

**DEVELOPMENT OF UTILITY ARTICLES THROUGH  
SIMULATION OF GOLD AND SILVER HAND  
EMBROIDERY**

**Thesis**

**Submitted to the Punjab Agricultural University  
in partial fulfillment of the requirements  
for the degree of**

**MASTER OF SCIENCE  
in  
FASHION DESIGNING  
(Minor Subject: Apparel and Textile Science)**

**By**

**Rochana Singla  
(L-2019-CS-367-M)**

**Department of Apparel and Textile Science  
College of Community Science  
© PUNJAB AGRICULTURAL UNIVERSITY  
LUDHIANA - 141 004**

**2022**

## **CERTIFICATE I**

This is to certify that the thesis entitled, “**Development of Utility Articles Through Simulation of Gold And Silver Hand Embroidery**” submitted for the degree of **Master of Science** in the subject of **Fashion Designing** (Minor subject: **Apparel and Textile Science**) of the Punjab Agricultural University, Ludhiana, is a bonafide research work carried out by **Rochana Singla (L-2019-CS-367-M)** under my supervision and that no part of this thesis has been submitted for any other degree.

The assistance and help received during the course of investigation has been fully acknowledged.

---

**Dr. (Mrs.) Sumeet Grewal**

**Major Advisor**

Scientist

Department of Apparel and Textile Science  
College of Community Science  
Punjab Agricultural University,  
Ludhiana-141001, Punjab

## CERTIFICATE II

This is to certify that the thesis report entitled, “**Development of Utility Articles Through Simulation of Gold And Silver Hand Embroidery**” submitted by **Rochana Singla (L-2019-CS-367-M)** to the Punjab Agricultural University, Ludhiana, in partial fulfillment of the requirements for the degree of **M.Sc.** in the subject of **Fashion Designing** (Minor subject: **Apparel and Textile Science**) has been approved by the Student’s Advisory Committee along with the External Examiner after an oral examination on the same.

---

**Dr. Sumeet Grewal**  
Major Advisor

---

(Dr Neelam Rose)  
**External Examiner**  
Professor and Head  
Dept of Textiles & Apparel Designing  
College of Home Science, CCS Haryana  
Agricultural University, Hisar

---

**(Dr. Sandeep Bains)**  
Head, Dept of Apparel & Textile Science

---

**Dr. Sandeep Bains**  
Dean, Postgraduate Studies

## **ACKNOWLEDGEMENT**

*First and foremost, I would like to express my deep sense of gratitude to the Almighty who has enabled me with great tolerance, strength and endurance in order to achieve this feat.*

*It is my pleasure to express my sincere gratitude and indebtedness to my Major Advisor, **Dr. Sumeet Grewal**, Scientist, Department of Apparel and Textile Science, Punjab Agricultural University for her keen interest, full encouragement, valuable guidance, constructive criticism, indispensable motivation, patience and constant involvement throughout my course and research work. Greatest thanks to her for her continuous and tremendous support which made this research work successful.*

*I am grateful to the other members of my advisory committee, **Dr. Surabhi Mahajan**, Assistant Professor, Department of Apparel and Textile Science, **Dr. Prerna Kapila**, Assistant Professor, Department of Apparel and Textile Science, **Dr. Harminder K. Saini**, Professor, Department of Apparel and Textile Science for their valuable suggestions, encouragement and guidance to make this research work successful.*

*I express my heartfelt thanks to **Dr. Sandeep Bains**, Head, Department of Apparel and Textile Science, Punjab Agricultural University for providing imperative facilities during the process of my research work.*

*Words could hardly express my deep sense of gratitude to my parents **Mr. Sanjeev Kumar Singla** and **Mrs. Anjali Singla** for the financial support, love, enduring patience, encouragement and having faith in me and my decisions during the course of my work. It gives me profound pleasure to acknowledge and honour their moral support and help which enabled me to accomplish my research work. I am also grateful to my brother, **Mr. Varun Singla** for his enormous support.*

*I take the privilege to thank my friends for their immense help. I also acknowledged the support and help received from the teaching and non-teaching staff from the Department of Apparel and Textile Science in execution of this study.*

***Mr. Deepak Kumar** and **Mr. Beer Bahadur** (Ekta Computer Centre, Opp. P.A.U. Gate No.3, Ludhiana) deserve special thanks for bringing out this manuscript in its presentable form.*

*Once again, I would like to remember and bestow my earnest gratitude to all those who names were not taken, yet not forgotten.*

**Place: Ludhiana**

**Date:**

**(Rochana Singla)**

Title of the thesis : Development of utility articles through simulation of gold and silver hand embroidery  
Name of the student : Rochana Singla  
and Admission no. (L-2019-CS-367-M)  
Major subject : Fashion Designing  
Minor subject : Apparels and Textile Science  
Name and designation of : Dr Sumeet Grewal  
Major Advisor Scientist  
Degree to be awarded : M.Sc.  
Year of award of degree : 2022  
Total pages in thesis : 60 + Appendices (v) + VITA  
Name of the university : Punjab Agricultural University, Ludhiana-141 004,  
Punjab, India

### **ABSTRACT**

The investigation entitled “Development of utility articles through simulation of gold and silver hand embroidery” was carried out in Ludhiana city. For simulation ten motifs of gold and silver hand embroidery were selected from documented twenty five motifs and five utility articles were selected for development based upon the preferences of a panel of judges. An interview schedule was prepared for the purpose of collecting data regarding awareness and preferences for developing utility articles using gold and silver machine embroidery from 96 female respondents between the age group of 20-60 years selected randomly from four localities of Ludhiana city. The results of the study revealed that majority of the respondents were post-graduation, home makers and belonged to the nuclear families and had an income range between Rs 50,001–1,00,000. Majority of the respondents were aware of gold and silver hand embroidery and possessed articles made from them. Based upon the preferences of the respondents for developing the utility articles, four designs of each utility article were created in COREL DRAW X7 and one best design in each category was selected by a panel of judges for product development. To study the cost effectiveness, the cost price was computed and the selling price were calculated by adding thirty percent profit. A sub-sample of thirty two respondents were randomly selected to study the consumer acceptance and cost effectiveness of the developed articles. The results showed that majority of the respondents liked the utility articles for their suitability, design, color combination, embellishments and overall impact and gave ranks to the articles accordingly. The table mat was ranked first, followed by wall hanging at second rank and third rank was given to cushion cover on the basis of the overall impact. Majority of the respondents found the quoted price appropriate for cushion cover, hand bag and mobile holder whereas the price of wall hanging and table mat were considered high. The average selling price calculated after considering the price quoted by the respondents showed that the profit margin has to be decreased by 4-12 percent in some cases. But when these articles will be produced at commercial level, the cost of production will reduce and the profit margins will increase. So, the articles were considered to be commercially viable and acceptable to the consumers.

**Keywords:** Consumer acceptance, development, gold and silver embroidery, simulation, utility articles

---

**Signature of Major Advisor**

---

**Signature of the student**

ਖੋਜ ਗ੍ਰੰਥ ਦਾ ਸਿਰਲੇਖ	: ਸੋਨੇ ਅਤੇ ਚਾਂਦੀ ਦੀ ਹੱਥੀਂ ਕੱਢਾਈ ਦੇਸਿ ਮੂਲੇਸ਼ਨ ਦੁਆਰਾ ਉਪਯੋਗੀ ਲੇਖਾਂ ਦਾ ਵਿਕਾਸ
ਵਿਦਿਆਰਥੀ ਦਾ ਨਾਂ ਅਤੇ ਦਾਖਲਾ ਨੰਬਰ	: ਰੋਚਨਾ ਸਿੰਗਲਾ (ਐੱਲ-2019-ਸੀ ਐੱਸ-367-ਐੱਮ)
ਪ੍ਰਮੁੱਖ ਵਿਸ਼ਾ	: ਫੈਸ਼ਨ ਡਿਜ਼ਾਈਨਿੰਗ
ਸਹਿਯੋਗੀ ਵਿਸ਼ਾ	: ਅਪੈਰਲ ਐਂਡ ਟੈਕਸਟਾਇਲ ਸਾਇੰਸ
ਡਿਗਰੀ	: ਐੱਮ.ਐੱਸਸੀ
ਮੁੱਖ ਸਲਾਹਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਅਹੁੱਦਾ	: ਡਾ. (ਮਿਸਿਜ਼) ਸੁਮੀਤ ਗਰੇਵਾਲ ਵਿਗਿਆਨੀ
ਡਿਗਰੀ ਮਿਲਣ ਦਾ ਸਾਲ	: 2022
ਖੋਜ ਪੱਤਰ ਵਿੱਚ ਕੁੱਲ ਪੰਨੇ	: 60+ ਅੰਤਿਕਾ (v) + ਵੀਟਾ
ਯੂਨੀਵਰਸਿਟੀ ਦਾ ਨਾਮ	: ਪੰਜਾਬ ਖੇਤੀਬਾੜੀ ਯੂਨੀਵਰਸਿਟੀ, ਲੁਧਿਆਣਾ-141 004 ਪੰਜਾਬ, ਭਾਰਤ ।

