CHAPTER - 4
RESULTS AND DISCUSSION

The results and discussion are in accordance of different objectives which are described and discussed under the following heads:

4.1 Documentation of metal embroidery motifs of Zardozi, Gota work, Danke-ka-Kaam, Mukke-ka-Kaam and Aari Tari

4.2 Socio-economic profile of the artisans

4.3 Raw material, tools and techniques used in metal embroidery

4.4 Design Development of stylised motifs with the help of Computer Aided Designing.

4.5 Product Development using combinations of metal embroideries and assessing consumers acceptability

4.6 Training to the women for skill development.

Phase I:

4.1 Documentation of metal embroidery motifs of Zardozi, Gota work, Danke-ka-Kaam, Mukke-ka-Kaam and Aari Tari

Indian designs and motifs are synthesis of myths of various cultures. Beauty of folk arts, motifs and designs has unfolded possibilities, pairing the way to discover wide range of symbols and patterns. For any work on design documentation, it is necessary to identify authentic resources and materials. To document twenty five motifs each of Zardozi, Gota work, Danke-ka-Kaam, Mukke-ka-Kaam and Aari Tari, museums and artisans were visited to get first hand and indepth knowledge of traditional motifs. The investigator personally visited the museums located in Jaipur, Jodhpur, Udaipur, Bikaner, Barmer and Jaisalmer in Rajasthan. Albert Hall Museum and City Palace Museum, Jaipur; Mehrangarh Fort & Umed Bhavan Palace Museum, Jodhpur; Maharana Pratap Sangrahlay and City Palace Museum, Udaipur; Junagarh Fort, Ganga Golden Jubilee Museum and Prachina Museum, Bikaner; and Folklore museum, Jaisalmer were surveyed. The documented motifs belonged to 19th century which was taken from museums and books whereas contemporary motifs such as Danke-ka-Kaam and Mukke-ka-Kaam were taken from the artisans and markets which were digitally photographed.


The documented traditional motifs of *Zardozi, Gota Work, Danke-ka-kaam, Mukke-ka-kaam* and *Aari Tari* are as follows:

### 4.1.1 Zardozi

#### Plate 4.1A-Y: Documented Zardozi Motifs

<table>
<thead>
<tr>
<th>Plate 4.1A</th>
<th>Motif No: ZM 1, Floral with twig</th>
<th>Source: Prachina museum, Bikaner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate 4.1B</td>
<td>Motif No: ZM 2, Floral buta</td>
<td>Source: Prachina museum, Bikaner</td>
</tr>
<tr>
<td>Plate 4.1C</td>
<td>Motif No: ZM 3, Floral spray</td>
<td>Source: Prachina museum, Bikaner</td>
</tr>
<tr>
<td>Plate 4.1D</td>
<td>Motif No: ZM 4, Floral spray</td>
<td>Source: Prachina museum, Bikaner</td>
</tr>
</tbody>
</table>
Plate 4.1E
Motif No: ZM 5, Gamla flower
Source: Prachina museum, Bikaner

Plate 4.1F
Motif No: ZM 6, Gamla flower
Source: Prachina museum, Bikaner

Plate 4.1G
Motif No: ZM 7, Floral bud
Source: Costumes and Textiles of India, Vandana Bhandari.

Plate 4.1H
Motif No: ZM 8, Floral buta
Source: Costumes and Textiles of India, Vandana Bhandari.
Results and Discussion

Plate 4.1I
Motif No: ZM 9, Floral buta
Source: Mehrangarh Fort, Jodhpur

Plate 4.1J
Motif No: ZM 10, Floral buti
Source: Prachina Museum, Bikaner

Plate 4.1K
Motif No: ZM 11, Floral buti
Source: Prachina Museum, Bikaner

Plate 4.1L
Motif No: ZM 12, Floral buti
Source: Sonar Fort, Jaisalmer
Plate 4.1M
Motif No: ZM 13, Floral buta
Source: Prachina Museum, Bikaner

Plate 4.1N
Motif No: ZM 14, Paisley
Source: Prachina Museum, Bikaner

Plate 4.1O
Motif No: ZM 15, Paisley
Source: City Palace Museum, Jaipur

Plate 4.1P
Motif No: ZM 16, Pan shaped
Source: Albert Hall Museum, Jaipur
Results and Discussion

Plate 4.1Q
Motif No: ZM 17, Lotus
Source: Prachina Museum, Bikaner

Plate 4.1R
Motif No: ZM 18, Sunflower
Source: Prachina Museum, Bikaner

Plate 4.1S
Motif No: ZM 19, Lotus
Source: Prachina Museum, Bikaner

Plate 4.1T
Motif No: ZM 20, Floral Spray
Source: Zakir Ali, Jaipur
Plate 4.1U
Motif No: ZM 21, Peacock
Source: Prachina Museum, Bikaner

Plate 4.1V
Motif No: ZM 22, Reflected peacock
Source: Prachina Museum, Bikaner

Plate 4.1W
Motif No: ZM 23, Dancing peacock
Source: Zakir Ali, Jaipur

Plate 4.1X
Motif No: ZM 24, Dancing peacock
Source: Ranas sarees, Jaipur
Zardozi is sheer magic of nimble fingers and imaginative designs. In ancient times major source of inspiration was nature and objects used in routine life of the artisans for the embroideries such as flora–fauna. Floral motifs i.e. butas, buti, guldasta, floral spray, sunflower, lotus are most popular along with peacock motifs. As matter of fact several motifs of flowers, creepers and jaali design are passed down through ages without any major adaptations. It was noted that there was uniformity in the shape of the motifs and very intricate work is done as it is densely embroidered.
4.1.2 Gota work

Plate 4.2A-Y: Documented Gota work Motifs

Plate 4.2A
Motif No: GM 1, Trellis pattern around the flower
Source: City Palace Museum, Jaipur

Plate 4.2B
Motif No: GM 2, Floral motif
Source: City Palace Museum, Jaipur

Plate 4.2C
Motif No: GM 3, Champa phool
Source: Sadul Museum, Bikaner

Plate 4.2D
Motif No: GM 4, Floral checkered
Source: Costumes and Textiles of Royal India, Ritu Kumar
Plate 4.2E
Motif No: GM 5, Floral buties
Source: Sadul Museum, Bikaner

Plate 4.2F
Motif No: GM 6, Paisley with floral design
Source: Golden Jubilee Museum, Bikaner

Plate 4.2G
Motif No: GM7, Floral
Source: Janak Nandini, Jaipur

Plate 4.2H
Motif No: GM 8, Pan buta with floral
Source: Janak Nandini, Jaipur
Plate 4.2I
Motif No: GM 9, Trellised floral all over
Source: City Palace Atelier, Jaipur

Plate 4.2J
Motif No: GM 10, Floral border design
Source: Costume and Royal Textile of India, Ritu Kumar

Plate 4.2K
Motif No: GM 11, Gota Patti
Source: Ethnic Embroidery of India (II)
Usha Shrikant

Plate 4.2L
Motif No: GM 12, Floral motifs
Source: Ethnic Embroidery of India(II)
Usha Shrikant
Plate 4.2M
Motif No: GM 13, Floral pan buta
Source: Ethnic Embroidery of India(II)
Usha Shrikant

Plate 4.2N
Motif No: GM 14, Lotus
Source: Zari Sarees, Jaipurs

Plate 4.2O
Motif No: GM 15, Champa phool
Source: Maharajas of Rajasthan

Plate 4.2P
Motif No: GM 16, Floral design
Source: City Palace, Jaipur
Plate 4.2Q
Motif No: GM 17, Pan motif
Source: Rajasthan, Lynden

Plate 4.2R
Motif No: GM 18, Paisley
Source: Zari Sarees, Jaipur

Plate 4.2S
Motif No: GM 19, Pan buta
Source: Rajasthan, Lynden

Plate 4.2T
Motif No: GM 20, Floral corner design
Source: Sadul Museum, Bikaner
Plate 4.2U
Motif No: GM 21, Floral buta
Source: Zari Sarees, Jaipur

Plate 4.2V
Motif No: GM 22, Peacock
Source: Rajasthan, Lynden

Plate 4.2W
Motif No: GM 23, Peacock
Source: Rajasthan, Lynden

Plate 4.2X
Motif No: GM 24, Peacock
Source: Rajasthan, Lynden
From the above documented motifs of *Gota* work it can be revealed that the traditional motifs used in earlier times were floral and trellised pattern. Floral design occupies an important place in this art. Varieties of small flower arranged horizontally, vertically or diagonally in form of *buta* or *buties* was commonly used. The most popular bird motif in *Gota* work was peacock which was seen in most of the apparels. *Pan* and paisley are some of the other motif used in combination with floral designs. Checkered pattern, allover design and *buties* were prominently used in *Gota* work.

Plate 4.2Y
Motif No: GM 25, Peacock
Source: Rajasthan, Lynden
4.1.3 Danke-ka-kaam

Plate 4.3A-Y: Documented Motifs of Danke-ka-kaam

Plate 4.3A
Motif No: DM 1, Floral buta
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur

Plate 4.3B
Motif No: DM 2, Floral buta
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur

Plate 4.3 C
Motif No: DM 3, Floral buta
Source: G.M. Motiwala, Kaizar Ali Motiwala, Udaipur

Plate 4.3 D
Motif No: DM 4, Floral pan buta
Source: G.M. Motiwala, Kaizar Ali Motiwala, Udaipur
Plate 4.3E
Motif No: DM 5, Crescent moon with flora twig
Source: G.M. Motiwala, Kaizar Ali Motiwala, Udaipur

Plate 4.3F
Motif No: DM 6, Floral buta
Source: Patwa, Zariwala Govardhan Tej Singh, Udaipur

Plate 4.3G
Motif No: DM 7, Jaaldar bel
Source: Maharana Pratap Sangrahlay, Udaipur

Plate 4.3H
Motif No: DM 8, Border bel
Source: Rani Boutique Centre, Udaipur
Plate 4.3I
Motif No: DM 9, Jaaldar bel
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur

Plate 4.3J
Motif No: DM 10, Border bel
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur

Plate 4.3K
Motif No: DM 11, Floral border
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur

Plate 4.3L
Motif No: DM 12, Crescent moon
Source: Zafar Ali, Kurban Ali, Udaipur
Results and Discussion

Plate 4.3M
Motif No: DM13, Gamla design
Source: Patwa, Udaipur

Plate 4.3N
Motif No: DM14, Gamla design
Source: Patwa, Udaipur

Plate 4.3 O
Motif No: DM 15, Paisley with pan
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur

Plate 4.3 P
Motif No: DM 16, Paisley
Source: Fashion Embroidery hand work, Saiffudin Zariwala, Udaipur
Plate 4.3 Q
Motif No: DM 17, Paisley
Source: G. M. Motiwala, Kaizar Ali Motiwala, Udaipur

Plate 4.3 R
Motif No: DM 18, Intertwined paisley
Source: G. M. Motiwala, Kaizar Ali Motiwala, Udaipur

Plate 4.3 S
Motif No: DM 19, Pan shaped
Source: Zafar Ali, Kurban Ali, Udaipur

Plate 4.3 T
Motif No: DM 20, Pan shaped
Source: Zafar Ali, Kurban Ali, Udaipur
Plate 4.3 U
Motif No: DM 21, Kalash design
Source: Rani Boutique Centre, Udaipur

Plate 4.3 V
Motif No: DM 22, Peacock
Source: Zafar Ali, Kurban Ali, Udaipur

Plate 4.3 W
Motif No: DM 23, Mirrored peacock
Source: Patwa, Zariwala Govardhan Tej Singh, Udaipur

Plate 4.3 X
Motif No: DM 24, Dancing peacock
Fashion Embroidery hand work,
Saiffudin Zariwala, Udaipur
The traditional motifs of *Danke-ka-kaam* reveals that the motifs were inspired by nature, like the crescent moon, peacock, floral buta and buti, paisley (mango), guldasta (pot with flowering plant) and pan shaped, traditional bel with or without border lines on both the sides.
4.1.4 Mukke-ka-kaam

Plate 4.4A-Y: Documented Motifs of Mukke-ka-kaam

Plate: 4.4 A
Motif No: MM 1, Floral
Source: Jhumri devi, Ramsar, Barmer

Plate: 4.4 B
Motif No: MM 2, Floral
Source: Raziya, Ramsar, Barmer

Plate: 4.4 C
Motif No: MM 3, Floral
Source: Dariya, Ramsar, Barmer

Plate: 4.4D
Motif No: MM 4, Surajmukhi
Source: Heera, Ramsar, Barmer
Results and Discussion

Plate: 4.4E
Motif No: MM 5, Surajmukhi
Source: Heera, Ramsar, Barmer

Plate: 4.4 F
Motif No: MM 6, Floral
Source: Bagri devi, Ramsar, Barmer

Plate: 4.4G
Motif No: MM 7, Star phool
Source: Costumes & Textiles of India
Author: Vandana Bhandari

Plate: 4.4 H
Motif No: MM 8, Star phool
Source: Dariya, Ramsar, Barmer
Results and Discussion

Plate: 4.4 I
Motif No: MM 9, Floral
Source: Bagri devi, Ramsar, Barmer

Plate: 4.4 J
Motif No: MM 10, Geometrical
Source: Phuli, Ramsar, Barmer

Plate: 4.4 K
Motif No: MM 11, Chaukri with challo
Source: Costumes & Textiles of India
Author: Vandana Bhandari

Plate: 4.4 L
Motif No: MM 12, Chaukri with triangle
Source: Dehli devi, Ramsar, Barmer
Results and Discussion

