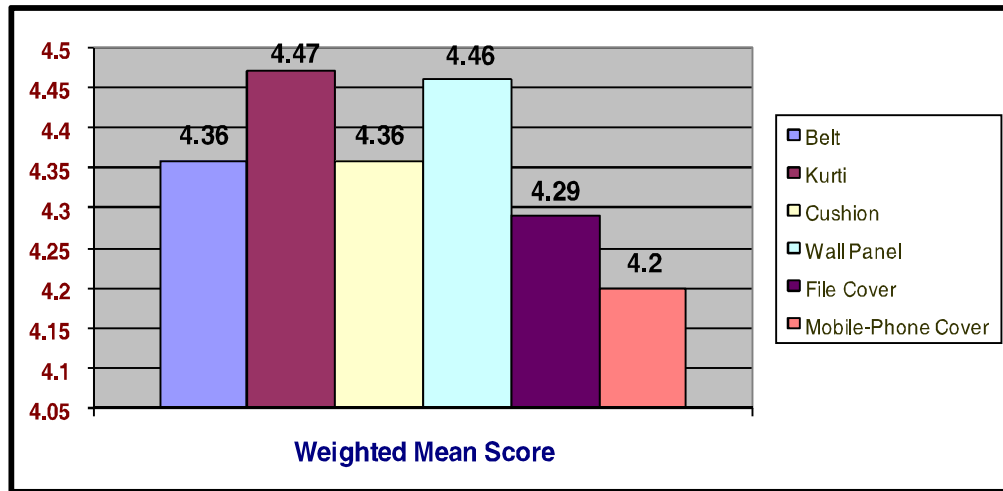


Fig. 2: Comparative analysis of Digital Canvas Embroidery articles

cover and design number 6 (WMS 2.33) for wall panel found to be the least preferred designs. For file-cover design number 1 (design depicting shadow of ship in liquor bottle) was liked the most with weighted mean score 2.73. The least preferred design for file cover was found to be design number 4 (WMS 2.16). For mobile cover, design number 5 (fish design having cap with feather on the head) got the highest rank (WMS 2.76). Design number 7 (WMS 2.00) was the least preferred design.

Thus a border design for *kurti* and belt, aquarium design for cushion, whale design for wall panel, a design depicting shadow of ship in liquor bottle for file cover and a fish design having cap with feather on the head for mobile cover were the top ranked designs preferred by experts for digital embroidered articles. According to experts, these top two designs for each selected article were the best designs as per size, shape and end use of articles. They also opined that the selected theme was very well depicted in these designs. These top ranked designs of each article were converted into cross stitch and embroidered with suggested placement and colour.

Raw material and canvas stitches : The raw material was procured from local market by compiling the suggestions of experts and availability of raw material in the market. So, as per recommendations of expert, thin white cotton for *Kurti*, white thick *khadder* for belt, medium thick yellow *khadder* for cushion and medium thick black *khadder* for wall-panel and medium thick *khadder* in navy blue colour was selected for file and mobile phone cover to prevent soiling. As far as colour of threads/motifs was concerned, the experts preferred that it should be according to theme. So bright rainbow colours were selected for digital canvas embroidered articles and colour combination of each article was kept different.

Mirpuri (2011) stated that bright colour depicts a bold attitude of the wearer, therefore, works as an excellent stress buster in today's fast and stressful life. Orange, sea green, magenta and indigo are modern woman's choice of colours.

Sequins and beads of various size and colour were selected as per requirement of the design. The four types of stitches, *i.e.* composite, straight, diagonal and cross stitches were selected.