### ਸ਼ਾਰ ਅੰਸ਼

ਲੁਧਿਆਣਾ ਸ਼ਹਿਰ ਵਿੱਚ "ਸੋਨੇ ਅਤੇ ਚਾਂਦੀ ਦੇ ਹੱਥੀਂ ਕੱਢਾਈ ਦੇ ਸਿਮੂਲੇਸ਼ਨ ਦੁਆਰਾ ਉਪਯੋਗੀ ਵਸਤੂਆਂ ਦਾ ਵਿਕਾਸ" ਸਿਰਲੇਖ ਦੀ ਜਾਂਚ ਕੀਤੀ ਗਈ ਸੀ। ਲੁਧਿਆਣਾ ਸ਼ਹਿਰ ਦੇ ਇਲਾਕਿਆਂ ਵਿੱਚੋਂ ਬੇਤਰਤੀਬ ਢੰਗ ਨਾਲ ਚੁਣੀਆਂ ਗਈਆਂ 20-60 ਸਾਲ ਦੀ ਉਮਰ ਦੇ ਵਿਚਕਾਰ 96 ਔਰਤਾਂ ਦੇ ਉੱਤਰਦਾਤਾਵਾਂ ਤੋਂ ਡਾਟਾ ਇਕੱਠਾ ਕਰਨ ਦੇ ਉਦੇਸ਼ ਲਈ ਇੱਕ ਇੰਟਰਵਿਊ ਦਾ ਸਮਾਂ-ਸਾਰਣੀ ਤਿਆਰ ਕੀਤੀ ਗਈ ਸੀ। ਅਧਿਐਨ ਦੇ ਨਤੀਜਿਆਂ ਤੋਂ ਪਤਾ ਲੱਗਾ ਹੈ ਕਿ ਜ਼ਿਆਦਾਤਰ ਉੱਤਰਦਾਤਾ ਪੇਸਟ-ਗ੍ਰੈਜੂਏਸ਼ਨ, ਹੋਮ ਮੇਕਰ ਸਨ ਅਤੇ ਪਰਮਾਣੂ ਪਰਿਵਾਰਾਂ ਨਾਲ ਸਬੰਧਤ ਸਨ ਅਤੇ ਦੀ ਆਮਦਨ 50,000 - 1,00,000 ਦੇ ਵਿਚਕਾਰ ਸੀ। ਜ਼ਿਆਦਾਤਰ ਉੱਤਰਦਾਤਾ ਸੋਨੇ ਅਤੇ ਚਾਂਦੀ ਦੀ ਕੱਢਾਈ ਤੋਂ ਜਾਣੂ ਸਨ। ਸਜਾਵਟੀ ਟੈਕਸਟਾਈਲ ਉਤਪਾਦਾਂ ਵਿੱਚੋਂ, ਉੱਤਰਦਾਤਾਵਾਂ ਨੇ ਕੁਸ਼ਨ ਕਵਰ, ਵਾਲ ਹੈਂਗਿੰਗ, ਹੈਂਡ ਬੈਗ, ਮੋਬਾਈਲ ਹੋਲਡਰ, ਟੇਬਲ ਮੈਟ ਨੂੰ ਤਰਜੀਹ ਦਿੱਤੀ। ਕੱਢਾਈ ਲਈ ਕਪਾਹ ਨੂੰ ਸਭ ਤੋਂ ਵੱਧ ਤਰਜੀਹ ਦਿੱਤੀ ਜਾਂਦੀ ਸੀ। ਹੈਂਡ ਬੈਗ, ਟੇਬਲ ਮੈਟ, ਵਾਲ ਹੈਂਗਿੰਗ, ਟੇਬਲ ਮੈਟ ਨੂੰ ਜ਼ਿਆਦਾਤਰ ਉੱਤਰਦਾਤਾਵਾਂ ਦੁਆਰਾ ਉਹਨਾਂ ਦੇ ਡਿਜ਼ਾਈਨ, ਰੰਗਾਂ ਦੇ ਸੁਮੇਲ, ਸਜਾਵਟ ਅਤੇ ਸਮੁੱਚੇ ਪ੍ਰਭਾਵ ਲਈ ਪਸੰਦ ਕੀਤਾ ਗਿਆ ਸੀ। ਜ਼ਿਆਦਾਤਰ ਉੱਤਰਦਾਤਾਵਾਂ ਨੇ ਸੋਨੇ ਅਤੇ ਚਾਂਦੀ ਦੀ ਹੱਥੀਂ ਕੱਢਾਈ ਤਕਨੀਕ ਦੀ ਵਰਤੋਂ ਕਰਕੇ ਉਤਪਾਦ ਬਣਾਉਣ ਦਾ ਵਿਚਾਰ ਨਵੀਨਤਾਕਾਰੀ ਅਤੇ ਵਿਲੱਖਣ ਪਾਇਆ। ਜ਼ਿਆਦਾਤਰ ਉੱਤਰਦਾਤਾਵਾਂ ਨੇ ਹਵਾਲਾ ਦਿੱਤੀ ਕੀਮਤ ਨੂੰ ਉਚਿਤ ਪਾਇਆ ਅਤੇ ਲਗਭਗ ਸਾਰੇ ਉਤਪਾਦ ਲਗਭਗ 30 ਪ੍ਰਤੀਸ਼ਤ ਲਾਭ ਪੱਧਰ 'ਤੇ ਵੇਚੇ ਜਾ ਸਕਦੇ ਹਨ। ਇਸ ਲਈ ਉਨ੍ਹਾਂ ਨੂੰ ਵਪਾਰਕ ਤੌਰ 'ਤੇ ਵਿਵਹਾਰਕ ਮੰਨਿਆ ਜਾਂਦਾ ਹੈ।

**ਮੁੱਖ ਸ਼ਬਦ:** ਉਪਭੋਗਤਾ ਸਵੀਕ੍ਰਿਤਕ ਵਿਕਾਸ, ਸੋਨੇ ਅਤੇ ਚਾਂਦੀ ਦੀ ਕੱਢਾਈ, ਸਿਮੂਲੇਸ਼ਨ, ਉਪਯੋਗਤਾ ਲੇਖ

## CONTENTS

CHAPTER	TOPIC	PAGE NO.
I	INTRODUCTION	1-5
II	REVIEW OF LITERATURE	6-14
III	MATERIAL AND METHODS	15-18
IV	RESULTS AND DISCUSSION	19-51
V	SUMMARY	52-57
	REFERENCES	58-60
	APPENDICES	i-v
	VITA	

## LIST OF TABLE

TABLE NO.	TITLE	PAGE NO.
1	Selection of motifs by panel of judges	24
2	Selection of utility articles by panel of judges	25
3	Distribution of respondents according to their socio-personal profile	26
4	Mode of procurement of embroidered articles by the respondents	28
5	Source of information for latest trends in market regarding gold and silver embroidery articles	29
6	Preferences of the respondents for suitable fabric for utility articles	30
7	Preferences of the respondents for colour of the base fabric	31
8	Preferences of the respondents for appropriate size of motif in utility articles.	33
9	Preference of respondents for the type of embellishments	34
10	Selection of designs by the pannel of judges for development of utility articles	40
11	Preferences of the respondents regarding suitability of developed articles	47
12	Preferences of the respondents regarding design of developed articles	47
13	Preferences of the respondents regarding color combinations used in developed articles	48
14	Preferences of the respondents regarding use of embellishments	48
15	Preferences of the respondents regarding overall impact of developed articles	48
16	Cost assessment of developed utility articles	49
17	Distribution of the respondents according to their opinion for suitability of quoted price	50
18	Assessment of probable profit of the prepared products	50

## LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO.
4.1	Documented and selected motifs of gold and silver embroidery	20
4.2	Documented and selected motifs of gold and silver embroidery	21
4.3	Documented and selected motifs of gold and silver embroidery	22
4.4	Documented and selected motifs of gold and silver embroidery	23
4.5	Possession of gold and silver embroidered article by the respondents	24
4.6	Awareness of respondents regarding existing designs of embroidered articles available in market	28
4.7	Willingness to buy new designs of gold and silver embroidered articles	29
4.8	Designs of wall hanging	36
4.9	Designs of hand bag	37
4.10	Designs of mobile holder	38
4.11	Designs of cushion cover	39
4.12	Designs of table mat	41
4.13	Cushion cover	42
4.14	Table mat	43
4.15	Wall hanging	44
4.16	Hand bag	45
4.17	Mobile holder	46

## CHAPTER-I

### INTRODUCTION

Art is the result of something beautiful, unique and creative, the inspiration of which is taken from various sources. It can be a painted or an embroidered article. There is a need to acquire certain skills to generate a piece of art. Since ages man has been interested in decorating fabrics using different techniques like printing, dyeing, painting, embroidery etc. The origin of embroidery is very old and it is being performed since 30,000 BC. In the 11th century, pearls were fixed on various fabrics of formal wear especially on religious clothes. Later on during 13th and 14th century embroidery work became very popular. It was done on almost all types of clothes. The art of the machine embroidery originated from hand embroidery technique. Earlier hand embroidery was done only on the border of garments. Sometimes it was done on the edges of neckline, sleeves and bottom of dresses. Embroidery work was initially done by hands which is basically done for apparel sewing or attachments of embellishments on the fabrics. Embroidery and needlework arts have originated from the middle east. Ancient humans discovered that by taking small stitches with needles, pieces of animals could be joined together. Afterwards they started using embellishments also on these hides of animals. Archaeologists found various sculptures, wall pieces of monuments and pots on which carvings of ancient civilizations revealed that people of these periods had worn embroidered clothes (Bhatnagar 2003).

Embroidery originated for the purpose of reconstruction of garments in terms of patching, mending, tailoring and reinforcing cloth by hand. It originated from the 5<sup>th</sup> -3<sup>rd</sup> century BC, some examples of such work are found in China. In 300-700 AD, the edges of bands were finished with stitches like back stitch, running stitch, whipped stitch, stem and buttonhole stitch. Slowly and gradually the purpose of embroidery changed from reinforcement to decorative purpose. Later clothing was seen as a sign of wealth and status in society. Embroidery was a sign of high social status in Muslim societies and became widely popular. In some of the cities like Damascus, Cairo and Istanbul, the embroidery was visible on various items like handkerchiefs, uniforms, flags, calligraphy, shoes, robes, tunics, horse trappings, slippers, sheaths, pouches, covers and even on leather belts. These embroidered items were embroidered by craftsmen with gold and silver thread.