Plate: 4.4 M  
Motif No: MM 13, Chaukri  
Source: Dehli devi, Ramsar, Barmer

Plate: 4.4 N  
Motif No: MM 14, Chaukri  
Source: Dehli devi, Ramsar, Barmer

Plate: 4.4 O  
Motif No: MM 15, Chaukri  
Source: Jhumri devi, Ramsar, Barmer

Plate: 4.4 P  
Motif No: MM 16, Chaukri  
Source: Costumes & Textiles of India  
Author: Vandana Bhandari
Plate: 4.4Q
Motif No: MM 17, Geometrical
Source: Phuli, Ramsar, Barmer

Plate: 4.4R
Motif No: MM 18, Geometrical
Source: Raziya, Ramsar, Barmer

Plate: 4.4S
Motif No: MM 19, Geometrical
Source: Ram kali, Ramsar, Barmer

Plate: 4.4T
Motif No: MM 23, Geometrical
Source: Tiklidevi, Ramsar, Barmer
Results and Discussion

Plate: 4.4U
Motif No: MM 21, Circle
Source: Heera, Ramsar, Barmer

Plate: 4.4V
Motif No: MM 22, Circle
Source: Heera, Ramsar, Barmer

Plate: 4.4 W
Motif No: MM 20, Circle
Source: Prachina Museum, Bikaner

Plate: 4.4X
Motif No: MM 24, Circle
Source: Tiklidevi, Ramsar, Barmer
The motifs of *Mukke-ka-kaam* were documented from the artisans as not much literature was available from museum or books. From the documented motifs of *Mukke-ka-kaam* it can be elucidated that the motifs were inspired by phenomena of nature. According to the sources of information gathered by the artisans that the embroidered motifs that were most popular are the geometrical shapes i.e. circles, square, stars, diamonds, rectangle, triangles and zigzag patterns. Floral pattern is also seen. The local name of the motifs and design are derived on everyday objects like funi, patasha, challo and chaukri.
4.1.5 Aari Tari

Plate 4.5A-Y: Documented Motifs of *Aari Tari*

Plate: 4.5 A
Motif No: AM 1, Floral spray
Source: Leela Sarees, Sardarpura, Jodhpur

Plate: 4.5 B
Motif No: AM 2, Floral bud
Source: Prachina Museum, Bikaner

Plate: 4.5 C
Motif No: AM 3, Floral buti
Source: Thar Handloom, Jalorigate, Jodhpur

Plate: 4.5D
Motif No: AM 4, Floral
Source: Prachina Museum, Bikaner
Results and Discussion

Plate: 4.5E
Motif No: AM 5, Floral
Source: Prachina Museum, Bikaner

Plate: 4.5F
Motif No: AM 6, Floral buta
Source: Rajus Fashion, Jaljog Choraha, Jodhpur

Plate: 4.5G
Motif No: AM 7, Floral sprig
Source: Shakhi sarees, Sardarpur, Jodhpur

Plate: 4.5H
Motif No: AM 8, Floral bud
Source: Prachina Museum, Bikaner
Plate: 4.5 I
Motif No: AM 9, Guldasta
Source: Bombay saree centre, Bada bazaar, Jodhpur

Plate: 4.5J
Motif No: AM 10, Floral
Source: Prachina Museum, Bikaner

Plate: 4.5K
Motif No: AM 11, Lotus flower
Source: Shakhi, Sardarpur, Jodhpur

Plate: 4.5L
Motif No: AM 12, Lotus flower
Source: Thar Handloom, Jalorigate, Jodhpur
Plate: 4.5 M
Motif No: AM 13, Floral buta
Source: Thar Handloom, Jalorigate, Jodhpur

Plate: 4.5 N
Motif No: AM 14, Floral sprig
Source: Prachina Museum, Bikaner

Plate: 4.5O
Motif No: AM 15, Floral pan buta
Source: Leela Sarees, Sardarpura, Jodhpur

Plate: 4.5P
Motif No: AM 16, Floral twig
Source: Leela Sarees, Sardarpura, Jodhpur
Results and Discussion

Plate: 4.5Q
Motif No: AM 17, Pan shaped
Source: Leela Sarees, Sardarpura, Jodhpur

Plate: 4.5R
Motif No: AM 18, Pan buta
Source: Leela Sarees, Sardarpura, Jodhpur

Plate: 4.5S
Motif No: AM 19, Paisley
Source: Prachina Museum, Bikaner

Plate: 4.5T
Motif No: AM 20, Dancing peacock
Source: Rajus Fashion, Jaljog Choraha, Jodhpur
Plate: 4.5U
Motif No: AM 21, Peacock
Source: Prachina Museum, Bikaner

Plate: 4.5V
Motif No: AM 22, Peacock
Source: Prachina Museum, Bikaner

Plate: 4.5W
Motif No: AM 23, Butterfly
Source: Prachina Museum, Bikaner

Plate: 4.5X
Motif No: AM 24, Parrot
Source: Prachina Museum, Bikaner
The documented motifs of Aari Tari show that the floral designs were most prevalent in earlier times. Among the floral motifs, sunflower, flowering stems, lotus, paisley and pan motifs were most popular. Guldasta, cluster of floral sprays, buta and buti were used either in the corner or border of the articles. Parrot, peacock and butterfly created with detailed delicacy brings out the animated spirit of the depicted forms.

From the documented metal embroidery motifs it can be concluded that for the people in ancient time the major source of inspiration was nature and objects used in daily life of the artisans for the embroideries such as flora–fauna, animals and birds. Geometric shapes were also very prevalent. Circle, square, triangle were also source of inspiration. The motifs were very simple but very intricately embroidered, there was no modification in design, and original design was copied and applied on the products.
4.2. Visit & Survey of Market Places

Markets of Jaipur, Jodhpur, Udaipur and Barmer were explored and information was gathered from the artisans on Zardozi, Gota work, Danke-Ka-Kaam, Mukke-Ka-Kaam and Aari Tari. The locale was selected on the basis of availability of metal embroidery. The researcher collected detailed information regarding socio-economic profile of the artisans, tools and techniques from each of the 10 units of metal embroidery. Information was gathered from two artisans from each unit involved in the art of metal embroidery for the past 10-15 years.

The researcher revealed that Zardozi was mainly done at Chaar Darawaza, Ghat Gate, Ramganj, and Idgah region in Jaipur.

For Gota work Ramganj and Idgah were surveyed in Jaipur and Nayala, 30 km from Jaipur was also explored where this embroidery is practised.

For Danke-ka-kaam, Bohra Wadi and Bada Bazaar in Udaipur were explored. The objective of the study was to gather information from 10 units but unfortunately there were only five working units of Danka work left as this craft is at the verge of extinction as the younger generation is not interested in this art.

A survey was conducted at Baitu and Ramsar region of Barmer region of Rajasthan for getting complete information about Mukke-ka-kaam.

For Aari tari, Siwanchi Gate and Pratap Nagar in Jodhpur were explored.
Results and Discussion

4.2.1 Socio Economic profile of the artisans

Table 4.1: Distribution of respondents according to Age Group (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Age Group (in years)</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>26-35</td>
<td>08</td>
<td>40</td>
<td>09</td>
<td>45</td>
<td>03</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>36-45</td>
<td>08</td>
<td>40</td>
<td>09</td>
<td>45</td>
<td>05</td>
<td>33</td>
</tr>
<tr>
<td>3.</td>
<td>46-55</td>
<td>02</td>
<td>10</td>
<td>01</td>
<td>05</td>
<td>03</td>
<td>20</td>
</tr>
<tr>
<td>4.</td>
<td>56-&gt;</td>
<td>02</td>
<td>10</td>
<td>01</td>
<td>05</td>
<td>04</td>
<td>27</td>
</tr>
</tbody>
</table>

Figure 4.1: Distribution of respondents according to Age Group

Table 4.1 depicts that 40% of artisans engaged in Zardozi embroidery belonged to the age group of 26-35 years and 36-45 years, followed by 10% of artisans in age group of 46-55 years and 56 years and above.
For *Gota* work, 45% of artisans were in the age group of 26-35 years and 36-45 years and comparatively fewer (05%) artisans were in the age group of 46-55 years and above 56 years.

The tabulation for *Danke-ka-kaam* revealed that maximum number of artisans (33%) were in the age group of 36-45 years, followed by 27% in the age group of 56 years and above. The remaining 20% were in age group of 26-35 years and 46-55 years respectively.

For *Mukke-ka-kaam*, maximum numbers of artisans (45%) were in the age group of 26-35 years, followed by 35% in age group of 36-45 years, 15% of the artisans were in the age group of 46-55 years whereas 5% were above 56 years.

For *Aari tari*, maximum numbers of artisans (50%) were in the age group of 26-35 years, followed by 40% in the age group of 36-45 years. Least number of artisans (05%) were in the age group of 46-55 years and 56 years above.

The result denotes that the maximum number (41.05% & 38.95%) of the artisans belonged to the age group of 26-35 years and 36-45 years. Whereas artisans in age group of 46-55 years and more than 56 years were few (10.52% & 9.47%).

Hence, it can be concluded that the artisans are most creatively productive in their youth (26-35 years) due to their physical capabilities and the creative output decreases progressively with age.
Table 4.2: Distribution of respondents according to Gender (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Gender</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Male</td>
<td>20</td>
<td>100</td>
<td>15</td>
<td>75</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Female</td>
<td>--</td>
<td>--</td>
<td>05</td>
<td>25</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Figure 4.2: Distribution of respondents according to Gender

From the above table it is evident that all the artisans engaged in Zardozi embroidery were male.

For Gota work, 75% of the artisans were male whereas 25% are female.

For Danke-ka-kaam, all the artisans were male whereas for Mukke-ka-kaam, all the artisans were female.

For Aari Tari, 60% of the artisans were male whereas 40% were female.

From the above data it can be concluded that male artisans are more dominant in metal embroidery with the mean score 65.27% than the female counterpart accounting for 34.73%. The major finding is that Mukke-ka-kaam is dominated by female artisans and Zardozi and Danke-ka-kaam by male artisans.
Table 4.3: Distribution of respondents according to level of Education (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Education level</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1.</td>
<td>Illiterate</td>
<td>02</td>
<td>10</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2.</td>
<td>Primary</td>
<td>04</td>
<td>20</td>
<td>08</td>
<td>40</td>
<td>08</td>
<td>53</td>
</tr>
<tr>
<td>3.</td>
<td>Middle</td>
<td>12</td>
<td>60</td>
<td>12</td>
<td>60</td>
<td>07</td>
<td>47</td>
</tr>
<tr>
<td>4.</td>
<td>Secondary</td>
<td>02</td>
<td>10</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Figure 4.3: Distribution of respondents according to level of Education

The above table reveals that 60% of the Zardozi artisans were educated till the primary level, followed by middle level (20%) and secondary level (10%) while the remaining 10% were illiterate.

Maximum number of artisans for Gota work (60%) have studied till middle level and rest 40% up to primary level.
The data pertaining to education of artisans of *Danke-ka-kaam* revealed that the 53% of artisans had primary education, followed by middle level (47%).

The education level of artisans of *Mukke-ka-kaam* revealed that the 55% of artisans have studied till middle level, followed by 45% who had studied till primary level.

For *Aari tari*, it can be elucidated that 65% of artisans have studied till middle level and rest 35% upto primary level.

The mean score of the data shows that majority of artisans (57.89%) have studied till middle level, followed by primary level (37.89%), secondary level (2.11%) and remaining (2.11%) were illiterate.

According to the recent survey from Times of India (2013), the literacy rate among women in Rajasthan has increased from 43.9% to 52.1% over the past 10 years. The male literacy rate has also increased from 74.7% to 79.2%. The overall literacy rate has increased from 60.14% to 66.11% in the state.
Results and Discussion

Table 4.4: Distribution of respondents according to Monthly Income (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Monthly Income (in Rs)</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1.</td>
<td>स०1000-4000</td>
<td>--</td>
<td>--</td>
<td>02</td>
<td>10</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2.</td>
<td>स०4001-7000</td>
<td>07</td>
<td>35</td>
<td>12</td>
<td>60</td>
<td>01</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>स०7001-10000</td>
<td>08</td>
<td>40</td>
<td>03</td>
<td>15</td>
<td>07</td>
<td>47</td>
</tr>
<tr>
<td>4.</td>
<td>स०10001-14000</td>
<td>02</td>
<td>10</td>
<td>02</td>
<td>10</td>
<td>04</td>
<td>27</td>
</tr>
<tr>
<td>5.</td>
<td>स०14001&gt;</td>
<td>03</td>
<td>15</td>
<td>01</td>
<td>05</td>
<td>03</td>
<td>20</td>
</tr>
</tbody>
</table>

Figure 4.4: Distribution of respondents according to Monthly Income

From the above table it can be inferred that maximum number of Zardozi artisans (40%) earned between ₹7,001-10,000/- per month, followed by 35% in the income bracket of ₹4,001-7000/-. Fifteen percent artisans earned above ₹14,001/- while the remaining 10% earned between ₹10,001-14,000.
For *Gota* work, 60% of artisans earned ₹4001-7000/-, 15% earned between ₹7001-10,000/-, 10% of artisans earned between ₹1000-4,000/- whereas another 10% between ₹10,001-14,000/-. The remaining 5% of artisans earned above ₹14,001/-.

The data pertaining to income of artisans of *Danke-ka-kaam* reveals that 47% of them earned between ₹7001-10,000/-, followed by 27% artisans in the income bracket of ₹10001-14000/-. Twenty percent of artisans earned above ₹14000/- and the remaining 6% earned between ₹4001-7001/-.

The data related to *Mukke-ka-kaam* idicates that all of the artisans earned a meagre amount between ₹1000-4000/- for the embroidery which is relatively inadequate in comparison to the other embroideries.