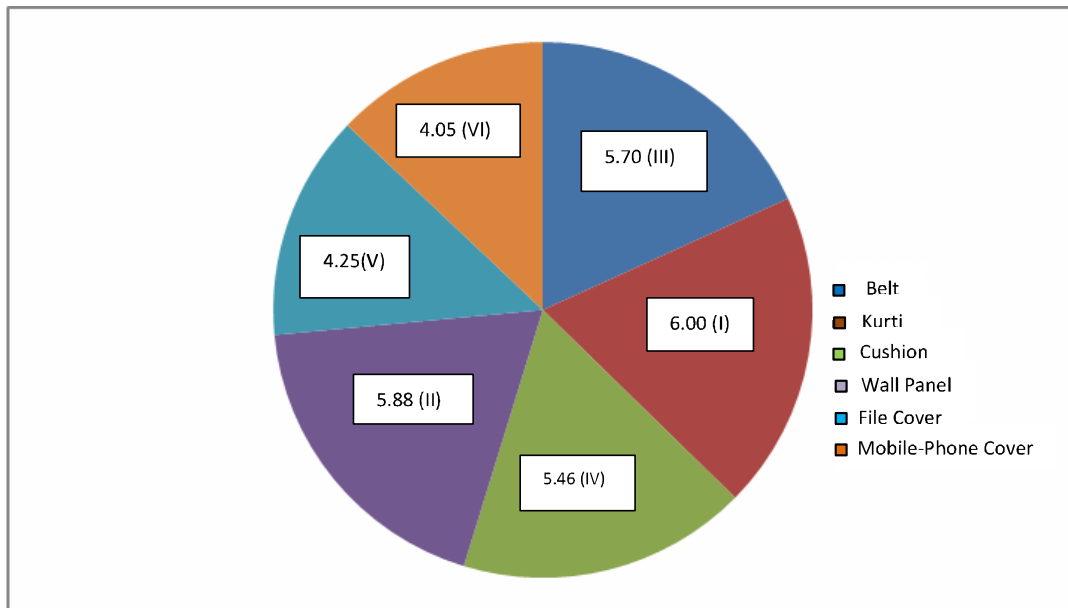


Fig. 3: Preferential order of consumers for the article on the basis of overall appearance

Development of digital canvas embroidery articles : The selected design of each article was embroidered with suggested placement and colour. These six digital canvas embroidery articles were thus produced at Brahamputra Needle Craft (Pvt.) Limited, Okhla, New Delhi(Plate 1).

Comparative analysis of digital canvas embroidery articles : Comparative evaluation of value added articles was done with the help of aggregate weighted mean score. Weighted mean scores of all the parameters of each article were added and divided by number of parameters (10) to calculate aggregate WMS which has been presented in Fig 2.

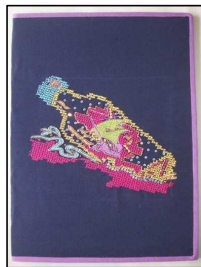
It is evident from the data in table that out of six value added articles, five were found highly acceptable in descending order *i.e.* Kurti (4.47), wall panel (4.46), belt and cushion cover (4.36) and file cover (4.29). Mobile phone cover

was fairly acceptable (4.20).

Innovative designs, colour combination and workmanship of all the articles were the most appreciated features.

Preferential order of consumers for the digital canvas embroidery articles on the basis of overall appearance :

The consumers' preferences in rank order for the digital canvas embroidered articles on the basis of overall appearance are presented in Fig. 3. It is depicted by the data that Kurti was ranked 1st with highest score 6.0. This was because it was considered as innovatively designed fresh arrival of canvas embroidery article in the market. It could be very well teamed with *salwar*, capris and denim also. The wall panel was ranked II with score 5.88. Its appropriate size with eye catching design attracted the immediate attention of maximum consumers. According to them, the size of wall panel was very practical to make its use suitable at various places. It could be used alone and can

DIGITAL CANVAS EMBROIDERY ARTICLES**Clothing articles and accessories****Kurti****Belt****Furnishing articles****Cushion****Wall Panel****Utility articles****Mobile phone cover****File cover**

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Plate - 1

also be mounted in combination with other wall panels. Belt was ranked III (5.70) due to its Indo-western style. It was followed by cushion cover which got rank IV (5.46). Its unique but soothing colour combination symbolized the true rainbow. File-cover got rank V (4.25) while mobile phone cover got rank VI (4.05). Design placement especially on inner pocket of file cover and spaciousness in mobile cover was appreciated

by the majority of consumers. A few consumers remarked belt and mobile-phone cover as unisexual articles.

CONCLUSION

Overall acceptability of furnishing articles at rank II and IV despite the vast varieties of furnishing articles already existing in the market. Though the file cover and mobile phone cover got rank V and VI even then the consumers appreciated the placement of design of file cover. Majority of consumers liked the shape of mobile-phone cover which provided enough space for big-sized (touch phone) mobile phones.

Innovative digital canvas embroidery designs, their placement, colour combination and style in consonance with the latest market trend could play an important role in imparting the novel look to the existing canvas embroidery.

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