Embroidery is an art of decorating a fabric's surface by making stitches in a pattern with the help of needle and thread which helps to enhance its beauty. Hand embroidery in India is an age old cultural heritage. Each part of India has contributed

to the styles of embroidery, characteristic of its own tradition and culture. It is said that embroideries are very commonly practiced all over India from ancient times. The references of embroidery made in Vedas and epics prove its antiquity. Mohenjodaro excavation figures are seen with embroidered drapery. Buddhist stupas and sculptures have figures with embroidered wrappings. Kushan sculptures have figures with embroidered wrappings. In Ajanta frescoes, embroidery can be seen in the garments of the figures depicted (Singla, 1998). Embroidery is like a magic wand that helps to transform nothing into something; fills the blankness with substances, emptiness with meaningfulness. In olden days, it was a leisure time activity performed by the women but these days hand embroidery work is performed by the artisans as people are short of time due to technological advancements and more number of women are working outside (Gangwar 2015). For decoration of the surface of fabric number of methods are applicable which includes textured weaving which was also called as self-embellished fabric, hand paintings, fabric manipulation techniques like smocking, tucks, shirring etc, designs and other embroidery were also done for adorning.

Embroidery work is performed on various materials like cotton, linen, wool and silk. Sometimes it is done on the canvas and leather also. Throughout the world, similar type of threads are used in embroidery such as silk, cotton, metallic or woolen. Similarly embroidery stitches are also same in all the countries such as satin stitch, chain, stem, french knot, feather and cross stitch. All other stitches are variation of basic embroidery stitches. Inspiration for doing the embroideries is most of the times taken from surroundings of artist`s daily life or pictures from ancient literature. In India various states have their own styles of embroidery such as in Punjab, darning stitch is used in *phulkari*, small running stitch is used in *kantha* of Bengal, herring bone is used in *chikankari* of Uttar Pradesh, cross stitch is used in *dasuti* in Haryana and mirror work is famous embroidery of Gujarat (Chattopadhyay 1985).

Since ancient times in many countries the embroidered clothing were considered as symbol of wealth especially if these clothes were used at religious places like for covering holy books and sculptures of gods. In European countries, the traditional techniques of embroidery are taught to the new generation by organizing workshops. Thus they are taking care of art and heritage. Many efforts are being done for revival of ancient art and craft since 19th century by China, Japan, Switzerland, Mexico and Vietnam to revive their lost culture and traditional crafts. Traditional folk techniques were passed from generation to generation in cultures as diverse as northern Vietnam, Mexico and Eastern Europe. Professional workshops are also organised in the medieval England for revival of ancient arts. The manufacturing of machine-made embroideries in St. Gallen in eastern Switzerland flourished in the

later half of the 19th century. Various fabrics were used as base materials in traditional embroideries at different places. Wool, linen and silk have been used for thousands of years for both fabrics and yarns. However today, embroidery thread is manufactured in cotton, rayon and novelty yarns as well as in traditional wool, linen and silk. It is ornamental needlework applied to various fabrics and worked with many different types of threads such as wool, linen and silk, gold and silver etc. Decorative objects such as shell, feathers, beads and jewels are often sewn to the embroidered piece and it is considered as a laborious threadwork (Dhami 2017).

In the beginning, the embroidery was made with pure silver wires and real gold leaves. Nowadays, craftsmen use copper wire polished with gold or silver, along with silk thread. The zari threads are formed by heavy and elaborate metal fibres in different colours of gold, silver, bronze, gunmetal, etc. Also, this embroidery is done on different types of fabrics like silk, satin, velvet etc. It uses materials like beads, sequins, stones etc and has a wide range of implementations that include clothes and household textiles. *Zardozi* is the most generic term used for this kind of embroidery. But it is known by other names as well: *zardozi* in Bhopal, Delhi, Hyderabad and Uttar Pradesh; “*kamdani*” or “*badla*” in Lucknow, “*danka*” and “*gotta-patti*” in Rajasthan, “*tilla*” work in Jammu & Kashmir and parts of western India and so on. *Zardozi* designs mostly consists of natural elements like flowers, leaves, fruits, birds and animals. Most commonly used motif on sari *pallus* is the *keri* or mango. Persian inspired abstract, geometrical patterns are also common.

Gold and silver embroidery is an intricate art of woven threads. The gold and silver embroidery is also known as *Zari* work. The threads used in the embroidery are of two types: dull threads are “*kora*” and shiner are called as “*chikna*”. The designs made with these threads are enhancing that gives the rich and royal look to overall fabric. Modernized *zari* is now changed into metallic *zari* which is made by wrapping the metallic yarn on cotton threads. *Zari* is golden in color and *zardozi* is the glittering and heavily encrusted gold thread work. *Zari* metallic threads are now available in different color besides gold and silver which also gives the same royal look. This metal coated threads is economical than silver threads and also good in giving fine finish and they are also color fast. *Zari* embroidery has special place in Lucknow, Bhopal, Hyderabad, Delhi, Agra, Kashmir, Mumbai, Ajmer and Chennai.

Gold has been used as embellishment and adornment of the human body since ancient times. This adornment was not only limited to the body in form of gold jewellery but it was also used to decorate the attire worn by the person. Gold was considered as a symbol of royalty and wealth and was used in various ways to decorate the fabric. Gold and silver pigments were painted and printed onto the fabric

to give it a shimmering look. Gold and silver threads were used to weave luxurious patterns onto the fabric and the glittering patterns of gold embroidery combined with silk threads and semi-precious stones gave the illusion of gold embroidery on the body of the wearer.

In the modern times, there are many changes in all types of the embroideries regarding the use of quality and colours of threads quality and type of work. Earlier, most of the traditional embroideries were performed by women with their hand but today the work of hand embroidery has been replaced by the machine embroidery work and this work is being performed by men. With the arrival of more sophisticated technology, new embroidery machines are available in the market which have capability of automatic thread tensioning, high speeds and drives that help to transfer embroidery machines from an automatic controlled machine to a computer controlled machine. In machine embroidery the advantage can be seen in terms of saving time whereby patterns are created with the help of machine (Singla 1998).

A wide range of embroidery machines are available in the market today. Some of embroidery machines include computerized sewing, quilting and embroidery with fancy stitches. Commercial embroidery machines offer multiple needles which helps needles to design with different colours at a time. Commercial software offers complete control while doing the embroidery work. Machine specific softwares are available in which designs can be scanned by using any scanner type that work with the computer system. These days machine embroidery work has achieved good commercial status and the machine embroidered product range includes *suits, dupattas, lehngas, kurtis, sherwani, jackets, stoles, scarves* and many household articles. Machine embroidery is one of outlet for self-employment which requires skills to operate embroidery machine and requires minimum infrastructure and moderate financial investments. Recently machine embroidery work is being performed similar to hand embroidery work but with less time and expenditure. Earlier only few embroidery stitches could be done on the machine embroidery but today almost all types of stitches can be done in machine embroidery with all types of threads even the gold and silver embroidery work, *gotta-patti* work and attachment of beads and sequins is being done with the machines.

Initially one can work from home also and earn good amount of money with less initial investments. Professional embroiderers are working from their shops and have become very conscious of time involved in the embroidery, labour and profits in this work. They are working independently or with the showrooms, wholesalers, boutiques etc. and earning livelihood from the skills they have acquired in machine embroidery work. In Ludhiana, a large number of families are engaged in

embroideries for generations. As Ludhiana is hub of fashion apparels and designer studios, a huge amount of machine embroidery work is being performed in this city.

The gold and silver hand embroidery in India is an age old cultural heritage popularly known as *zardozi* or *zari* work. It is done by skilled craftsmen trained through generations but in modern times, the time and labour involved in addition to low wages has led to decline in this craft and the artisans are shifting to other professions or machine embroidery. The machine embroidery work is being performed similar to hand embroidery work but with less time and expenditure. Moreover, machine embroidery articles can be very economical and can be purchased by people of all classes. Therefore, it is gaining popularity and replacing the hand work day by day and also may be taken up as a source of income generation. Hence, the present study was taken with the following objectives:

### **Objectives**

1. To study the consumers` preferences for gold and silver machine embroidery articles.
2. To design and prepare the articles according to preferences of the consumers.
3. To study the cost effectiveness of prepared utility articles.

### **Limitations**

- The study was limited to development of five utility articles only.
- The study was less extensive due to time constraint.
- Due to Covid-19 pandemic lockdown during the period of research, the personal interaction with the respondents was not possible which might have affected their responses.

## **CHAPTER-II**

### **REVIEW OF LITERATURE**

This chapter reviews the literatures related to the present work. Previous studies related to the present research have been extensively studied and presented in this section systematically under the following heads.

4.1 Studies related to hand embroideries

4.2 Studies related to machine embroideries

#### **4.1 Studies related to hand embroideries**

Ronsdorf (1961) traced the historical development of gold and silver decorated fabrics from medieval to modern times. Also, found that the original meaning of "Brocade" Italian "Broccato", decorated with wefts of gold and silver: beaten and drawn gold; skin gold; gilt leather thread; earliest records of decorated fabrics; medieval gold fabrics; silver and gold on velvet; gold and silver fabrics in Italy, and France; gold and silver in embroidery and concluded that the gold and silver were used since ancient years in the form of wires etc.

Mittal and Paul (1999) found that 2000 units are located in and around the Lucknow that are indulged in zari work and studied the prospects of this embroidery, raw materials, designs and sources for it, marketing and the problems faced by them. It was researched that 60 percent of respondents were illiterate and were in the age group of 30-50 years. It was also found that majority of workers had taken their jobs on fulltime basis and they worked for 8 hours per day. Embroiderers more than 70 percent were engaged in this art from their fathers as their family business and the rest of the respondents acquired it after gaining some experience.