Ninety percent of *Aari Tari*, artisans had an income of ₹1000-4000/- and the remaining 10% earned upto ₹4001-7000/-.

The means score of above result shows that the maximum monthly income (42.10%) incurred by the artisan is in income bracket of ₹1000-4000/-, followed by 23.15% in income bracket of ₹4001-7000/-, 18.94% earned between ₹7001-10,000/-, whereas 8.42% earned between 10,001-14,000/and few (7.36%) earned above ₹14,001/-.

Thus, it can be stated that although hand embroidery is time consuming and very demanding but the consequent earning is very meagre not appropriate for handwork done by artisans. Journalist Riddhi Doshi (2012), states unfortunately, those who actually toil hard and are being used to infuse beauty into these fabrics by their painstaking work are themselves living in terrible conditions, working in poor light at the cost of their eyesight. Their income is a pittance when contrasted to the lakhs the designers at home and abroad make because of the value addition to the outfits by the artisans. It is not just the women, but also young school dropouts who are doing the actual work.
Table 4.5: Distribution of respondents according to Working Hours (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Working Hours (per day)</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>4-6</td>
<td></td>
<td></td>
<td>20</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>7-9</td>
<td>02</td>
<td>10</td>
<td>10</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>10-12</td>
<td>14</td>
<td>70</td>
<td>16</td>
<td>80</td>
<td>05</td>
<td>33</td>
</tr>
<tr>
<td>4.</td>
<td>13-15</td>
<td>04</td>
<td>20</td>
<td>02</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.5: Distribution of respondents according to Working Hours

The above table reveals that 70% of the Zardozi artisans, worked for 10-12 hours per day, 20% of them engage themselves for 13-15 hours and the remaining 10% of them for 7-9 hours per day.
For *Gota* work, 80% of the artisans worked for 10-12 hours and the remaining 10% for 13-15 hours per day and 7-9 hours per day.

For *Danke-ka-kaam*, 67% of artisans worked for 7-9 hours whereas 33% engaged themselves for more than 10-12 hours per day.

For *Mukke-ka-kaam*, all the artisans devoted their time for 4-6 hours per day. The embroidery is basically done by women who work after completing the household chores which is also their additional source of income.

Fifty percent of *Aari Tari* artisans work for 10-12 hours per day, whereas 40% of artisans works for 7-9 hours and the remaining 10% work for 4-6 hours per day. The women work only after completing the household chores, they do not work as full time in comparison to male artisans.

The means score of above result denotes that the maximum number of artisans (47.37%) work for 10-12 hours per day, followed by artisans (23.16%) who engage themselves for 7-9 hours and 4-6 hours per day respectively, and the remaining (6.31%) of them for 13-15 hours per day.

Hence it can be concluded that for *Zardozi* and *Gota* work, the artisans work for more than 10-12 hours and 13-15 hours per day because there is demand for this work in the market and it is basically male dominated. Prolonged hours of sitting results in health problems and they do not get sufficient amount in return.
Table 4.6: Distribution of respondents according to Mode of Income (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Mode of Income</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Daily Wages</td>
<td>02</td>
<td>10</td>
<td>02</td>
<td>10</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2.</td>
<td>Monthly Wages</td>
<td>14</td>
<td>70</td>
<td>15</td>
<td>75</td>
<td>09</td>
<td>60</td>
</tr>
<tr>
<td>3.</td>
<td>Contract basis</td>
<td>02</td>
<td>10</td>
<td>03</td>
<td>15</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4.</td>
<td>Any other</td>
<td>02</td>
<td>10</td>
<td>--</td>
<td>--</td>
<td>06</td>
<td>40</td>
</tr>
</tbody>
</table>

From the above table it can be inferred that for Zardozi embroidery, majority (80%) of the artisans work on monthly wages followed by 10% on daily wages, 10% on contract basis and remaining 10% are self employed (owner of the shop).

For Gota work, majority (75%) of the artisans work on monthly wages and 15% are on contract basis and remaining 10% on daily wages.
For Danke-ka-kaam, maximum number (60%) of the artisans work on monthly wages and 40% of them were owner of the shop.

For Mukke-ka-kaam, all the artisans are on contract basis, they only work when they get orders from middlemen.

For Aari Tari, maximum number (70%) of the artisans work on monthly basis and 30% are on daily wages.

The result reveals that maximum number of artisans (46.12%) work on monthly wages, followed by artisans on contractual basis (41.05%), few owns the shop (8.42%) and rest work on daily wages (4.21%).

Hence it can be concluded that the artisans are actual master of the art and they do not get their due wages for the effort put in for the artistic creation. The wages varied with the skill and quality of the product which depends on the proficiency in making of the article and the time taken to complete it.
Table 4.7: Distribution of respondents according to Source of Trade Acquisition (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Trade Acquisition</th>
<th>Zardozi</th>
<th>Got work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Relative</td>
<td>02</td>
<td>10%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2.</td>
<td>Parents</td>
<td>08</td>
<td>40%</td>
<td>10</td>
<td>50</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Master craftsmen</td>
<td>04</td>
<td>20%</td>
<td>02</td>
<td>10</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4.</td>
<td>Formal training</td>
<td>06</td>
<td>30%</td>
<td>08</td>
<td>40</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Table 4.7 indicates that 40% of the Zardozi artisans have learnt this embroidery from their parents followed by 30% who took formal training from institutes or workshop, 20% from master craftsmen and remaining 10% from their relative.

For learning the skill of Gota work, 50% of the craftsmen had learnt the art of embroidery from their parents, followed by 40% who had taken formal training and remaining 10% from master craftsmen.
Results and Discussion

All the artisans have learnt the craft of *Danke-ka-kaam* from their parents and they have not undertaken any formal training elsewhere to learn this craft. The art has been passed from generation to generation as a legacy but very few skilled artisans of this craft are left.

All the respondents of *Mukke-ka-kaam* have learnt the art from their parents because this craft is basically done by women and they do this work after completing the household chores. The young artists begin their training at the early age, working as an apprentice to their mother and grand mother to preserve the ancestral skill.

Seventy percent of artisans engaged in *Aari tari* embroidery have learnt the craft from their parents, 20% have taken formal training followed by 10% who have learnt this craft from master craftsmen.

From the above data it can be concluded that, 70.53% of the artisans have learnt the craft from their parents, they have not undergone any special training to learn this craft and all the skills have been acquired from their parents. Approximately 19% of respondents have taken formal training at workshops followed by 8.42%, who have learnt the craft from master craftsmen remaining 2.11% have imbibed the art from their relatives.
Table 4.8: Distribution of respondents according to Health Problems (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Health Problems</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Eye sight</td>
<td>12</td>
<td>60</td>
<td>11</td>
<td>55</td>
<td>12</td>
<td>80</td>
</tr>
<tr>
<td>2.</td>
<td>Neck stiffness</td>
<td>11</td>
<td>55</td>
<td>10</td>
<td>50</td>
<td>09</td>
<td>60</td>
</tr>
<tr>
<td>3.</td>
<td>Back pain</td>
<td>13</td>
<td>65</td>
<td>10</td>
<td>50</td>
<td>10</td>
<td>66.67</td>
</tr>
<tr>
<td>4.</td>
<td>Muscle spasm</td>
<td>10</td>
<td>50</td>
<td>09</td>
<td>45</td>
<td>08</td>
<td>53.33</td>
</tr>
</tbody>
</table>

Figure 4.8: Distribution of respondents according to Health Problems

The data regarding health problem shows that 65% of the Zardozi artisans reported back pain, 60% eye sight, 55% reported neck stiffness and 50% muscle spasm.

The data regarding health problem of artisans of Gota work denotes that 55% complained about strain in eyes, 50% about back pain and stiffness of neck respectively and 45% muscle spasm.
For *Danke-ka-kaam*, it is inferred that 80% complained about strain in eyes, 66.67% about back pain, 60% about stiffness of neck and 53.31% about muscle spasm.

For *Mukke-ka-kaam*, it can be reported 30% of artisans complained about strain in eyes, 25% of back pain, 20% neck stiffness, 10% about muscle spasm.

The data related to *Aari Tari* indicates that 55% complained about strain in eyes, 45% reported neck stiffness and muscle problem and 40% about back pain.

The above data reveals that 54.74% of artisans engaged in embroidery complained about the strain in eyes due to intricate work and as they focus in a particular area for a long time. Approximately 48% of the artisan reported that back pain is the major problem in embroidering because of the prolonged hours of working in one sitting posture, 45.26% of artisans reported about neck stiffness, 40% complained of muscle spasm because there is not much space and they sit without any back support.

From the above data it can be concluded that prolong hours of sitting and doing work in one particular area affect the health of the artisans. It was felt that the owner should provide backrest or some soft mattresses so that the adverse effect on health can be reduced and productivity can be improved.

Pandey (2009), reported that the immediate effect of health deterioration are not visible but as the ageing starts the effects of long hours of wrong posture starts showing on the walking posture. They walk with a slight bent posture and poor light at workplace adversely affects the health of the artisan. Deteriorating health is a frequent, though not an inevitable, part of the ageing process for both sexes and women make up the majority of elderly people in the world. Moreover, the ageing process itself is a highly gendered one and the experience differs for women and men in a number of ways.
Results and Discussion

Table 4.9: Distribution of respondents according to Working Environment (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Working environment</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1.</td>
<td>Light</td>
<td>09</td>
<td>45</td>
<td>12</td>
<td>60</td>
<td>09</td>
<td>60</td>
</tr>
<tr>
<td>2.</td>
<td>Ventilation</td>
<td>10</td>
<td>50</td>
<td>11</td>
<td>55</td>
<td>10</td>
<td>66.67</td>
</tr>
<tr>
<td>3.</td>
<td>Seating arrangement</td>
<td>08</td>
<td>40</td>
<td>12</td>
<td>60</td>
<td>08</td>
<td>53.33</td>
</tr>
<tr>
<td>4.</td>
<td>Drinking Water</td>
<td>20</td>
<td>100</td>
<td>20</td>
<td>100</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

![Figure 4.9: Distribution of respondents according to Working Environment](image)

From the above table it can be reported that 45% of the Zardozi artisans were satisfied with light provided to them, 50% of the respondents were satisfied with the ventilation of room and 40% regarding seating arrangement.
For Gota work, it can be elucidated that 60% of the artisans were contented with provision of light, 55% with well ventilated rooms and 60% with seating arrangement.

For Danke-ka-kaam, it can be inferred that 40% of the artisans were satisfied with light provided to them for embroidery, 66.67% for ventilation and 53.33% for seating arrangements.

For Mukke-ka-kaam, it indicates that 40% of the artisans were satisfied with provision of light, 55% of the respondents were satisfied with the air ventilation of room and 60% with seating arrangements provided to the artisans.

From the data related to Aari Tari, it was found that 45% of the artisans were satisfied with light provided to them, 60% of the respondents reported that the rooms are well ventilated and 45% about seating provision.

Further it can be reported that all the artisans of metal embroidery are provided with drinking water.

The mean scores indicate that the majority of the artisan (54.47%) were satisfied with ventilation room provided to them followed by adequate light (49.47%) and seating arrangements (48.42%). Hence from the above data it can be concluded that working environment for the artisans was quite satisfactory.
Table 4.10: Distribution of respondents according to interest of Younger Generation to Learn the art (n=95)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1.</td>
<td>17</td>
<td>85</td>
<td>16</td>
<td>80</td>
<td>05</td>
<td>33.33</td>
<td>08</td>
</tr>
<tr>
<td>2.</td>
<td>03</td>
<td>15</td>
<td>04</td>
<td>20</td>
<td>10</td>
<td>66.67</td>
<td>12</td>
</tr>
</tbody>
</table>

From the above table, 85% of the Zardozi artisans reported that the younger generation is interested in learning this art whereas 15% are not at all interested in carrying this art forward.

Eighty percent artisans of Gota work stated that the younger generation is interested in learning this art whereas 20% are not at all interested in carrying this art forward.
For Danke-ka-kaam, maximum number (66.67%) of artisans reported that they do not want younger generation to learn this art whereas 33.33% are interested in carrying this art forward.

For Mukke-ka-kaam, 60% of artisans reported that the younger generation is not at all interested in learning this art whereas 40% are interested in carrying this art forward.

Seventy percent of artisans for Aari Tari reported that the younger generation is not at all interested in learning this art whereas 30% of artisans are interested in carrying this art forward.

The mean score indicates that 63.16% of the artisans wanted their younger generation to carry the art forward whereas 36.84% of the artisans do not want their next generation to pursue the same work. The artisans have realized the importance of education. They want their children to be educated and look for other jobs which are more paying.
4.2.2 Overview of the units

Table 4.11: Distribution of respondents according to Procurement of Order (n=45)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Procurement of Order</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Direct Customer</td>
<td>02</td>
<td>20</td>
<td>03</td>
<td>30</td>
<td>05</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>wholesaler/middleman</td>
<td>06</td>
<td>60</td>
<td>06</td>
<td>60</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Shopkeeper</td>
<td>02</td>
<td>20</td>
<td>01</td>
<td>10</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

From the above table, it can be reported that 60% of the Zardozi unit owners got the order of the product from wholesaler/middlemen whereas 20% of the unit owners got orders from direct customers and the remaining 20% from the shopkeepers.
For *Gota* work, 60% of the unit owners got order of the product from wholesaler/middlemen, 30% from the customers and remaining 10% through shopkeepers.

For *Danke-ka-kaam*, all of the unit owners got the order of the product from the customers.

For *Mukke-ka-kaam*, all of the unit owners got the order of the product from wholesaler/middlemen.

For *Aari Tari*, 80% of the units got the order from middlemen whereas the remaining 20% through customers.