Sachdeva (1999) opined that various methods such as weaving, dyeing, printing, and embroideries had been used to embellish the apparel from the ancient times. It had been always desired by humans to decorate the textiles with various methods. The reference of embroideries has been found in Bible also. Various motifs of embroidery have also been describe in Bible such as fruits with seeds were considered very auspicious. Similarly different type of threads were used for embroidery such as cotton and linen along with silver, gold and copper. Investigator further found that pomegranate motif was also used by the Egyptians, Persian and Romans in their embroideries.

Bhatnagar (2003) revealed that traditional embroideries were used for commercial products and bulk production which provided employment to embroiderers. For commercializing the products various changes in the style of

embroidery were required to meet the demand of the customers according to prevalent trends. Investigator further discussed that more income was generated in the embroidery work by the artisans which helped to enhance their status as well as increased their confidence and self-esteem.

Dhamija (2004) stated that embroidery plays an important role in generating income and maintaining tradition which requires a hard work. The traditional embroidery explains the culture, heritage and skills of artisans in a particular period. The entire artisans community is determined by traditional styles, the type and intricacy of work and the type of materials used by them. The technique of embroidery, colour combination and patterns used by the artists also reveal their knowledge and expertise about their art. Later, Saini *et al* (2005) reported regarding the flow trends of embroideries on the female apparels to improve the designs. Investigators indicated that the flower motifs were the predominant trend of embroidery. The stitches such as chain, French knot and satin, which are done by machines, were most preferred stitches in the embroidery.

Gabba (2005) reported that embroideries from past days were done by the artisans which is essential to satisfy their urge of creativeness. The craftsmen of modern times have knowledge about the hundreds of traditional embroidery designs from which they are adapting and modifying designs to create new effects on modern apparel according to their suitability. Artisans are well aware of the forms and textures that are important for the ornamentation of various textile products. With the increasing demand of new embroidery motifs in commercial market, artisans create different effects of embroidery on various textures thereby acquiring good economic status.

Gandotra (2010) conducted a study on a multivariate analysis of women entrepreneurs running boutiques in Punjab. Investigator reported that the type of hand embroidery stitches used in different boutiques were gold and silver work such as *dabka*, *pitta*, *aari*, metal, *gottapatti*, patch work, cut work and thread work performed by all the boutiques operating from shops and houses. The number of hand embroidery stitches such as herring bone, long and short stitch, darning stitch and button hole stitch were significantly higher in boutiques operating from shops as compared to boutiques operating from houses as indicated by the data. The overall pattern of most of stitches used was by and large similar in both the boutiques.

Pandey (2010) reported in her study that artisans earned very less wages in spite of working very hard and straining their eyes by working whole day. Middle man and shopkeepers have been earning benefits whereas embroiderers have not been getting their dues for their hard work. Investigator further found that the living

conditions of artisans were very bad and they earned very less to meet their day to day requirements. The art of *zardozi* would die in the coming years if these condition will persist and this business will be in the hand of people who have no knowledge of *zardozi*. Investigator suggested that the artisans are not interested to teach their children the art of *zardozi* because of less earnings and they are seeking the help of government in the form of subsidies or loans so that this art can survive.

Bhargava and Mathur (2012) conducted a study on renaissance of Barmer embroidery. They found that motifs of gota embroidery have changed in the present times. In the earlier times more of geometrical designs were seen in most of the costumes. Sometimes floral and bird designs were also found, whereas at present the type and size of designs have changed such as abstract motifs are also being used. Gota work is done by the cut and fold techniques into various shapes to prepare small and large patterns of various plants, leaves and *jaal*. The motifs were categorized according to their sources. Plants motifs were given the name of *buttas*, floral motifs were named *as gamla*, *pan ka phool*, *jali wala phool* and *sitar phool*. Similarly animals motifs were embroidered in different styles like peacock, deer, elephant. Motifs with filled stitches were known as *jaal* and motifs were given different names such as *patti ka jaal*, *kalash ka jaal*, *thali ka jaal* and *saras ka jaal*, They further revealed in their study that there is difference between in embroidery work of artisans belonging to different castes. Most of women doing gota work in Hindu community were Rajput, Baniyas and Jains in Nalaya district of Jaipur. As compare to Hindu women, more number of Muslim women were performing this work. Seventy per cent of Rajput women were involved in gota work whereas only thirty per cent of Muslim women were engaged in *Aaritari* and *Kashidakari* embroidery work.

Anonymous (2012a) found in her study that for performing *zari* work mainly three styles of embroidery work were popular. In all types of *zari* work metallic threads were used. Gold wrapped threads were used in two types of embroidery work. Third style of embroidery is known as *mukaish* work in which *zari* was used to provide a coiled surface and silk thread was used to fix it. Another metal embroidery was known as *kamdani* which was done with metallic thread straight away on fabric. Another type of metallic embroidery which is similar to *pitta* work was done with flat gold or silver wire. *Badla* work was also done in *zari* embroidery by pulling the thread from the fabric which was used for creating metallic dots designs which were slightly raised on the surface of fabric.

Anonymous (2012b) revealed that due to various health issues such as poor eye-sight and body aches mainly in back and head, majority of embroiderers did not encourage their children to choose the profession of *zari* work rather they encouraged

them to study and opt for some other profession. Investigator also studied various types of problem faced by the unit owners. Shortage of raw materials, marketing, finance and skilled artisans were the major constraints faced by the respondents. Embroidery work was not found to be profitable as the wages were too less in comparison to the labour and time spent. Artisans revealed that as compared to other professions there was no facility of medical funds or pension and bonus. It was demanded by the artisans that some sort of financial help should be provided by the government. Further, they demanded that government should also promote this embroidery at national level by setting up exhibitions from time to time.

Anonymous (2016) reported that the entire *zari* embroidery industry has been under the control of traders. They earned a huge amount of profit through this business. Master in this enterprise have always been earning benefits as the entire production system was under their control but artisans were payed fixed wages which are very less. Moreover artisans were not able to take orders directly due to seasonal demand of this work.

Khut (2016) in their study on gold and silver embroidery considered the art of gold embroidery and silver embroidery national Adygh's costumes. In the analysis of embroidery used in the historical and comparative methods, these techniques have helped to understand that this ancient art form and to this day are popular in the North Caucasus. Gold embroidery has always been an important element of folk art Circassia's. This art required a huge investment of time and labor, knowledge and skills.

AlhadiAbd and AlhadiAbd (2017) stated that art of embroidery is one of the traditional arts that are characterized by flexibility and originality. Also, designer achieves through it many of the magnificent ideas by using a variety of embroidery stitches in regular and random forms to create fashion. The masterly hand embroidery remains an elegant art always seen with admiration and appreciation and value does not reduce over the time, but the time increases its price. So, the designer must transfer this heritage to the emerging generations, and directing them to act, innovation and awareness of the ancient arts and how we can develop it to what is beneficial for the current taste. Significant statistical differences among decorative composition, added materials, embroidery directions and repetition type were considered.

Kaur and Kaur (2018) in their study explored a field of textile craft, which incorporates the techniques of traditional hand embroidery design and a simple hand woven structure into construction processes of garment production to enhance the craftsmanship of the local fashion industry. Also, traditional and cultural

significance were considered so as to provide a new dimension to local garment decorating processes. The results of the study revealed that a wide possibility of creating and fashioning various simple hand woven structures of traditional significance into production of garments and also provided innovative ways of creating new ideas for progress of the local industry. The experiment revealed that with careful blending of yarns of various types, colors and sizes, very attractive and significant results can be achieved making it appropriate for use in garment decoration.

Zhang (2018) discovered that gold and silver color embroidery is a process in which gold and silver platinum paper are wound on a silk thread to form gold and silver threads, which are then made into various patterns or contour lines, and then colored lines are used to fasten the pattern lines on the base material. The innovation in the process of teaching, the design of practical activities, and their significance, so that traditional skills can promote the national spirit in the new concept and teaching of out of school education, inheriting the human civilization, serving the social harmonious and cultural development, thus achieving the goal of education were discussed.

Sharma and Rao (2019) in their study on traditional hand and machine embroidery in present era studied the comparison between both type of embroideries and found that hand embroidery is now diminishing due to its higher cost and slow procedure. Major population of the country belongs to different income groups and their demand varies from low to high quality. To resolve such issues machine embroidery is the solution to the fast changing fashion world but when it comes to top designer studios and couture wear outfits hand embroidery is still in a boom. Also it was concluded that both the techniques of surface embellishment are special in different areas of apparel production.

Edwards (2020) in his study on branding tradition explained that hand embroidery occupies a complex territory in which gender, caste, heritage and globalization are considered. The study was incorporated in the Kutch region and historic commercial embroidery of the region was examined and found that how the marketing of craft by state and other agencies has increased and how the idea of branding tradition has emerged in various forms in the context of Gujarat. It also considered how women are reconciling the conventions of tradition with commercial engagement in global markets.

Singhal and Bhagat (2020) in their review paper on use of gold in textiles reported that in ancient era gold was used in textiles too so as to depict one's wealth and status in the society. Gold was converted into zari threads to be

incorporated in the fabric while weaving and embroidery. It was also beaten into thin sheets and converted into powdered form which was used for printing on the fabric. Almost all the aspects of fabric construction have used gold in some form or other. With the passage of time changes have taken place in traditional methods as well as the raw materials used. Due to the high cost of gold and silver, imitation zari was introduced which had copper in it. This resulted in decline of the quality as well as appearance of the fabrics produced. Modernization also resulted in use of power loom instead of handloom as it is fast and cheaper.