From the above results it can be analysed that 66.67% of the unit owners got order through middlemen, 26.67% through customers and remaining 6.66% through shopkeepers. The result indicates that the unit owners are dependent on the middlemen for the supply of work. Hence it can be concluded that artisans do not get the regular work and payment from middlemen because there is no direct link with the shopkeepers.
Table 4.12: Distribution of respondents according to the Sources of Design (n=45)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Sources of Design</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
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<td>30</td>
<td>05</td>
<td>50</td>
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<tr>
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<td>01</td>
<td>10</td>
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<td>--</td>
</tr>
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<td>3.</td>
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<td>30</td>
<td>02</td>
<td>20</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4.</td>
<td>Retailer</td>
<td>02</td>
<td>20</td>
<td>02</td>
<td>20</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Figure 4.12: Distribution of respondents according to the Sources of Design

The table 4.12 reveals that 30% of the Zardozi units have inhouse facility for creating designs, 30% of the unit owners get the designs for production from contractors whereas 20% of the units get design outsourced from professional designers and the remaining 20% from the retailer.
For *Gota* work, 50% of the unit owners got the designs for production from their own unit, 20% from the retailer, 20% through contractor and remaining 10% through professional designers.

For *Danke-ka-kaam*, no outsourcing of the design is done as the artisans use their creativity to design the orders received from customers. They have their own catalogue of design.

For *Mukke-ka-kaam*, 70% of the units got design from own unit which have inhouse facility for creating designs and 30% of the units from the contractor.

For *Aari Tari*, 50% of the unit owner got the designs from their own unit, 20% through contractor whereas 20% got designs from the retailer. The remaining 10% of the units get design outsourced from professional designers.

From the above result it can be analysed that maximum number of units (55.56%) sourced the design from their own unit, 22.22% through contractor, 13.33% from the retailer and remaining 8.89% through professional designers. The result states that the maximum number of unit owners uses the same design for years without much modification in designing.
Table 4.13: Distribution of respondents according to Percentage of Profit (n=45)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Profit percent</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
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<tr>
<td></td>
<td>n</td>
<td>%</td>
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Figure 4.13: Distribution of respondents according to Percentage of Profit

From the above table it can be inferred that 70% of the Zardozi units accrued profit of 10-15% on the product, 20% of unit owners earned a profit of 15-20% whereas 10% gained a profit of 20-25%.

Seventy percent of the unit owners gained a profit of 10-15% on the product of Gota work, followed by 20% who earned a profit of 15-20% whereas 10% gained a profit of 20-25% on the products.
For *Danke-ka-kaam*, 60% of the unit owners gained a profit of 10-15% on the product, followed by 40% who earned a profit of 15-20% on the products.

For *Mukke-ka-kaam*, all the unit owners gained a profit of 10-15% on the products.

For *Aari Tari*, majority of the units (90%) earned a profit of 10-15% on the product and the remaining (10%) gained a profit of 15-20% on the products.

The above result shows that majority of unit owners (80%) earned a profit between 10-15%, followed by 15.56% who earned the profit of 15-20% on the product and the remaining (4.4%) earned the profit between 20-25%.

It can be concluded that the profit earned by the unit owners on product is very less. This is because they are not much educated, artisans neither identify potential of markets for their products nor do they understand the requirements for interaction with buyers. At present, there is a gap between the embroiderer and the buyer. This is gap bridged by the middlemen who get the embroidery done by the artisans at very low wages and markets it at a good margin for themselves. This has caused much grief and deprivation to the poor artisans who have been terribly marginalized by the middlemen and brokers. Thus commercialization has not only exploited the craft worker, it has also led to complete deterioration in the quality of the work.
Table 4.14: Distribution of respondents according to Problems faced by the Unit (n=45)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Problems</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
<th>Mean</th>
</tr>
</thead>
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<td>n</td>
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<td>Designing</td>
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</tr>
<tr>
<td>4.</td>
<td>Cost</td>
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<td>70</td>
<td>06</td>
<td>60</td>
<td>03</td>
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</tr>
<tr>
<td>5.</td>
<td>Competition</td>
<td>06</td>
<td>60</td>
<td>05</td>
<td>50</td>
<td>03</td>
<td>60</td>
</tr>
</tbody>
</table>

Figure 4.14: Distribution of respondents according to Problems faced by the Unit

The table 4.14 indicates that the common problems faced by the Zardozi unit owners were shortage of labour (60%), quality of workmanship (60%), problems related to...
designing (40%), cost of the product (70%) and stiff competition in the market (60%).

For *Gota work*, it reveals that the problems faced by the unit owners are shortage of labours (50%), quality of workmanship (60%), problems related to designing (40%), cost of the product (60%) and stiff competition in the market (50%).

For *Danke-ka-kaam*, the result reveals that the problems faced by the unit owners are shortage of labours (100%), quality of workmanship (40%), problems related to designing (40%), cost of the product (60%) and stiff competition in market (60%).

For *Mukke-ka-kaam*, it indicates that the problems faced by the unit owners are shortage of labours (50%), quality of workmanship (20%), problems related to designing (30%), cost of the product (40%) and competition in the market (30%).

For *Aari Tari*, it reveals that the problems faced by the unit owners are shortage of labours (40%), quality of workmanship (50%), problems related to designing (40%), cost of the product (30%) and competition in the market (30%).

The results reveal that the problems faced by unit owners are shortage of labours (55.55%), quality of workmanship (46.67%), inability to create innovative designs (37.78%), cost of the products (51.11%) and competition from the market (44.44%).

From the above table it can be concluded that shortage of labour and cost are the major concern as price of the product increases, it requires skilled labour. Maintaining the quality of the product is another problem because when there is bulk order then they have to produce product in shorter period of time resulting in degrading the quality of product. Designing is the next factor, as the artisans are unable to create stylised designs moreover they are not able to create products which are contemporary. Last but not the least there is stiff competition because of machine embroidery. Hence there is need to make efforts in order to sustain hand embroidery industry.
4.3 Raw Materials, Tools and techniques of Metal Embroidery

In view to provide comprehensive details, result have been discussed according to the raw materials, tools and techniques used in Zardozi, Gota work, Danke-Ka-Kaam, Mukke-Ka-Kaam and Aari Tari.

4.3.1 Zardozi:

Embroidery that uses gold and silver wire is known as Zardozi. Earlier Zardozi was done with pure silver wires coated with real gold. Due to commercialisation silver and gold wires have now been replaced with synthetic threads, but the art remains the same. Zardozi work is practiced by both Hindu and Muslim Community.

The zari thread comes in long curled strips of shiny gold wire and is sold by weight. They are all purchased from the local market. Dabka, nakshi, kora are bought at the rate of ₹1200-1400/kg, Salma is bought at the rate of ₹1300-1500/kg, The cost of kasab is 700-800 Rs/ kg sequins at an average rate of ₹300-400/kg and the cost could vary according to the size of the sequins.

Materials used in Zardozi Embroidery

The base of it is metal wire. Metal wire is made by melting the wire and passing through perforated steel sheets, to be converted into wires. They are then hammered to the required thinness. These metallic wires form the design. The plain wire is called badla, prepared from a flattened wire which is laid on surface of the fabric, and when wound round a thread, it is called kasav. Smaller spangles with hole in centre are called sitara, and tiny dots made of badla are called mukaish. Tilla is the flat wire which cannot be threaded and is stitched directly on to the material. Salma is very fine, soft unflattened wire wound spirally without a thread in the centre. Dabka is a light weight coiled wire which is soft, flexible, and light both in weight and colour. A heavier form of dabka known as kora. Nakshi is a flat metal wire coiled in angular way similar to dabka except that it is thicker. A round zari with a hole in the centre is called is called chakri. Gijai is circular thin stiff wire. This is generally used in intricate pattern.

A variety of other materials used for the embroidery are sequins, beetle-wings, glass and plastic beads, shiny stones that look like diamonds.
Fabric: Silk, velvet, satin, crepe, chiffon, georgette and cotton fabrics are embellished by cordial alliance of the opulent metal wires. Contemporarily the synthetic fabric such viscose and polyester is the choice of many users. The variegated form of base fabric reflects the adaptable nature of the zardozi.

Stitches: Zardozi is worked in two different styles. The first is karchobi, recognised by density of the stitches and kamdani, the lighter more delicate work. The stitches that are used in Zardozi are laid-stitch, couching, stem stitch, running stitch and satin stitch. Raised effect is given in Zardozi by padding in soft thick cotton thread and cardboard or bukram.

Motifs: The artisans revealed that with modern influence, the patterns has changed. Geometric shape along with floral motifs, circles and triangles is being worked into the margins forming a body of flower. Border designs often consist of triangular forms with floral bel. The bel design usually consists of trellised pattern, trellised border or scalloped trellis pattern. They are usually used in border design or allover pattern. The corner of the design is usually adorned with large buttas i.e. mango, a floral spray, paisley, peacock and paan (heart shaped). The field is filled with sprays, floral buds, small butis and animal figure, especially in Karchobi style. Jaali design in bel and patti is also extensively used in designing. The motifs has distinctive names like ganga-jamuna; blend of gold and silver thread, jamavar; overall elaborate trellised pattern, bel; trellised border, hazarbutas; fine work with glittering thousands butties, kataokibel; scalloped trellis border.

An overall glance at the motifs of zardozi work shows that the motifs are still very traditional and has the scope of contemporisation.

Motif size: Clients usually specify the patterns and motifs to suit their budget and choice. Generally the size of the motifs range from 2”-12” and for border design the size ranges between 4”-6”.

Adda or wooden frame: Zardozi also known as karchobi because it is done on karchob which means framework. This is a wooden or metal frame over which the cloth is pulled tightly, so that it does not move while the artisans are at work. The adda or wooden frame follows the assembly and tightening principles of the khatia,
and gives the cloth a uniform tension. It consists of four wooden bamboo stick resting on wooden posts. The frame can be made to fit any size of fabric. The two vertical beams of frame are called farad and horizontal beam is called shamsharak. The size of frame changes according to the article to be embroidered. The adda size ranges from 1metre x 2metre, 1metre x 3metre and 1metre x 4metre according to the size of the article to be embroidered.

**Thread used:** Cotton silk and polyster thread are used for stitching the zari. Cotton padding is also used for giving 3D look to the design.

**Needle:** The embroidery is done with a needle to sew the zari element on to the fabric. The needle used is generally number nine. But it depends on the design and the thread used. Ari is a small crochet-hook-like needle, with a fine notch at one edge, and the other edge is fixed in wooden handle for smooth functioning.

**Hammer and dabber:** They are the wooden tools made of shisham wood. Dabber is put under the surface for support and hammer give light stroke on the embroidery which gives lustrous look.

**Process of Zardozi Embroidery**

**Following are the steps in doing the embroidery:**

**Tracing:** Firstly the design is traced on to the tracing paper and then the design is perforated with the needle all over on the design. The fabric on which the embroidery is to be done is placed on a flat table and the tracing sheet is placed in position. A solution of kerosene and Robin Blue/zinc oxide is made. A wad of cloth is dipped into this solution and wiped against the tracing so that the ink seeps through the holes to trace the design onto the fabric.

**Embroidery Process:**

The fabric to be embroidered is stretched over a frame called the adda. The artisan sits on the floor behind the wooden frame and works on the piece of cloth. The frame itself is quite large, and can comfortably accommodate five to seven artisans working together on the pre-traced designs. Zardozi is done by passing the needle which is threaded underneath the fabric to the surface and then from the surface
below. The needle thus moves upward from the wrong side. The \textit{zari} wires are cut into small pieces and laid so closely that they appear to be continuous thread to even to a trained eye. The needle and thread method is far more dependable, but is very time and labour consuming, and hence far more expensive. The \textit{ari} greatly enhances the speed of the work, as it enables the artisan to pass the threads both above and below the fabric. The thread acts as binding medium, whereas the body of the design is completed by laying varieties of metallic threads in several shapes.

The smallest work takes a day to be completed and the most exclusive work upto ten days. Heavy bridal \textit{lehenga} takes month to complete the work. Each piece is charged per design and material used. For bridal wear, the embroidery is usually very intricate and neatly done with the finest \textit{dabka}, cowries and stones.

**Various Product of Zardozi embroidery**

These days \textit{Zardozi} is used to make exquisite evening dresses, coats, sarees, salwar suits, \textit{kanchli}, \textit{lehenga chunni}, blouses, fashion accessories like purses, handbags, belts, shoes; furnishing accessories like cushion covers, wall hangings, table covers, boxes and even curtains.

![Schematic presentation of stitches used in Zardozi](image)

**Figure 4.15 : Schematic presentation of stitches used in Zardozi**
Plate 4.6A Variety of Metal wire

Dabka

Salma

Gijai

Kora

Nakshi

Metal strips for mukaish

kasab

Sequins
Plate 4.6B: Process of Zardozi Embroidery

Stitching the fabric on karchob

Stretching the fabric on karchob

Perforating the motif

Tracing the design

Traced design on fabric

Application of salma and dabka on fabric

Artisans at work
4.3.2 Gota work:

Gota is a narrow ribbon with badla sheets forming the warp and silk or cotton thread as the weft woven in a satin weave. In pure gota, silver and gold metals are used. Gold and silver metallic threads are drawn through a series of dies to obtain a fine thread. This can either be hammered flat or used as it is. It can be wound around a silken or cotton filament core to make it thread. Gota has good resistance to moisture and does not tarnish as compared to metal-based gota. But in routine, the base metal is copper, coated by silver etc. Now the copper has been replaced by polyester film which is metalized and coated as per requirement. This has resulted in better quality at lower cost. The cost of gota is 1500-1800 Rs/Kg and is procured from the local market. This craft is practised by both Hindu and Muslim Community.