Rind *et al* (2021) found that poverty is the biggest problem in Pakistan and reported that the problems and prospects of hand embroidery in the cottage industries plays an important role in economic development of the countries. The study revealed that government is providing the required level of support to hand embroidery. Respondents cannot perform household chores along their work and this created differences in domestic economic conditions.

Dai (2021) observed that hand embroidery is highly skilled but it has been based on painting and photography for a long time whereas sewing machine embroidery has realized semi-automation, but its efficiency and effect are far less than hand embroidery. The digital embroidery meets mass production but is rarely incorporated into artistic creation. The traditional hand embroidery and the modern machine embroidery have their own advantages, compliment each other and develop in parallel. The game between the two reflects the relationship between cultural and economic value, protection and innovation. In the delicate game of this relationship, manual embroidery and machine embroidery learn and promote each other.

#### **4.2 Studies related to machine embroideries**

Kawlra (1992) studied the role and the scope of machine embroideries in export oriented manufacturing units. Investigator reported that machine embroidery could be done on various material such as leather, felt, paper and bark of trees etc. Apart from these materials wool, cotton and linen were used for embroideries with metallic threads, beads, sequins and semi precious stones. In all parts of world there has been lots of difference in the types of stitches but the basic stitches involved are stem, satin, knotted, buttonhole, blanket, chain and feather which are same throughout the world.

Sharma (1992) conducted a study on sewing machine industry in Ludhiana city. Investigator revealed information related to present infrastructure of sewing machine industry, its production pattern, marketing pattern of industry and the problems faced like cost structure and cost-benefit relation. It was found that sewing

machine industry was a small scale industry and all units were established by present owners. The link model of sewing machine was produced by maximum number of units. Sewing machines are assembled by various components, the major ones include bobbin case, shuttle driver with spring, needle bar, presser bar, arm shaft, connecting rod and thread take up cam in body of sewing machine. These machines were hand driven, motor operated and embroidery attachments were also possible to perform the machine embroidery work.

Morrell (1995) stated that history of embroidery was established in 1828. In earlier times, embroidery machines were parallel to hand sewing machines which used to create faster ways of producing surfaces and patterns used in such time-consuming manual processes as stitching, overcasting raw edges, embroidering and lace making. Today, technological developments were made for both commercial and industrial embroiders.

According to Aggarwal and Gahlot (1999) the designs of traditional embroidery were often applied to modern apparels and household textiles as per requirement of their needs to create variety. Further it was found that computer provided the designers with a tool to increase the efficiency of their imagination. Moreover, it helped in decreasing the stress of the worker which was faced by them by using old construction processes. Most of the designers i.e 83 per cent used computer to redesign textiles including machine embroidery into fashion clothing.

Mogg (2000) opined that every piece of art and craft revealed the efforts, workmanship, time, taste and styles. In most of the related documentation, it is rare to come across a comprehensive analysis of handcrafted and machine embroidery in the South Western Nigeria. Fashion designed textiles in the South West of Nigeria were so dynamic, because of their culture which seems to be flamboyant and flashy. Yet, embroidery expression seems not to be matching up with fashion embroidery as practiced and employed in Northern Nigeria. In the contemporary period, traditional Yoruba embroideries have become increasingly modified with the latest trends as per the new methods of apparel construction. This method was used by most of the designers with the use of computer machines to make patterns of customer's garments, cheaper and quicker to achieve. The culture of South-Western Nigeria revealed that the embroidery have the important place in their society. They had specific type of motifs which revealed different symbolic representations.

Massey (2005) studied the potential of machine embroidery in the study on employment and income generating source in Ludhiana. Investigator revealed that frequently embroidered personal use articles were ladies shirts followed by *dupattas*, *lehngas*, *salwars* and *blouse/tops*. Jackets/cardigans and stoles were the least

embroidered articles and none of the respondents embroidered trousers/half pants in personal use articles. Cushion covers were mainly embroidered household articles followed by bed covers/bed sheets and sofa covers.

Jyoti *et al* (2007) reported that by keeping in mind the pace of world in modern times, embroidery machines with computerized system have been developed which have plenty of techniques and systems to develop designs according to demand of market. The recent adoption of computerized system has improved the efficiency of work and also saved time. The CAD has resulted in better quality and flexibility in design development, increasing efficiency and shortening the time between design concept and actual working. The introduction of CAD is useful to a business owner when it comes to correctly rendering and visualizing designs with different motifs and placements. The quality and intricacy of designs is much better due to various sophisticated tools.

Kan and Kaur (2010) conducted a study on adapting hand embroidery motifs into woven concept by the use of computer application. They found that traditional embroidery motifs have been used by modifying them into contemporary end use by using various textile designing software. Thus, computer aided textile designing (CAD) has been very widely used in the present day. The adaption of CAD has become very necessary for the designers in replicating the motifs properly. Moreover various designs can be reproduced for further use and simple designs can be modified to create new patterns with different colour combinations. Another benefit of computer application was found in terms of preview of the designs which could be visualized on the monitor before finalizing the designs. With the use of CAD the entire design could be stored in the archive for further use.

Kaur (2019) developed six long dresses with pannels on which machine embroidery was done by using different designs which were prepared with mughal motifs. Fifteen designs of long dresses using floral mughal motifs were developed and scores were obtained from judges for six most preferred designs. Investigator prepared six long panelled dresses by using most preferred designs with machine embroidery. The assessment of the prepared long paneled dresses in terms of machine embroidery, colour combination and design of dresses with mughal motifs was done. The machine embroidered dresses were highly accepted by the respondents. Majority of respondents favoured silk fabric for dresses with weighted mean score 5.22 followed by satin having weighted mean score 4.86. Bell shaped sleeves were highly preferred by respondents with weighted mean score 6.68.

Rocha *et al* (2020) observed that using digital machine embroidery along with mechanical embroidery technique supports fabricating consistent high-fidelity

prototypes for soft wearables in the form of research products. This approach involves creating the textile substrate together while integrating and embedding electronic components through a stabilized process while keeping high control over alterations between prototypes.

Sofronova and Angelova (2021) revealed that there is a large applications of machine embroidery in textile and apparel design and high-tech clothing items, there is a lack of systematic arrangement of the digital stitch lines which is used by embroidery machines and embroidery designers. The instruments used for creating various embroidery objects are simply described without providing systematic information on the types of stitch lines. The technologists relied on already developed techniques and strategies for digitalizing stitches in various software products or final appearances of stitch lines or the applications. They aimed to develop a detailed and systematic classification of the digital stitch lines in machine embroidery.

Swielam (2021) reported the effect of machine embroidery variables on the appearance of waterproof fabrics for the standard embroidery. The manufacture of fabrics and textiles is one of the industries that have witnessed a great development in recent times in the whole world which creates the fabrics with special characteristics such as water proofness. The best types of machine embroidery yarns on waterproof fabrics is silk thread, followed by metallic thread. The best threatening methods when embroidery done on waterproofing clothes are strength with paper and non-stick wadding, followed by strength with non-stick wadding and finally strength with paper.

After thorough analysis of the results of the above mentioned studies, the present investigation was planned and the methodology followed is presented in the next chapter.

## **CHAPTER III**

### **MATERIALS AND METHODS**

The current study was conducted to develop the utility articles using gold and silver embroidery on the basis of consumers` preferences for product, colour, motif, size of motif, embellishments and color of base fabric. Based upon the preferences of the respondents, the consumer acceptance and cost effectiveness of the developed products were studied. The present chapter explains the methodology that was employed during the study under the following heads and subheads:

#### **3.1 Location of Study**

#### **3.2 Design of Research**

##### **3.2.1 Documentation and selection of motifs and utility articles**

3.2.1.1 Documentation and selection of gold and silver embroidery motifs

3.2.1.2 Selection of utility articles

##### **3.2.2 Survey**

3.2.2.1 Selection of sample and sample size

3.2.2.2 Preparation of first interview schedule

3.2.2.3 Pre testing and Data Collection

##### **3.2.3 Preparation of products**

3.2.3.1 Designing of five utility articles

3.2.3.2 Selection of the developed designs

3.2.3.3 Preparation of utility articles

##### **3.2.4 Determination of consumer`s acceptance and cost effectiveness of developed products**

3.2.4.1 Selection of respondents

3.2.4.2 Preparation of second interview schedule

3.2.4.3 Assessment of consumers` acceptance and cost effectiveness of the prepared articles.

#### **3.3 Tabulation and Analysis of data**

#### **3.4 Operational definitions**

#### **3.1 LOCATION OF STUDY**

The present study was purposively conducted in Ludhiana city because of the easy accessibility of the respondents to investigator. The survey was carried out in four randomly selected localities Civil Lines, Bahadurke Road, Kishore Nagar, PAU campus.

#### **3.2 DESIGN OF RESEARCH**

##### **3.2.1 Documentation and selection of motifs and utility articles**

##### **3.2.1.1 Documentation and selection of gold and silver embroidery motifs**

The motifs of gold and silver hand embroidery were documented from secondary

sources like books, magazines and internet. A total of 25 motifs were documented and placed in a MS Word file. The motifs were shown to a panel of 10 judges comprising of the faculty and PhD scholars of the Department of Apparel and Textile Science, PAU, Ludhiana. They were asked to give ranks to the motifs. The motifs scoring top ten ranks were selected for designing the five utility articles preferred by the respondents for preparation.

### **3.2.1.2 Selection of utility articles**

A list of ten utility articles was prepared and the selection of five best utility articles according to their suitability for being developed using gold and silver machine embroidery was done by considering the ranks given by a panel of 10 judges comprising of the faculty and PhD scholars of the Department of Apparel and Textile Science, PAU, Ludhiana.