Types of Gota: There are various types of gota available in the market. They are Sikhya gota, Chumasa, Panchmaya, Panchasa, Lappa, Thappa, Gokhru, Lehru gota, Bijbel, Bijiya, Churu, Kiran, Chatai, crimped gota and Chip gota. Sometime gota is cut according the new design.

Fabrics: The fabric used are georgette, chiffon, velvet, satin, crepe, net, chiffon, and silk fabric but nowadays synthetic fabrics such as viscose and polyester are also used for the production. The traditional colour pallette has kesari (saffron) red, orange, rani (Indian pink), magenta, maroon, green and yellow.

Stitches: Hemming is done to attach gota on the fabric. The stitches that are generally used are stem stitch and couching along the edges of gota, highlighting the designs.

Motifs: Floral design includes gamla, champa phool, double champa phool, taari ka phoool, pan ka phoool, jaliwala phool, star phool, and round pleated flower. To get a variation, floral designs are cut from gota and embroidered onto the cloth with the help of a kasab. Gota can be cut into small pieces and folded in the shape of leaves. They are also twisted and stitched on the cloth in the form of continuous triangle on the border forming various geometric shapes.

Peacock and checkerboard patterns are also quite a favourite. Crinkled gota in geometric design are used in border and variations of flowers in small buties are
used as allover design. Stylized paisley motifs and heart shapes are usually placed at each corner and supplemented by row of repeat of these motifs on various kinds of sarees, odhna and ghagras.

**Size of the motifs:** The size of the motifs varies according to the intricacies of design from 1-8 inches but sometimes according to the demand the motif size varies to 12 inches. Basically the border designs are highlighted by the intricate designs of gota patti work with the width of 1-10 inches. Patterns have greatly increased in complexity from relatively simple designing since last century.

**Frames:** Wooden frames of different sizes 1metre x 2metre, 1metre x 3metre and 1metre x 4metre were used as per the need which is locally called Adda. These frames are adjustable according to the size of the article made.

**Thread:** Gota is pasted on the fabric by fabric glues and then it is tucked on to the fabric surface along with kasab using a cotton thread as it supports the Gota to stay at its place and reduces the chance of breakage because of its strength. Sometimes resham thread is also used for embroidery.

**Needles:** The embroidery is done with a needle and a hooked awl called ari. The needle used is generally numbered 09 & 10.

**Hammer and Dabber:** Dabber is put under the surface for support and hammer gives light strokes to the embroidery which gives lustrous effect.

**Embroidery Process:**

**Steps followed for Gota work are:**

**Tracing:** The design is traced on paper by a pencil and small holes are punched on it closely. The design paper was placed on the fabric to be embroidered and smeared with a solution of kerosene oil and neel, which passes through the holes; making impression on the fabric. Safeda or zinc oxide is also used for tracing the design onto the fabric.

**Embroidery process:** Firstly, the base fabric is tied on four sides with thick cords and is attached to wooden frame known as adda. According to the outlines of the
design, *gota* is cut and folded into different shapes or it may be stitched in a simple line. The *gota* is first pasted by fabric glue onto the fabric. To create different designs *gota* is cut and folded and is attached in various geometrical or in figured form with hemming and back stitch on the fabric. Attractive designs of flowers, leaves and decorative motifs could also be made on *gota* by pressing it manually, under blocks or by dies. After the application of *gota* on to the fabric, it is hammered by pitan to give uniformity. Then starch is applied underneath the fabric and left it dried for few hours.

**Products:** *Gota* lacing is extremely popular, *odhni* and turban edges are worked with it. Saree, salwar suits, dupattas wedding trousseau, long shirt like blouse, long skirts, scarfs, *poshaks*- *kurti, kanchli* and *ghagra* are embellished with *Gota* motifs and designs. Other than apparel, outstanding *Gota* work is done on door fringe, platter cover and animal saddles. *Gota* laces are also used in garlands of groom and *poshaks* of deities.

![Gota tucked with hem stitch](image1)

![Couching kasab around gota](image2)

![Couching kasab around gota in loop](image3)

**Figure 4.16:** Schematic presentation of stitches used in *Gota* work
Plate 4.7A: Different types of Gota

Thappa Gota

Sal gota

Gota moti

Kiran

Lehar Gota

Sikhiya gota

Beejiya Gota

Chatai Gota

Gota Tukdi

Lappa Gota

Beej bel

Crimped gota

Panchmasa

Chaumasa
Plate 4.7B: Steps followed for Gota work

Sticking *gota* with fabric glue

Sewing *gota*

Artisan cutting *gota*

Beating *gota* with hammer and dabber

Finishing by applying starch
4.3.4 Danke-ka-kaam

The artisans revealed that Danka is a small square plate, which varies in size but is not bigger than 1.5 cm. Real danka is procured from the manufacturer but the plastic danka is bought from the local market which is now more prevalent. Fabric, thread and kasab are also procured from local market. The cost of plastic danka ranges from 1500-1900Rs/kg, whereas the cost of gold and silver danka varies according to the rate of gold and silver. This craft is usually practised by Bohra Community.

Manufacturing Process of Danka

The process of manufacturing and electroplating danka is carried out within the houses of the danka manufacturers. This is a closely guarded activity and the entry is restricted to only family members and few selected workers because real gold and silver is used. The danka making process is very elaborate and requires lot of money to be invested in buying silver and gold that is why demand has decreased. Some of the manufacturers are practising this craft because their ancestors were involved in this craft. The demand for Danke-ka-kaam is decreasing day by day due to skyrocketing prices of gold and silver, so manufacturers do not prefer in investing their savings in it.

Earlier, danka was also made with superior silver sheet, Silver brick was melted into thick foils from which the danka plate was made by applying it between two rollers in ironing process repeatedly to get required thinness and shine. Then gold foil was applied to its surface and pressed. Of late, well-finished, polished thin silver sheets of 98% purity are electroplated with gold in strips of 30 cm by 2.5 cm. These are then washed in plain water and polished once again with a tool called “Opni” and the process is called ghisai. The strip is then cut into 1.25 cm. squares. The size of the danka is about 1cm-1.5cm, and it is very shiny at its surface. The gold plated silver wire called "kasab" which used to wound around the danka plate was also gold plated silver wire for the embellishment. The making of kasab is also a very tedious job involving winding, twisting, wire drawing and gold plating of thread.

Fabric: The danka work is done mainly on satin, georgette, silk, velvet and chiffon fabric. The traditional colour palette has kesari (saffron), angoori (grape green),
Results and Discussion

*morgardani* (blue green of the peacock’s neck), *totai* (parrot green), *mehandi* (heena green), turquoise, *rani* (Indian pink), *phalsa* (the reddish mauve), etc.

**Stitches:** Couching is the main stitch used in *danke-ka-kaam*. Additional stitches with zari wire are used such as chain stitch and satin stitch are used for the design filling, while stem, back stitch and running stitches for lighter work. The *Dori* embroidery is compulsory done at the edges of *danka* with *Kasab*; this enhances the beauty of *danka* plate.

**Motifs:** The floral motif consists of 4, 5, 6, 8, and 16 petals, the petals have small knot at the tip. Border designs are usually embellished with floral motifs. Gamla motifs with floral spray are used in corner design or centre design. Scalloped pattern are used in allover design. Peacock is the most popular design usually seen in most of *danke-ka-kaam* products and this is treated as the center and corner motif. Dancing and reflected peacock are the variations in designs. Crescent moon is also used in designing.

The other most popular motifs used in *danke-ka-kaam* are paisley and pan, with or without floral *buti* in it. The combination of paisley leaf instead of flowers in a *bel* design is called as *keribel*. A vertical strip of stem and leaves was done named as *chari*, in border with single leaf design called *kangura*, these were exclusively used for borders only.

**Size of motif:** The size of motif ranges from 3” to 9”. For borders, the width ranges from 1.5-4 inches. The *jaal* varies according to the length of the garment and demand of the consumer. The working units have readymade samples and catalogue of design for approval by the customer. They prepare the article only on order. For years, same design are being used again and again.

**Frames:** Wooden frames of different sizes i.e. 1metre x 2metre, 1metre x 3metre and 1metre x 4metre were used as per the need which is locally called *Adda*. These frames are adjustable according to the size of the article to be made.

**Needles:** The embroidery is done with a needle and a hooked awl kind of needle called *ari*. The needle used is numbered 09 & 10, used for the attachment of *danka*.
Thread: Embellishments are done along with *danka* by using gold polished silver wire called “Kasab”. *Danka* is tucked on to the fabric surface by using a cotton thread. Sometimes resham thread is also used for doing the embroidery.

Embroidery process

The process of Danke-ka-kaam is described as:

**Tracing:** The design is traced on paper by a pencil and small holes are punched on it closely. The design paper is placed on the fabric to be embroidered and smeared with a solution of kerosene oil and *neel*, which passes through the holes; making impression on the fabric. White pencil colour is used for tracing the motif on delicate fabrics. The design is drawn on hardboard and traced on the fabric by placing the hardboard under the fabric and redrawing the design from upper side through a white pencil colour.

**Application of Danka:** The artisan sits on the floor behind the wooden frame (*adda*) and uses small needle to create intricate designs. *Danka* pieces are spread on the fabric as required by the design. The *danka* is pierced with a sharp needle, bringing out the thread through the fabric. *Danka* is tucked on to the fabric surface by using a cotton thread because cotton thread support the *danka* plate to stay at its place and reduce the chances of breakage due to sharp edges of *danka* plate, if silk thread or zari thread were used then they may have more chances of breakage. About three to five strands of gold plated silver wire called "kasab" is wound around each *danka* and couched down along its edges to highlight the design. Additional stitches with zari wire are used such as chain stitch, satin stitch are used for the design filling, while stem, back stitch and running stitches for lighter work.

The embroidery of *danka* is performed in a very interesting manner. Border is a compulsory feature to be embellished in *danka* products. It takes weeks to finish each artwork. After hours of painstaking labour the beautiful imagination turns into a rich textile. The quantity of gold and silver used in this work depends on the complexities of the design and this is the criteria according to which pricing is determined because the work sold according to the weight of total gold plated silver engaged and the labour cost.
**Results and Discussion**

**Storage of the Garment:** The work should be carefully stored covered into fabric because it is the real work which can turn black after certain period of time.

**Products:** *Poshaks, Lehenga chunni, sarees and odhani* are the articles on which danka ka kaam was done. Beautiful borders are masterfully embellished with great artistry on *lehengas, poshaks, and saris*. The price of saris ranges from ₹9,000 containing 200gm of gold polished silver in it, with the simplest form of motifs used in designing the saree. The bridal lehengas with the average weight of 1500 gm of danka embellishment ranges from ₹60,000- 70,000/-.

![Couching Kasab around danka](image1.png) ![Bundle couching](image2.png)

**Figure 4.17 : Schematic presentation of Stitches used in Danke-ka-kaam**
Plate 4.8: Material and Process in Danke-Ka-Kaam

Plate 4.8: Material and Process in Danke-Ka-Kaam

Needle

Kasab

Dori

Danka Plates

Placement of danka on fabric

Placing Kasab on danka

Artisan doing embroidery
4.3.4 Mukke-ka-kaam:
The couching of gold and silver metal thread is known as *Mukke-ka-kaam*. *Mukka* is the local name for metallic thread wound around the core of cotton fibre. The embroidery is characterised by a great image of fine stitchery and vivacity of embellishment and colour matching. *Mukke-ka-kaam* is basically done by the women of Sindhi muslims and Meghwal community in Barmer and Jaisalmer. The fabric, *mukka* thread and mirror were procured from local market. The cost of *Mukka* is ₹2500- 3000 / Kg.

All the women started at the very young age and by the time of puberty they are the masters of the embroidery. They embroider for themselves as well as they took orders for local market.

There is a decline of embroidery as a popular art, due following reasons firstly, introduction of education to girls. They no longer have time to learn stitches from their mother’s. Secondly by great upheavals in the caste structure, means that the caste system does not exist as before and they are able to find work outside their own caste. The third reason is that the women joyfully and lovingly produce such fine work for their own marriage (Gillow & John, 1991).

**Fabrics:** *Mukke-ka-kaam* is usually done on bright coloured cotton fabrics. The colour palette has red, green, blue, black, maroon etc. This decorative technique is usually worked on cotton fabrics. *Mukke-ka-kaam* is usually worked on double layered fabric due to the weight of the *mukka* and this is worn in winter because *mukka* is the metallic thread that produces heat. In this embroidery frames are not used, embroidery is directly done on the fabric.

**Needle & Thread:** The couching of the *mukka* is done with needle of size 06 & 07. Both golden and silver *mukka* is used in this embroidery work. Black wool is used to outline the design. Bright cotton anchor thread is also used for filling design.

**Stitches:** Metallic thread and cotton thread is required for couching. The laid thread is attached to the fabric surface by the line stitches made with couching or tied thread, which is in contrasting colour. *Mukka* is couched on to the fabric surface by using contrasting coloured cotton thread. Loop couching (*marori*) is also one of the
main feature of mukke-ke-kaam where the wire turns upside down in uniform way. The mukka is substantial and heavier than the couching thread. The couching is skilfully executed so as to reveal the maximum surface area of the metallic yarn. In addition to coiling, various other stitches like the chain stitch, double chain stitch, herringbone and outline stitches are also used. Satin stitch is used for filling in the designs. Mirror is used to ornament the embroidered article and was embroidered with buttonhole stitch.

**Motifs:** The artisans focus on motifs inspired by phenomena of nature. They embroidered motifs of geometrical shapes i.e. circles, square, stars, diamonds, rectangle and triangles. Among the geometrical pattern, the lines- vertical, horizontal, diagonal, zigzag and stripes are used with the shapes to enhance the design. These lines were used independently or closed to geometric shapes forming jaal. Floral designs are also used in this embroidery. The speciality of the design of Mukke-ka-kaam shows they are always made in square block in which the design is created. The local name of motifs and design are derived from everyday objects like funi, patasha, chaukri, and daboo.

The designs and motifs used are handed down unchanged from generation to generations; they are inspired by indigenous flora and fauna. It is the tradition that has survived intact and remains alive due to relative geographical isolation and absence of industrialisation.

**Motif Size:** The size of the motif in the field design ranges from 3-6 inches whereas in border design it varies from 2-6 inches.

**Embroidery process**

**Following are the steps in Mukke-ka-kaam**

The design is traced on the fabric. Double layered mukka is couched on to the fabric surface by using a cotton thread because it support the dori to stay at its place and reduce the chances of breakage. Mirror is also used which is tucked by buttonhole stitch. The mukka moves according to the design. Stitches like chain stitch, satin stitch are used for the design filling. It was observed that the designs on the bodice of Kachchhi were arranged perpendicular to the neck is a distinguishing feature of
Mukke-ka-kaam. The *mukka* is so skilfully couched on to the fabric that there is lesser chance of visibility of the fabric. One of the salient features of *mukka* work is that it neither fades nor turns black. It takes weeks and months to finish each artwork. After hours of painstaking labour the beautiful imagination turns into a rich textile.

**Products:** The *Mukke-ka-kaam* is done on *kanchli*, blouses, mirror case, pouches, *bujkis* (small purse) and wall hanging. The edging is worked with beads, buttons and woollen pompoms. Bujkis, the square piece embroidered in *mukka* technique with three corners folded towards the centre. A tie cord with pompom attached to the fourth corner. The article is gift for the groom.

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**Figure 4.18:** Schematic presentation of stitches used in Mukke-ka-kaam.
Plate 4.9: Material used in Mukke-ka-kaam

Gold and Silver Mukka

Outlined by black thread

Cotton thread

Mirrors

Artisans at work

Mukke-ka-kaam embroidery by Meghwal and Sindhi muslim women
4.3.5 Aari Tari:

Aari Tari is old embroidery much patronized by the royal families of India. It is extremely fine and has a refined elegance that is timeless and classic. Aari Tari embroidery was done primarily by the Muslim cobbler community with an outstanding craftsmanship, exuding beauty for the beholder and artistic flair of the creator. The expressive flamboyancy of the technique adds in flavour of artistically attributes making the medium significantly favoured and admired by all. The Aari tari thread and other embellishment were procured from local market of Jodhpur. The cost of the thread is ₹600-900/kg.

**Fabric:** The fabric used in Aari tari is georgette, velvet, satin chiffon, crepe and all synthetic material.

**Threads:** Zari or metallic threads are commonly used for Aari work. Threads of various colors are also used. Cotton and silk threads are also used in this embroidery.

**Other embellishments:** Sitara, sequins, beads or semi precious stones added, can make the fabric appealing while giving it a unique exclusivity. The most eminent aspect of this embroidery technique is the quality of depth being created in each form, which is sometimes adorned with tiny mirrors.

**Frame:** This is a wooden or metal frame over which the cloth is pulled tightly to prevent it from moving while artisans work on it. The frame enables faster work and clear vision. Wooden frames of different sizes i.e. 1metre x 2metres, 1metre x 3metres and 1metre x 4 metres were used. The size of the frame varies according to the product to be embroidered. It generally costs up to ₹1200-1500.

**Needle:** A simple needle or a crochet like hook fixed to a wooden stick called the ari are used for the embroidery. The word ari comes from the hooked needle used in the embroidery called the aar. The needle used is generally numbered nine. But it could depend on the design and the thread used. The hooked needle costs ₹15-25 whereas simple needle costs ₹3-5 per needle.
**Stitches:** Small chain stitches are commonly used in Aari embroidery both for outline as well as to fill the motif, creating a rather intricate look. Intricate and fine chain stitch creates any kind of complex or simple pattern.

**Motifs:** The motifs that are generally used *Aari Tari* are floral and geometrical. With modern influences, the patterns have changed. Floral butis and butas occupy an important place in this art and made in various styles and design. Among the floral motifs embroidered, jasmine, flowering stems, lotus, paisley and *pan* motifs are most popular in the apparel. *Guldasta*, cluster of floral sprays are used either in the corner or border of the articles.

**Tracing:** The design is first drawn on a tracing paper. Using a needle, holes are pierced all along the lines. Next, this is placed on the fabric. A mixture of kerosene and robin blue or zinc oxide is made and rubbed with a sponge on the tracing paper. It seeps through the holes and is transferred to the fabric. The design is transferred onto the fabric.

**The Embroidery Process:**

**Following are the steps involved for Aari tari embroidery:**

The fabric is stretch over a frame called the *adda*. A smaller metal frame may also be used if the embroidery focus is in a small area. A needle with a hooked end and *Zari* (gold or silver) are used. The ari has an awl like handle and a needle sharp metal shaft with invisible hooked tip. The tool is held in the right hand at an angle of approximately forty five degrees to the fabric. The hook pointed away from the artisan, penetrates the cloth to pick up the thread fed by the left hand. The loop is than brought to the surface by withdrawing and quarter turning the ari away from the artisan. Each successive loop is created by the same means except after the first loop is made the ari passes through its centre to pick up the next one, thereby creating a chain. The aari greatly enhances the speed of the work, as it enables the artisan to pass the threads both above and below the fabric. The ari has its disadvantages though. One tug at a loose thread can spell disaster to the entire design as it can unravel in a matter of minutes. The needle and thread method is far more dependable, but is very time and labour consuming, and hence far more expensive.
The whole process is done very fast, while maintaining perfect tension of the thread. Several artisans may work on a single piece together. This relieves the tedium of a big piece of work, which may take a month to finish.

**Finishing:** After the embroidery, the thread is beaten down (flattened) using a wooden hammer from the top, with a hand held wooden dabber placed under the fabric. This settles the thread and gives the work a fuller and finished look. This process is only for zari work.

The smallest work takes a day to be completed and the most exclusive can several days. Each piece is charged per design and the material used. For bridal wear, the embroidery is usually very intricate and neatly done with the finest dabka, coweries and stones.

**Product:** Today these techniques are used to produce a wide range of kanchali, ghagra, choli blouses, odhana, sarees, salwar suits, wedding trousseau, bedcovers, cushion covers, purses and handbags, potli bags, wall hangings and mojaris.

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**Figure 4.19: Schematic Presentation of stitches used in Aari tari**
Plate 4.10: Tools and Material used in doing Aari Tari

- Ari needle
- Varieties of zari thread
- Sequins and Beads
- Stones
- Hammer and Dabber

Process of Aari Tari
### Table 4.15: An Overview of Metal Embroidery

<table>
<thead>
<tr>
<th>Details</th>
<th>Zardozi</th>
<th>Gota Work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-Kaam</th>
<th>Aari Tari</th>
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<tbody>
<tr>
<td><strong>Material</strong></td>
<td>Metal wires and kasab</td>
<td>Gota patti, laces and kasab</td>
<td>Danka plates and kasab</td>
<td>Gold and silver wire</td>
<td>Zari wires</td>
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<td><strong>Fabric</strong></td>
<td>Silk, velvet, satin, crepe, georgette, chiffon, cotton, viscose and polyester</td>
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<td>Cotton</td>
<td>georgette, velvet, satin, chiffon, crepe, viscose and polyester.</td>
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<td>Hemming, couching, chain stitch and running stitch</td>
<td>Couching, chain stitch, satin stitch, stem and running stitch</td>
<td>Couching, marori(loop couching), buttonhole, chain stitch, satin stitch, herringbone and outline stitches</td>
<td>Chain stitch</td>
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<tr>
<td><strong>Needle</strong></td>
<td>09 and ari</td>
<td>09</td>
<td>09 and ari</td>
<td>07&amp;08</td>
<td>Ari</td>
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<tr>
<td><strong>Frames</strong></td>
<td>Adda size ranges from 1 metre x 3 metre, 1 metre x 2 metre and 1 metre x 2 metre</td>
<td>Adda size ranges from 1 metre x 3 metre, 1 metre x 2 metre and 1 metre x 2 metre</td>
<td>Adda size ranges from 1 metre x 3 metre, 1 metre x 2 metre and 1 metre x 2 metre</td>
<td>hand frame</td>
<td>Adda size ranges from 1 metre x 3 metre, 1 metre x 2 metre and 1 metre x 2 metre and frame</td>
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<td>Design</td>
<td>Floral- <em>buttas and butties</em>. buds and sprays, geometrical, mango, paisley, peacock, paan and animal figure. <em>jaali</em> design in bel and patti</td>
<td>Floral design, geometrical, peacock and checkerboard, paisley and heart shape motifs</td>
<td>Floral motifs, gamla with floral spray, scalloped pattern, peacock, paisley, pan, sun and moon</td>
<td>Geometrical and floral motifs</td>
<td>Birds and animals, floral- butis butas and sprays, flowering stems, paisley and pan</td>
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<td>Cotton, silk, polyester, zari, thick cotton thread</td>
<td>Cotton and resham thread</td>
<td>Cotton thread</td>
<td>Cotton thread and black wool is used for outlining the designs.</td>
<td>Zari or metallic and silk thread</td>
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<td>Articles</td>
<td>Evening dresses, coats, sarees, salwar suits, kanchli, lehenga Chunni, blouses, Accessories- purses, handbags, belts, shoes; Furnishing accessories- cushion covers, wall hangings, table covers and boxes, and curtains</td>
<td><em>Odhni</em>, turbans, saree, salwar suits, dupattas wedding trousseau, blouse, long skirts, scarves, <em>poshaks</em>, <em>kurti</em>, kanchli, ghagra, door fringe, platter cover and <em>gota</em> laces are also used in garlands of groom and <em>poshaks</em> of deities</td>
<td><em>Poshaks</em>, <em>lehenga</em>, <em>chunni</em>, sarees and <em>odhani</em></td>
<td><em>Kanchli</em>, blouses, mirror case, pouches, <em>bujkis</em> (small purse) and wall hanging.</td>
<td><em>Kanchali</em>, ghagra, <em>choli</em> blouses, odhana, sarees, salwar suits, bridal wears bedcovers, cushion covers, purses and handbags, potli bags, wall hangings and mojaris</td>
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<td>Community</td>
<td>Hindu and Muslim</td>
<td>Hindu and Muslim</td>
<td>Bohra</td>
<td>Sindhi Muslim and Meghwal</td>
<td>Mochi</td>
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Results and Discussion

Phase II

4.4 Design Development of stylized motifs with the help of Computer Aided Designing

4.4.1 Selection of Traditional motifs:

The traditional motifs of Zardozi, Gota work, Danke-ka-kaam, Mukke-ka-kaam and Aari tari were collected from various sources such as books, museums and artisans. Twenty five motifs of each metal embroidery were evaluated by panel of judges consisting of five fashion designers, five textile designers and five academicians. The motifs were analysed by the judges for the selection of the top ten motifs each of Zardozi, Gota work, Danke-ka-kaam, Mukke-ka-kaam and Aari tari on five point rating scale on aesthetics of motifs. The weighted mean score and ranks obtained by traditional motifs are shown in the table below:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Zardozi</th>
<th>Gota work</th>
<th>Danke-ka-kaam</th>
<th>Mukke-ka-kaam</th>
<th>Aari Tari</th>
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<td>GM 9</td>
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Results and Discussion

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<td>DM 21</td>
<td>MM 21*</td>
<td>AM 21</td>
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*Motifs selected for development of new motifs

The table 4.16 reveals that among the twenty five Zardozi motifs collected, top ten Zardozi motifs were selected for adaptation by the panel of judges. The selected motifs were ZM 2, ZM 3, ZM 9, ZM 10, ZM 11, ZM13, ZM 14, ZM 16, ZM 23 and ZM 24.

For Gota work, the ten best selected motifs were GM 7, GM 10, GM 11, GM 13, GM 15, GM 17, GM 19, GM 23, GM 24 and GM 25.

For Danke-ka-kaam the result showed that top ten motifs were DM 2, DM 3, DM 8, DM 9, DM 10, DM 11, DM 15, DM 16, DM 23, and DM 24.

Among the twenty five motifs of Mukke-ka-kaam, the result revealed that motif MM 1, MM 2, MM 5, MM 6, MM 7, MM 8, MM 13, MM 15, MM 21 & MM 22 were selected for designing.

For Aari tari, the ten selected motifs were AM 1, AM 3, AM 6, AM 7, AM 14, AM 15, AM 17, AM 19, AM 22 and AM 25.