### **3.2.2 Survey**

A survey was carried out in order to know the preferences of respondents before preparing utility articles using gold and silver machine embroidery. To study the socio-personal profile of the respondents and their preferences for various utility articles including the base fabric, embellishments, color combinations etc. to be employed for preparing them using gold and silver machine embroidery, an interview schedule was employed..

#### **3.2.2.1 Selection of sample and sample size**

From each of the selected localities, twenty four female respondents between 20-60 years of age were randomly selected. A total of ninety six respondents were taken for conducting the survey.

#### **3.2.2.2 Preparation of first interview schedule**

An interview schedule was prepared to obtain the relevant information from the respondents regarding various utility articles preferred for development using gold and silver embroidery techniques. The personal interview is very practicable as the researcher can interact directly with the respondents and explain the terms used in the research instrument about which they are ignorant. Such terms can be clearly described in face to face interactions and as a result better responses and results are obtained. There were three parts of the interview schedule - The first part dealt with the background information of respondents which included age, educational status, occupation of respondents, occupation of family, type of the family, gross monthly income. The second part dealt with the information related to consumer awareness regarding gold and silver embroidery and possession of gold and silver embroidery articles. The third part dealt with their preferences for various features like the types of fabric, colour combination, size of motifs, use of embellishments with gold and silver embroidery.

### **3.2.2.3 Pre testing and collection of data**

Pre-testing was done before the actual administration of the developed interview schedule to the respondents. This was done to get an idea about various complications which the investigator might face during the course of actual data collection. Hence, the interview schedule was tested personally on 20 respondents from areas not covered under research design. Accordingly required modifications were done in the interview schedule to make it relevant for data collection. The data was to be collected through personal interview but due to COVID pandemic lockdown, the interview schedule was sent to the selected respondents by email. Any clarification required by the respondents was solved through phone calls.

### **3.2.3 Preparation of products**

#### **3.2.3.1 Development of designs for five utility articles**

On the basis of preferences given by the respondents for various utility articles and the motifs selected by the panel of judges, the investigator developed twenty designs, four for each of the five utility article using COREL DRAW X7.

#### **3.2.3.2 Selection of the developed designs**

The developed designs were shown to a panel of judges that included faculty and PhD scholars of the Department of Apparel and Textile Science for ranking. On the basis of the ranks given by the judges, most preferred design in each category was selected for development.

#### **3.2.3.3 Preparation of utility articles**

The preferred fabrics for each article were procured from the local market. The pattern was traced on the fabric according to the design. Gold and silver machine embroidery was done on fabric using different types of sizes of motifs according to the design. The cutting was done in accordance with the article design after completing the embroidery on it. A little extra length or width of fabric was kept for finishing while cutting the fabric. After cutting, fabrics were rechecked for required measurements. Major and minor adjustments were taken care of and stitching was done using preferred embellishments.

### **3.2.4 Determination of consumer acceptance and cost effectiveness of prepared articles**

Consumer acceptance and cost effectiveness of the developed articles was determined through another interview schedule through which the preferences of respondents for prepared gold and silver embroidered articles were taken on various parameters. The cost effectiveness was studied by calculating the cost price and selling price and profit percentages were deduced. For this purpose, the following consecutive steps were taken:

#### **3.2.4.1 Selection of respondents**

For determining the consumer acceptance for prepared products and their cost effectiveness, a sub sample of 24 respondents, eight from each locality was selected from the already selected ninety six respondents.

### 3.2.4.2 Preparation of second interview schedule

Another interview schedule was prepared to study the preferences of the respondents for the gold and silver machine embroidery utility articles on the basis of the suitability of fabric, design, colour combination, embellishments, utility and overall impact. The respondents were asked to assess the quoted price as appropriate, low or high to assess the cost effectiveness of the developed articles. They were also asked to give a selling price for each article.

### 3.2.4.3 Assessment of consumer`s acceptance and cost effectiveness of the prepared articles.

The cost of prepared products (each product), was calculated by considering the cost of raw materials and the labour utilized. A thirty percent profit was added to the cost price of each article to calculate the selling price. To assess the percentage profit for each product, the average selling price given by the respondents were considered. For this the following formula was used:

$$\text{Percentage profit} = \frac{\text{Average selling price} - \text{Cost price}}{\text{Cost price}} \times 100$$

### 3.3 Tabulation and Analysis of data

The data collected by using interview schedule was coded, tabulated and analyzed. To obtain background information regarding socio-personal profile of the respondents and the possession and awareness regarding gold and silver embroidered articles, frequencies and percentages were drawn out. Weighed mean scores were calculated by giving maximum marks to first preference and minimum marks to last preference and then adding up the marks for obtaining the values. By following this procedure, the scores for each item was calculated and those getting maximum scores were given the first rank and those getting minimum scores were given the last rank. The probable profit margin was deduced using Z test.

### 3.4 Operational definitions

1. **Gold and silver embroidery:** It is the art of embroidery using gold and silver metal threads or simple threads with metal coated around them.
2. **Utility article:** A product which is useful, profitable or beneficial.
3. **Cost price:** Price that includes the cost of designing, cost of raw materials used, cost of labour etc.
4. **Quoted price:** The price calculated by adding percent profit to the cost price of each product.
5. **Average selling price:** The average selling price was worked out on the basis of suitability of the quoted price to the respondents at which they were willing to buy the product.

## **CHAPTER-IV**

### **RESULTS AND DISCUSSION**

The present study “Development of utility articles through simulation of gold and silver hand embroidery” was carried out to develop gold and silver machine embroidered utility articles and to assess their consumer acceptance and cost effectiveness. The data pertaining to the study was coded, tabulated, analyzed and have been presented in this chapter. To facilitate the comprehension of the presentation, this chapter has been divided into the following categories:

- 4.1 Selection of motifs and utility articles
- 4.2 Socio-personal profile of respondents
- 4.3 Possession and awareness about gold and silver embroidered articles
- 4.4 Preferences of respondents for preparing utility articles
- 4.5 Designing of products using CorelDraw
- 4.6 Selection of designs for development of articles
- 4.7 Development of the articles using gold and silver machine embroidery
- 4.8 Consumers` acceptance of the developed articles
- 4.9 Assessment of cost effectiveness of the developed products

#### **4.1 Selection of motifs and utility articles**

##### **4.1.1 Documentation of gold and silver hand embroidery motifs**

The gold and silver hand embroidery dates back to ancient times and is an art of intricate work done with metallic gold and silver threads. The traditional motifs were inspired from nature i.e. flowers, leaves, fruits, animals and birds. Most of them were natural stylized but geometrical motifs were also used extensively in this embroidery. On the basis of their suitability of use on utility articles using machine embroidery, the motifs of gold and silver hand embroidery were documented from secondary sources like books, magazines and internet. A total of 25 motifs were documented from which ten motifs were selected by a panel of judges for further designing and development of utility articles (Fig4.1-Fig4.4).



1



2



3



4



5



6

**Fig.4.1 Documented motifs of gold and silver embroidery**



7



8



9



10



11

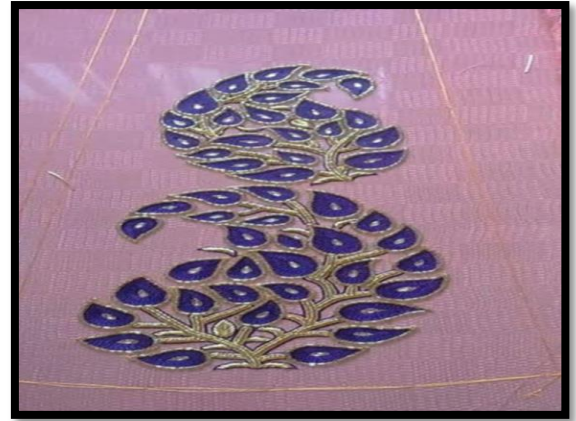


12

**Fig. 4.2 Documented motifs of gold and silver embroidery**



13



14



15



16



17



18

**Fig. 4.3 Documented motifs of gold and silver embroidery**



19



20



21



22



23



24



25

Fig. 4.4 Documented motifs of gold and silver embroidery

**Table 4.1 Selection of motifs by panel of judges**

<b>Motif No.</b>	<b>WMS</b>	<b>Ranks</b>
<b>1</b>	<b>7.92</b>	<b>IV</b>
<b>2</b>	<b>8.88</b>	<b>I</b>
<b>3</b>	<b>8.28</b>	<b>II</b>
<b>4</b>	<b>8.12</b>	<b>III</b>
<b>5</b>	4.96	XVII
<b>6</b>	4.76	XVIII
<b>7</b>	5.04	XIV
<b>8</b>	5	XVI
<b>9</b>	<b>6.96</b>	<b>V</b>
<b>10</b>	6.12	XI
<b>11</b>	<b>6.32</b>	<b>VI</b>
<b>12</b>	<b>5.52</b>	<b>X</b>
<b>13</b>	5.28	XII
<b>14</b>	<b>6.08</b>	<b>VIII</b>
<b>15</b>	<b>5.68</b>	<b>IX</b>
<b>16</b>	5.08	XIII
<b>17</b>	5.4	XV
<b>18</b>	<b>6.24</b>	<b>VII</b>
<b>19</b>	4.25	XIX
<b>20</b>	4.2	XX
<b>21</b>	3.64	XXI
<b>22</b>	3.36	XXII
<b>23</b>	0.8	XV
<b>24</b>	0.68	XXIV
<b>25</b>	1.8	XXIII

Data in Table 4.1 reveal that first rank was given to motif 2 having WMS 8.88 and second rank to motif 3 with WMS 8.28, followed by motif 4 (WMS 8.12) which acquired rank third whereas rank fourth was obtained by motif 1 having WMS 7.92. Fifth rank was achieved by motif number 9 having WMS 6.96. Sixth rank was achieved by motif 11 having WMS 6.32. The seventh rank was given to motif 18 which got the WMS 6.24. The ninth and tenth ranks were obtained by motif 15 (WMS 5.68) and motif 12 (WMS 5.52) respectively. These ten motifs were used for designing the five utility articles.