4.4.2 Designing of motifs:

After taking inspiration from the traditional motifs of Zardozi, Gota work, Danke-ka-kaam, Mukke-ka-kaam and Aari tari, new stylized motifs were prepared by the researcher. Ten selected motifs representing each kind of metal embroidery were used to develop two stylized motifs through CorelDraw 13. These designs were different from the existing traditional designs and included lighter to heavier work. The designs were developed through bezier and shape tool in CorelDraw 13. The adoption of CorelDraw 13 software proved beneficial to replicate and reproduce the motifs appropriately and simple designs were developed in stylized forms as well as develop new patterns by systematic arrangement of different motifs proportionately; inturn the entire design were stored. A total of 100 designs were developed through CorelDraw 13 software and were evaluated by the panel of judges consisting of five fashion designers, five textile designers and five academicians. The patterns were judged in terms of suitability of the designs for combination of metal embroidery on stoles. The stoles were developed using multiple combinations of metal embroidery.
Figure 4.20: Selected Zardozi Motifs with two variations of Motifs

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Results and Discussion
## Results and Discussion

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Figure 4.21: Selected Motifs of Gota Work With two variations of Motifs

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## Results and Discussion

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Results and Discussion

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## Results and Discussion

Figure 4.22: Selected motifs of Danke-ka-kaam with two variations of Motifs

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### Results and Discussion

#### Selected Motifs

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#### Variation of Motifs

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Figure 4.23: Selected motifs of Mukke-ka-kaam with two variations of Motifs

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## Results and Discussion

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Figure 4.24: Selected motifs of Aari Tari with two variations of Motifs

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### Results and Discussion

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The weighted mean score and rank obtained by evaluation is quoted in table given below:

**Table 4.17: Weighted Mean Score and Rank obtained by stylized motifs (n=15)**

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<td>4.20 (III)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>ZM23 D1</td>
<td>4.00 (VII)</td>
<td>GM 24 D1</td>
<td>3.93 (VI)</td>
<td>DM 23* D18</td>
<td>4.53 (I)</td>
<td>MM21 D1</td>
<td>4.60 (II)</td>
<td>AM 22 D1</td>
<td>4.13 (IV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>ZM23 D2</td>
<td>3.26 (XIII)</td>
<td>GM 24 D2</td>
<td>3.40 (XIV)</td>
<td>DM 23 D2</td>
<td>3.66 (XII)</td>
<td>MM21 D2</td>
<td>4.13 (V)</td>
<td>AM 22 D2</td>
<td>3.80 (VII)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>ZM24 D1</td>
<td>4.00 (VIII)</td>
<td>GM 25 D1</td>
<td>3.46 (X)</td>
<td>DM 24 D1</td>
<td>3.4 (XIV)</td>
<td>MM22 D1*</td>
<td>4.66 (I)</td>
<td>AM 25 D1</td>
<td>3.86 (VII)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>ZM24 D2</td>
<td>4.26 (IV)</td>
<td>GM 25 D2</td>
<td>3.73 (VIII)</td>
<td>DM 24 D2</td>
<td>3.46 (XIII)</td>
<td>MM22 D2</td>
<td>3.80 (VIII)</td>
<td>AM 25 D2</td>
<td>3.93 (VI)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Motifs selected for stylized of design through CAD
D1= Design 1, D2=Design 2*
Figure 4.25: Five Selected Motifs for Layout of Designs
Evaluation of 100 motifs and selection of five most stylized motifs were evaluated by panel of judges on five point rating scale. The results from table 4.17 revealed that Zardozi motif ZM 16 D1 got the highest WMS of 4.8, whereas for Gota work GM 15 D1 got the highest WMS of 4.73. For Danke-ka-kaam and Aari Tari, highest WMS was obtained by DM 23D1 and AM 1 D2 of 4.53 respectively. For Mukke-ka-kaam motif MM 22 D1 got the highest WMS of 4.66. The motifs developed were innovative and creative. As per the suggestions the fineness and intricacy of motifs were further improved by creating the motifs, curvilinear and pointed at ends to get better result. From the result it can be analysed that the stylized motifs were highly appreciated which shows that the there should be change in the form of design.

4.4.4 Evaluation of different layout and variation of designs:

The five selected motifs of Zardozi (ZM 16 D1), Danke-ka-kaam (DM 23 D1), Gota work (GM 15 D1), Mukke-ka-kaam (MM 22 D1) and Aari Tari (AM 1 D2) were used for creating different types of layout i.e. corner, centre, allover and border designs through Coreldraw 13 for placement on stoles. Four design layout of each kind of metal embroidery were developed. A total of twenty new designs were developed and evaluated by the panel of fifteen judges (five in each category of fashion designer, textile designer and academicians). The judges were asked to rank the designs on five point rating scale which was excellent, very good, good, fair and poor. On the basis of scores obtained, 10 highest scored designs were used for the product development through combination of two metal embroidery.

Table 4.18: Weighted Mean Score and Rank obtained for layout of designs (n=15)

<table>
<thead>
<tr>
<th>Motifs</th>
<th>Corner WMS &amp; Rank</th>
<th>Border WMS &amp; Rank</th>
<th>Center WMS &amp; Rank</th>
<th>Allover WMS &amp; Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZM16D1</td>
<td>Co 1 3.66 (XII)</td>
<td>Bo 1* 4.33 (VI)</td>
<td>Ce 1* 4.80 (II)</td>
<td>Al 1 4.20 (VIII)</td>
</tr>
<tr>
<td>GM15D1</td>
<td>Co2 4.26 (VII)</td>
<td>Bo 2* 4.86 (I)</td>
<td>Ce2 3.86 (XI)</td>
<td>Al 2 3.93 (XVII)</td>
</tr>
<tr>
<td>DM23D1</td>
<td>Co 3* 4.80 (II)</td>
<td>Bo 3* 4.66 (III)</td>
<td>Ce 3* 4.40 (V)</td>
<td>Al 3 4.13 (IX)</td>
</tr>
<tr>
<td>MM22D1</td>
<td>Co 4* 4.60 (IV)</td>
<td>Bo 4* 4.66 (III)</td>
<td>Ce 4 3.93 (X)</td>
<td>Al 4 4.20 (VIII)</td>
</tr>
<tr>
<td>AM1D2</td>
<td>Co 5 4.26 (VII)</td>
<td>Bo 5 4.20 (VIII)</td>
<td>Ce 5* 4.86 (I)</td>
<td>Al 5* 4.40 (V)</td>
</tr>
</tbody>
</table>

*Motifs selected for stylized design through CAD
Corner: Co, Border: Bo, Center: Ce, Allover: Al
The table 4.18 reveals the preferences of layouts of motifs. It is inferred that among all the layouts, top ten selected layouts were centre motifs of *Aari tari* (AM 1 D2 Ce5) and border motif of *Gota work* (GM 15 D1 Bo2) with WMS of 4.86, followed by score of 4.80 to the centre motif of *Zardozi* (ZM 16 D1 Ce1) and corner motif of *Danke-ka-kaam* (DM 23 D1 Co3) respectively. Border layout of *Danke-ka-kaam* (DM 23 D1 Bo3) and *Mukke-ka-kaam* (MM 22 D1 Bo4) got the WMS score of 4.66, corner motif of *Mukke-ka-kaam* (MM 22 D1 Co4) got WMS of 4.60, followed by the centre motif of *Danke-ka-kaam* (DM 23 D1 Ce3) and allover design of *Aari tari* (AM 1 D2 Al 5) with WMS of 4.40 respectively. Border design of *Zardozi* (ZM 16 D1 Bo1) got the WMS score of 4.33 WMS. The layout of designs were highly appreciated. The reasons for the acceptance of stylized motifs were compactness and uniformity of the designs because of elegance and uniqueness towards stylized layout of designs. Each design was transferred on stole. The development of stole as product with combination of metal embroidery was done to keep the existence of this unique art into the market and easily approachable to the masses and young generation. The fabric selection for stole was done by same panel of experts. The blue colour of the stole was selected according to the forcasting by WGSN fashion forecast 2012.

**Table 4.19: Selection of Fabric for Metal embroidery (n=15)**

<table>
<thead>
<tr>
<th>Criteria for Selection</th>
<th>Cotton</th>
<th>Silk</th>
<th>Satin</th>
<th>Georgette</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durability</td>
<td>45</td>
<td>67</td>
<td>50</td>
<td>58</td>
</tr>
<tr>
<td>Appropriateness for metal embroidery</td>
<td>48</td>
<td>68</td>
<td>54</td>
<td>55</td>
</tr>
<tr>
<td>overall appearance</td>
<td>40</td>
<td>64</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Total Score</td>
<td>138</td>
<td>199</td>
<td>149</td>
<td>163</td>
</tr>
</tbody>
</table>

From the above result it can be analysed that the silk fabric got the highest score of 199 in terms of durability, appropriateness and overall appearance followed by georgette (163), satin (149) and cotton (138).

Hence it can be concluded that silk was selected because of overall appearance, durability and its appropriateness for metal embroidery. The standard size of the stole taken was two meters.
Figure 4.26: Layout of Designs for Selected Zardozi Motifs

Centre
Zm16D1Col

Border
Zm16D1Bo1
Results and Discussion

Allover
Zm16D1All

Corner
Zm16D1Co1
Figure 4.27: Layout of Designs for Selected Gota work Motifs

Allover
GM15D1Al2

Border
GM15D1Bo2
Results and Discussion

Center
GM15D1Ce2

Corner
GM15D1Co2
Figure 4.28: Layout of Designs for Selected Danke-ka-kaam Motifs

Centre
DM23D1Ce3

Corner
DM23D1Co3
Border
DM23D1Bo3

Allover
DM23D1Al3
Figure 4.29: Layout of Designs for Selected Mukke-ka-kaam Motifs
Results and Discussion

Centre
MM22D1Ce4

Allover
MM22D1Al4
Figure 4.30: Layout of Designs for Selected Aari Tari Motifs

Centre
AM 1D 2Ce5

Corner Design
AM 1D2Co5
Results and Discussion

Border
AM 1D2Bo5

Allover
AM 1D2Al5
Results and Discussion

4.5 Product Development using combinations of metal embroideries and assessing consumers acceptability

4.5.1 Evaluation of designed stoles:

The selected layout of designs were traced on the silk fabric and embellished through combination of metal embroidery. The combination of metal embroidery given in the table were purposively selected and applied according to the suitability of design for the embroidery on stoles. A total of 10 stoles were developed. The embellishments were done by the artisans of Jaipur. As the original zari, danka, gota and kasab would made the cost of products expensive, thus to reduce the cost of the product imitation embellishment were used on the stoles.

Table 4.20: Combination of metal embroidery on selected layout of designs

<table>
<thead>
<tr>
<th>Embroidery</th>
<th>Code</th>
<th>Comb 1</th>
<th>Comb 2</th>
<th>Comb 3</th>
<th>Comb 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zardozi</td>
<td>D1</td>
<td>D1D2 ZD (S1) DM 23 D1 Bo3</td>
<td>D1D3 ZG(S2) ZM 16 D1 Ce1</td>
<td>D1D4 ZM(S3) MM 22 D1 Co4</td>
<td>D1D5 ZA(S4) AM 1 D2 Ce5</td>
</tr>
<tr>
<td>Gota work</td>
<td>D2</td>
<td>D2D3 GD(S5) DM 23 D1 Co3</td>
<td>D2D4 GM(S6) MM 22 D1 Bo4</td>
<td>D2D5 GA(S7) AM 1 D2 Al5</td>
<td>------</td>
</tr>
<tr>
<td>Danke ka Kaam</td>
<td>D3</td>
<td>D3D4 DM(S8) ZM 16 D1 Bo1</td>
<td>D3D5 DA(S9) DM 23 D1 Ce3</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Mukke ka Kaam</td>
<td>D4</td>
<td>D4D5 MA(S10) GM15 D1 Bo2</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Aari Tari</td>
<td>D5</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
</tbody>
</table>

Once the metal embroidery was completed on the stoles, they were evaluated again for its acceptability by a panel of judges, comprising of fifteen experts five in each category of marketing personnel, consumers and fashion designers on five point rating scale. The criteria for rating was placements of motifs, suitability of the motif to the end use of design, quality of workmanship, preference of stole for elegance,
combination of metal embroidery, overall appearance and cost of the product. The responses derived by respondents for each stole were coded and assessed.

The cost of the stole developed with embellishment through metal embroidery was calculated. The cost of production was estimated by considering several variable costs (cost of fabric, cost of embellishment, labour charges and overhead charges). Total costs of each stole are given in the following table:

<table>
<thead>
<tr>
<th>Criteria of Cost (₹)</th>
<th>S1 (ZD)</th>
<th>S2 (ZG)</th>
<th>S3 (ZM)</th>
<th>S4 (ZA)</th>
<th>S5 (GD)</th>
<th>S6 (GM)</th>
<th>S7 (GA)</th>
<th>S8 (DM)</th>
<th>S9 (DA)</th>
<th>S10 (MA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embellishment</td>
<td>100</td>
<td>150</td>
<td>100</td>
<td>80</td>
<td>125</td>
<td>150</td>
<td>150</td>
<td>140</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>Labour charges</td>
<td>700</td>
<td>750</td>
<td>600</td>
<td>550</td>
<td>700</td>
<td>800</td>
<td>750</td>
<td>720</td>
<td>650</td>
<td>670</td>
</tr>
<tr>
<td>Overhead charge</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Total Cost</td>
<td>1300</td>
<td>1400</td>
<td>1200</td>
<td>1130</td>
<td>1325</td>
<td>1450</td>
<td>1400</td>
<td>1360</td>
<td>1250</td>
<td>1290</td>
</tr>
</tbody>
</table>

S1-S10= Style Number of Stoles


The findings of table shows the cost of material used for stole. The cost of Stole S6 was maximum because of the combination of Mukke-ka-kaam and Gota work. The design and the labour charges increase the cost of the product. The stitches of Mukke-ka-kaam are very intricate and so it takes time to complete the article. The cost of Stole S4 was minimum because of the design and combination of Zardozi and Aari tari embroidery. The design affects the cost price and labour charges of the product.
Table 4.22: Acceptability Score obtained by Stoles (n=15)