#### 4.1.2 Selection of utility articles

A list of twelve utility articles was prepared and the selection of five top preferred utility articles according to their suitability for being developed using gold and silver machine embroidery was done by considering the ranks given by a panel of ten judges.

**Table 4.2 Selection of utility articles by panel of judges**

<b>Product name</b>	<b>WMS</b>	<b>Ranks</b>
<b>Pouch (<i>potli</i>)</b>	5.3	X
<b>Wall hanging</b>	<b>6.5</b>	<b>V</b>
<b>Mobile holder</b>	<b>7.7</b>	<b>III</b>
<b>Table mat</b>	<b>6.6</b>	<b>IV</b>
<b>Mask</b>	5.2	XII
<b>Belt</b>	6.0	VII
<b>Cushion cover</b>	<b>8.7</b>	<b>II</b>
<b>Spectacle case</b>	5.2	XI
<b>Curtain tie band</b>	6.2	VI
<b>Neck band</b>	5.3	IX
<b>Hand bag</b>	<b>9.0</b>	<b>I</b>
<b>Bookmark</b>	5.6	VIII

Table 4.2 shows the selection of utility articles by judges in which first rank was given to hand bag with WMS 9.0 and second rank was given to cushion cover (WMS 8.7) The third rank was obtained by mobile holder having WMS 7.7, fourth rank by table mat (WMS 6.6) and finally fifth rank was given to wall hanging with WMS 6.5. The least preferences were given to pouch, mask, belt, bookmark, curtain tie band and neck band respectively. Hence, cushion cover, wall hanging, handbag, mobile holder and table mat were taken up for product development using gold and silver machine embroidery.

#### 4.2 Socio-personal profile of respondents

The socio-personal profile of the respondents includes age, educational status, occupation, family type and family income. The details of this information have been furnished in Table 4.3.

**Table 4.3 Distribution of respondents according to their socio-personal profile****n=96**

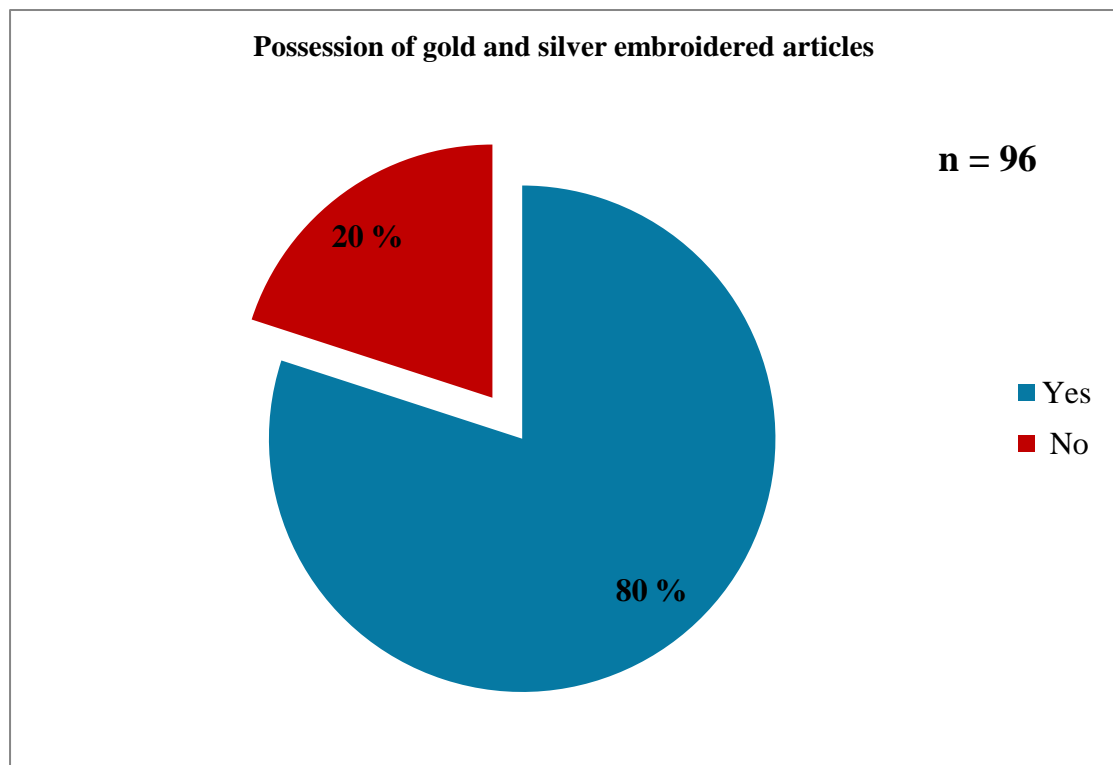
<b>Socio-personal variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age (years)</b>		
20-30	<b>41</b>	<b>42.70</b>
31-40	24	25.00
41-50	19	19.79
51-60	12	12.50
<b>Educational status</b>		
Senior Secondary	6	6.25
Graduation	33	34.37
Post-Graduation	<b>57</b>	<b>59.37</b>
<b>Occupation of the respondents</b>		
Business	15	15.62
Service	25	26.04
Home Maker	<b>29</b>	<b>30.20</b>
Any other	27	28.12
<b>Type of family</b>		
Nuclear	<b>62</b>	<b>64.58</b>
Joint	34	35.41
<b>Monthly income of the family (Rs)</b>		
Upto 50,000	26	27.08
50,001 – 1,00,000	<b>44</b>	<b>45.83</b>
1,00,001 – 1,50,000	10	10.41
Above 1,50,000	16	16.66

The data in the table reveal that 42.70 percent respondents belonged to the age group 20-30 years, 25 percent of them were between 31-40 years of age, 19.79 percent came from age group 41-50 years and only 12.50 percent were between 51-60 years of age. The educational status of the respondents shows that 59.37 percent were post-graduates, while 34.37 percent of them were graduates and only 6.25 percent were senior secondary pass. Regarding occupation of the respondents, it is evident from the table that 30.20 percent of them were home makers, while 26.04 percent and 15.62 percent of the respondents were engaged in service and business respectively.

Surprisingly, 28.12 percent of them were involved in occupations other than these which were either part time jobs or making articles for earning some income etc. As far as the type of family to which the respondents belong, the table clearly shows that 64.58 percent respondents belonged to nuclear family whereas 35.41 percent of them belonged to joint family. Monthly income of majority of the respondents (45.83 percent) was between Rs 50,001 – 1,00,000. About 27 percent of them had family income upto Rs 50,000, while for 10.41 percent of the respondents it ranged between Rs 1,00,001 – 1,50,000 and 16.66 percent had monthly income above Rs 1,50,000.

#### 4.3 Possession and awareness about gold and silver embroidered articles

This section of the chapter deals with the possession and awareness of the respondents for gold and silver embroidered articles.



**Fig 4.5 Possession of gold and silver embroidered article by the respondents**

Data depicted in Fig 4.5 shows that 80 percent respondents possessed gold and silver embroidered articles whereas 20 percent of them had never acquired any gold and silver embroidered article.

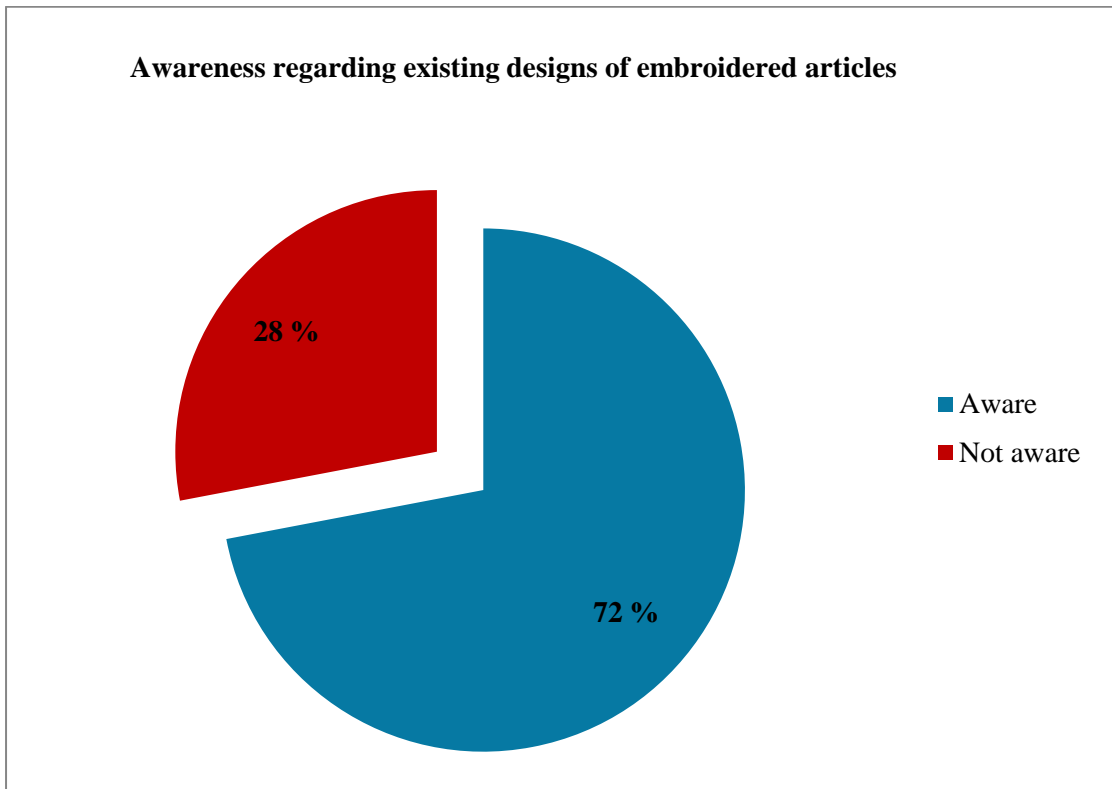
**Table 4.4 Mode of procurement of embroidered articles by the respondents**

**n=80\***

S. No.	Source	Frequency	Percentage
1.	Retail stores	27	<b>28.12</b>
2.	Wholesalers	10	10.41
3.	Online	30	<b>31.25</b>
4.	Boutiques (Customised)	9	9.37
5.	Exhibitions and Fairs	41	<b>42.70</b>

\*multiple responses

Data in Table 4.4 reveal that 42.70 percent of respondents procured the gold and silver embroidered articles from exhibitions and fairs, while 31.25 and 28.12 percent of them made the purchases from online stores and retail stores respectively. Only 10.41 percent of respondents bought these articles from wholesalers and very few of them (9.37 %) got them made from boutiques.