<table>
<thead>
<tr>
<th>Criteria for Evaluation</th>
<th>S1 (ZD)</th>
<th>S2 (ZG)</th>
<th>S3 (ZM)</th>
<th>S4 (ZA)</th>
<th>S5 (GD)</th>
<th>S6 (GM)</th>
<th>S7 (GA)</th>
<th>S8 (DM)</th>
<th>S9 (DA)</th>
<th>S10 (MA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placements of motifs</td>
<td>58</td>
<td>67*</td>
<td>58</td>
<td>56</td>
<td>60</td>
<td>65</td>
<td>61</td>
<td>62</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>Suitability of the motif</td>
<td>61</td>
<td>67*</td>
<td>57</td>
<td>58</td>
<td>56</td>
<td>67*</td>
<td>60</td>
<td>60</td>
<td>56</td>
<td>63</td>
</tr>
<tr>
<td>Workmanship</td>
<td>58</td>
<td>70*</td>
<td>58</td>
<td>60</td>
<td>55</td>
<td>65</td>
<td>58</td>
<td>65</td>
<td>53</td>
<td>64</td>
</tr>
<tr>
<td>Elegance</td>
<td>56</td>
<td>62*</td>
<td>55</td>
<td>55</td>
<td>58</td>
<td>60</td>
<td>59</td>
<td>58</td>
<td>54</td>
<td>61</td>
</tr>
<tr>
<td>Acceptability of concept</td>
<td>59</td>
<td>66*</td>
<td>55</td>
<td>59</td>
<td>58</td>
<td>62</td>
<td>62</td>
<td>56</td>
<td>57</td>
<td>61</td>
</tr>
<tr>
<td>Combination of work</td>
<td>59</td>
<td>63</td>
<td>59</td>
<td>58</td>
<td>52</td>
<td>66*</td>
<td>58</td>
<td>58</td>
<td>55</td>
<td>63</td>
</tr>
<tr>
<td>Overall appearance</td>
<td>58</td>
<td>65*</td>
<td>58</td>
<td>54</td>
<td>53</td>
<td>62</td>
<td>60</td>
<td>61</td>
<td>57</td>
<td>62</td>
</tr>
<tr>
<td>Cost of the Product</td>
<td>55</td>
<td>67*</td>
<td>49</td>
<td>56</td>
<td>52</td>
<td>61</td>
<td>57</td>
<td>59</td>
<td>55</td>
<td>64</td>
</tr>
<tr>
<td>Total Score obtained</td>
<td>464</td>
<td>527</td>
<td>449</td>
<td>456</td>
<td>444</td>
<td>508</td>
<td>475</td>
<td>479</td>
<td>439</td>
<td>503</td>
</tr>
<tr>
<td>Acceptability Index</td>
<td>77.33%</td>
<td>87.83%</td>
<td>74.83%</td>
<td>76%</td>
<td>74%</td>
<td>84.66%</td>
<td>79.16%</td>
<td>79.83%</td>
<td>73.16%</td>
<td>83.83%</td>
</tr>
</tbody>
</table>

*Highest scores obtained by stoles on different parameters
S1-S10 = Style Number of Stoles


Rating Scale: Excellent = 5, Very good = 4, Good = 3, Fair = 2, Poor = 1.

From the above table it was evident that Stole S2 (Zardozi and Gota work) got highest score of 527 out of 600. In comparison to the other stoles the scores were high in quality of workmanship, acceptability of concept, overall appearance and cost of the product. Further it was found that Stole S6, S10, S8, S7, S1, S4, S3, S4 & S9 were next in ranking which was highly appreciated by judges.
Stole 2 got the highest score for placement of motifs. Stole S2 (Zardozi and Gota work) and S6 (Gota work and Mukke-ka-kaam) got the highest score for suitability of the designs for the end uses. Stole S6 got the highest score for combination of metal embroidery of Gota work and Mukke-ka-kaam, which was found to be very appealing to the panel.

All the respondent liked and appreciated the stoles. Most of the respondents reported that the cost of the product is reasonable and appropriate. Though there were very few who found the cost to be high. Majority of the respondent revealed that the concept of combination of metal embroidery was very unique and elegant and it provides immense potential which is still untapped. The greatest challenge is to make it suit contemporary market was by incorporating the combination of two metal embroidery such as Zardozi, Gota work, Danke-ka-kaam, Mukke-ka-kaam and Aari tari with innovative designs to give it attractive look and suitable for younger generation.

The contemporized motifs used for developing stoles with combination of two metal embroidery were highly appreciated by the panel of judges. The respondents highly appreciated the workmanship of the stoles and according to them the developed stoles would have good buyers in the market as the younger generation prefer unique and stylish thing to wear. The acceptability index throws a light on the fact that human beings always remain in search of something new to satisfy their thirst for their creative and innovative work.

In terms of product development, the report by Babel and kumawat(2011), can be analysed that the application of machine embroidery on khadi fabric for bed linens were highly appreciated by the respondents for exclusive and uniqueness as shown by their higher acceptability(70-90%). The cost of the developed bed linen was found very reasonable and had good market potentials. It was also revealed that minimum 40 percent profit can be gained by development of value added article.
Plate 4.11: Develop stole with combination of sZardozi and Danke-ka-kaam

Stole 1: D1D2, Zardozi and Danke-ka-kaam
Plate 4.12: Develop stole with combination of Zardozi and Gota work

Stole 2: D1D2, Zardozi and Gota work
Plate 4.13: Develop stole with combination of Zardozi and Mukke-ka-kaam

Stole 3: D1D4, Zardozi and Mukke-ka-kaam
Plate 4.14: Develop stole with combination of Zardozi and Aari Tari

Stole 4: D1D5, Zardozi and Aari Tari
Plate 4.15: Develop Stole with combination of Gota work and Danke-Ka-Kaam

Stole 5: D2D3, Gota Work and Danke-Ka-Kaam
Plate 4.16: Develop Stole with combination of Gota work and Mukke-Ka-Kaam

Stole 6: D2D4, Gota work and Mukke-ka-kaam
Plate 4.17: Develop Stole with combination of Gota work and Aari Tari

Stole 7: D3D5, Gota Work and Aari Tari
Plate 4.18: Develop Stole with combination of Danke-ka-kaam and Mukke-ka-kaam

Stole 8: D3D4, Danke-ka-kaam and Mukke-ka-kaam
Plate 4.19: Develop Stole with combination of Danke-ka-kaam and Aari Tari

Stole 9: D3D5, Danke-ka-kaam and Aari Tari
Plate 4.20: Develop Stole with combination of Mukke-ka-kaam and Aari Tari

Stole 10: D4D5, Mukke-ka-kaam and Aari Tari
Phase III

4.6 Training to Women Skill Development

A short term training of three months was given to 25 youth belonging to age group of 18-25 years at the slums of Vidhyadhar Nagar, Jaipur. The training was given from 1st May- 30th July 2013 for approximately two and half hour on every alternate day. The Socio-Economic characteristic of the trainees is depicted in table: 4.24

Table 4.23: Socio Economic characteristics of respondents (n=25)

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18-21 years</td>
<td>11</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>22-25 years</td>
<td>14</td>
<td>56%</td>
</tr>
<tr>
<td>Education</td>
<td>Illiterate</td>
<td>04</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>Middle School</td>
<td>13</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>High School</td>
<td>08</td>
<td>32%</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Married</td>
<td>16</td>
<td>64%</td>
</tr>
<tr>
<td></td>
<td>Unmarried</td>
<td>09</td>
<td>36%</td>
</tr>
<tr>
<td>Family Type</td>
<td>Nuclear</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Joint</td>
<td>15</td>
<td>60%</td>
</tr>
<tr>
<td>Family Income</td>
<td>₹2000 -3000</td>
<td>12</td>
<td>48%</td>
</tr>
<tr>
<td></td>
<td>₹3001-4000</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>₹4001-5000</td>
<td>03</td>
<td>12%</td>
</tr>
<tr>
<td>Employment Status</td>
<td>Housewife</td>
<td>13</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>Employed</td>
<td>09</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>Self Earning</td>
<td>02</td>
<td>08%</td>
</tr>
</tbody>
</table>

Age Group: From the above table it can be elucidated that 56% of the women belonged to the age group of 22-25 years whereas 44% belonged to age group of 18-21 years.

Education: Majority of the respondent (52%) had education till middle school, followed by 32% who had education till high school and rest 16% never attended any school. This shows that the education is not an important criteria for the respondents.
Marital Status: Sixty four percent of the respondents were married and 36% were unmarried. On further investigation it was found that they were married at an early age.

Type of Family: Table indicates that 60% of the respondents belonged to joint family and rest 40% to nuclear type.

Family Income: Majority of the respondent (48%) reported that their family income was between ₹2000-3000/-, followed by 40% of respondents who had an income between ₹3001-4000 and rest 12% earned between ₹4001-5000.

Employment Status: Fifty two percent of the respondents were housewife whereas 36% were employed elsewhere and rest 8% were earning through tailoring and tuitions.

4.6.1 Gain in Knowledge
To assess the impact of training in gain of knowledge, the respondents were categorized into three categories, low (0-10), medium (11-20), and high (21-30). The knowledge level of the trainees before and after the training is depicted in the Table no.

<table>
<thead>
<tr>
<th>Level of Knowledge</th>
<th>Pre –Training</th>
<th>Post –Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Low</td>
<td>19</td>
<td>76</td>
</tr>
<tr>
<td>Medium</td>
<td>06</td>
<td>34</td>
</tr>
<tr>
<td>High</td>
<td>-----</td>
<td>--</td>
</tr>
</tbody>
</table>

From the above data it can be revealed that majority (76%) of the trainees had low level of knowledge about the embroidery before the training and only 34% had middle level of knowledge about the embroidery. None of the trainees had high level of knowledge. Before training, very few of them had the knowledge about the stitches and fabric used in embroidery. They knew only about cotton fabric and certain basic stitches such as stem stitch, chain stitch and running stitch. Different metal embroideries such as Zardozi, Gota work, Danke-ka-kaam, Mukke-ka-kaam, and Aari Tari were little known to them.
After training 52% of respondents had acquired middle level of knowledge about the embroidery and 48% of the respondent gained high level of knowledge. The trainees showed significant improvement in gain in knowledge. They were able to identify fabric, usage of frames, different sizes of needle, types of stitches, techniques of doing it and products on which embroidery can be done. The results had shown that most of the respondents had gained knowledge and were found to have medium to high level of knowledge about the embroidery because of training. The gain might be attributed to the embroidery which most women like to take up in during their leisure time. The trainees were very happy that they have been given opportunity to learn new skills.

4.6.2 Analysis of mean, paired ‘t’ value and standard deviation

The mean score of the respondents gain in knowledge and calculated’ value is depicted in table.

| Table 4.25: Score of the respondents and calculated paired ‘t’ values |
|------------------------|------------------------|------------------------|------------------------|------------------------|
|                        | Pre – Training | Post – Training | Mean difference | ‘t’ value (calculated) | Standard Deviation |
| Gain in Knowledge       | 7.20          | 19.60          | 12.40          | 14.89**                | 4.163               |

** Significant at .01 level

The data presented in table reveals that there was a difference between mean score of pre and post test in the level of knowledge of the trainees who had undergone training on embroidery. The mean score before the training was 7.20 and after the training the score was 19.60. There was increase of 12.40 in mean knowledge score after the training. It is clearly indicated that calculated value of ‘t’ 14.89 for gain in knowledge was highly significant at .01 level of significance. This signifies that the trainees had acquired high level of knowledge about the technique of embroidery.

4.6.3 Gain in Skill performance

In terms of the skill performance, the trainees were categorized into three categories, highly skilled, semi-skilled and less-skilled which were represented in the following table below:
Results and Discussion

Table 4.26: Distribution of trainees according to gain in skill performance (n=25)

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Range</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly skilled</td>
<td>80-95</td>
<td>8</td>
<td>32%</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>66-79</td>
<td>13</td>
<td>52%</td>
</tr>
<tr>
<td>Less-skilled</td>
<td>50-65</td>
<td>4</td>
<td>16%</td>
</tr>
</tbody>
</table>

Results of the table reflect that the training has effectively helped in the capacity building and skill development. Further it can be seen that 32% of the trainees were categorized into highly skilled in developing the articles, whereas 52% of the trainees were categorized into semi skilled and rest 16% were less skilled in terms of neatness, quality of workmanship and overall appearance. From the result it can be elucidated that after the training programme, the trainees could effectively prepare embroidered products and almost all showed improvement in skill and were capable of doing good quality work. The training programme had considerably enhanced the skills of trainees about application of embroidery techniques on different products.

Developing a range of samples; correcting and modifying errors in sizing, design and finish; suggesting variations, sizes, colours and alternatives for all samples developed. Training improved their existing knowledge, skill and enhanced capabilities to improve competency to meet the challenges of marketing.

Hence it can be concluded that the technical training improved their knowledge, skill and enhanced capabilities. It ultimately leads to generate income and change in their living pattern.

Deo & Sarkar (2012) reported in their study that ten days training programme on innovative embroidery was imparted to 25 trainees. Before the training 60% of the participants had low level of knowledge about the traditional embroidery and 8% had high level of knowledge. After the training 36% had acquired high level of knowledge about value addition techniques of traditional embroidery and basic stitches. Mean score of trainees to gain of knowledge was 5.76 but after the training there was gain of 6.36 percent of knowledge. The mean score of the trainees for skill development in embroidery before the training was 6.16 and after the training was 16.24, the findings clearly indicated that the training programme had considerably enhanced the skill of participants about different aspects of innovative embroidery techniques.
Plate 4.21: Training imparted to the women for Skill Development

- Tracing the design
- Stitches taught in embroidery
- Learning the embroidery
- Developing Articles
Plate 4.22: Developed Article by the Respondents

Article -1  Article -2  Article -3

Article -4  Article -5  Article -6

Article -7  Article -8  Article -9
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Article -10

Article -11

Article -12

Article -13

Article -14

Article -15

Article -16

Article -17

Article -18
Results and Discussion