**Fig 4.6 Awareness of respondents regarding existing designs of embroidered articles available in market**

It is clear from Fig 4.6 that 72 percent respondents were aware about the existing designs of gold and silver embroidered articles in market while 28 percent of

them were not aware about them.

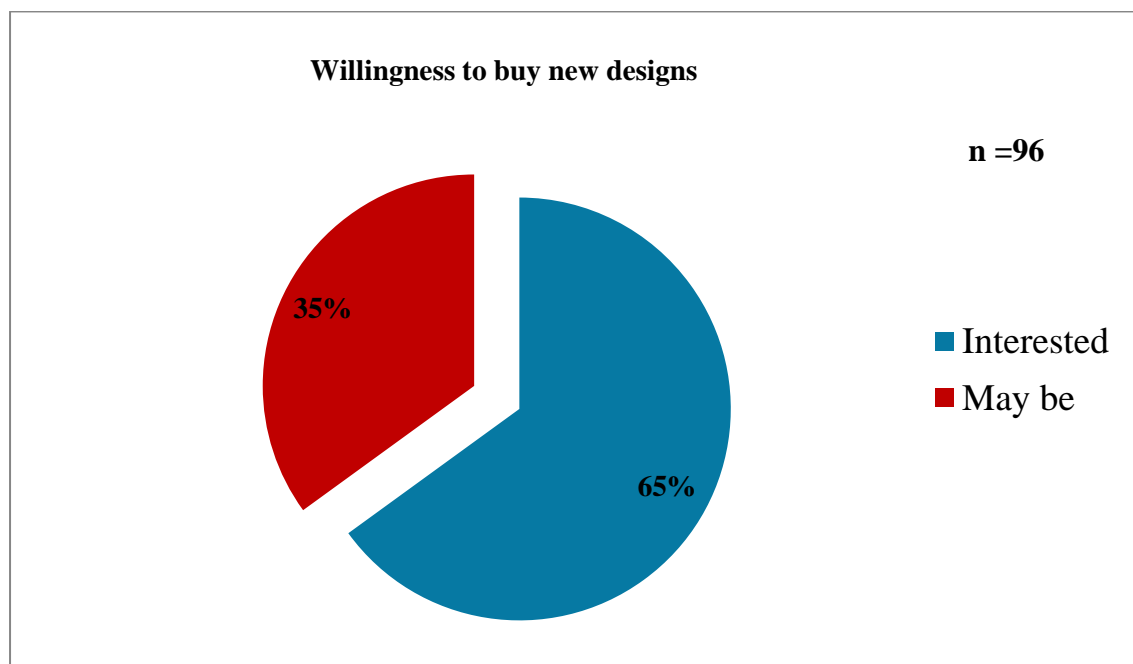
**Table 4.5 Source of information for latest trends in market regarding gold and silver embroidery articles**

n=75\*

S. No.	Source	Frequency	Percentage
1.	T.V.	12	12.5
2.	Newspaper	5	5.2
3.	Internet	<b>39</b>	<b>40.6</b>
4.	Magazines	19	19.76
5.	Books	10	10.41
6.	Friends and family	<b>40</b>	<b>41.6</b>
7.	Showrooms	13	13.5
8.	Exhibition and fairs	<b>31</b>	<b>32.2</b>

\*Multiple responses

Data furnished in Table 4.5 show that 41.6 percent of respondents were aware about latest trends in gold and silver embroidered articles from the friends and family, whereas about equal number of them i.e. 40.6 percent got the knowledge by exploring the internet. About thirty two percent of respondents came to know about the latest designs in gold and silver machine embroidery after visiting exhibitions and fairs. About 19 percent of them got the information from the magazines and 10.41 percent from books. Very less percentage of respondents came to know about new trends from showrooms (13.5 %) and television (12.5%). Very few i.e. 5.2 percent of respondents got the information from newspapers.



**Fig 4.7 Willingness to buy new designs of gold and silver embroidered articles**

The Fig 4.7 depicts that 65 percent respondents were interested in buying new designs in gold and silver embroidered articles whereas 35 respondents said they might be interested in buying gold and silver embroidered articles.

#### **Preferences of respondents for utility articles**

This part of the chapter deals with the preferences of the respondents regarding different parameters such as type of fabric, colour of base fabric, size of motifs, types of embellishments etc. On the basis of these preferences, designing of utility articles was done for development of end products.

**Table 4.6 Preferences of the respondents for suitable fabric for utility articles**

**n=96**

<b>Product</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Cushion Cover</b>		
Pure silk	18	18.75
Pure Cotton	27	28.12
Synthetic blends	51	53.12
<b>Table Mat</b>		
Pure silk	23	23.95
Cotton	42	43.75
Synthetic blends	31	32.29
<b>Wall hanging</b>		
Pure silk	52	54.16
Cotton	15	15.62
Synthetic blends	29	30.20
<b>Hand Bag</b>		
Pure silk	19	19.79
Cotton	42	43.75
Synthetic blends	35	36.45
<b>Mobile Holder</b>		
Pure silk	20	20.83
Cotton	30	31.25
Synthetic blends	46	47.91

Preferences of the respondents for the fabric type to be used for making various utility articles employing gold and silver machine embroidery are furnished in Table 4.6. For cushion cover, majority of the respondents i.e. 53.12 percent preferred

synthetic blended fabric over pure cotton which was chosen by 28.12 percent respondents. On the other hand only 18.75 percent of the respondents gave preference to pure silk fabric for making cushion cover. In case of table mat, a large number of respondents (43.75 %) selected pure cotton fabric followed by 32.29 percent of respondents who preferred synthetic blended fabric. About 24 percent of respondents wanted table mat to be made in pure silk fabric.

As far as wall hanging is concerned, majority of the respondents i.e. 54.16 percent wanted it to be made in pure silk followed by 30.20 percent of respondents who preferred synthetic blended fabric and least preference (15.62 %) was given to pure cotton fabric. For hand bag, most of the respondents (43.75 percent) gave preference to pure cotton fabric followed by synthetic blended fabric which was chosen by 36.45 percent respondents and only 19.79 percent selected pure silk for making hand bag. Lastly for mobile holder, synthetic blended fabric was favoured by 47.91 percent respondents, followed by pure cotton which was preferred by 31.25 percent respondents and minimum respondents (20.83 %) wanted mobile holder to be made in pure silk fabric.

**Table 4.7 Preferences of the respondents for colour of the base fabric**

**n=96**

<b>Product</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Cushion Cover</b>		
Dark shades	25	26.04
Pastel shades	15	15.62
Medium shades	41	42.70
Neutral colours	15	15.62
<b>Table Mat</b>		
Dark shades	27	28.12
Pastel shades	48	50.00
Medium shades	11	11.45
Neutral colours	10	10.41
<b>Wall hanging</b>		
Dark shades	24	25.00
Pastel shades	40	41.66
Medium shades	28	29.16
Neutral colours	4	4.16

<b>Hand Bag</b>		
Dark shades	41	42.70
Pastel shades	17	17.70
Medium shades	18	18.75
Neutral colours	20	20.83
<b>Mobile Holder</b>		
Dark shades	39	40.62
Pastel shades	20	20.83
Medium shades	17	17.70
Neutral colours	20	20.83

Data in Table 4.7 depict the preferences of respondents for the colour of base fabric. In case of cushion cover, large number of respondents i.e. 42.70 percent preferred medium shades over darker shades which were preferred by 26.04 percent respondents. An equal number of respondents (15.62 % each) favoured pastel shades and neutral colours. For table mat half number of the respondents (50%) gave preference to fabric in pastel shade. About 28 percent of respondents preferred dark shade for fabric followed by about equal number of respondents (11.45 and 10.41 %) who preferred medium shades and neutral colours respectively. As far as wall hanging is concerned, a large number of respondents (41.66 %) wanted fabric in pastel shades. About 29 percent of them preferred medium shades and 25 percent preferred dark shades. Very few i.e. 4.16 percent wanted the fabric in neutral colour for making wall hanging. The table further shows that for hand bag majority of respondents (42.70 percent) preferred dark shades and 20.83 percent preferred neutral colours for fabric and almost equal number of respondents favoured pastel (17.70%) and medium shades (18.75). For mobile holder, most of the respondents (40.62 %) preferred dark shade whereas equal number of respondents (20.83 %) preferred it to be made in pastel shade and neutral coloured fabric. Only 17.70 percent of the respondents wanted mobile holder to be made in medium shade.

The preferences of the respondents for the size of motif to be used in gold and silver machine embroidery on various utility articles are furnished in Table 4.8. From the small, medium and large motifs, majority of the respondents (52.08%) preferred medium sized motifs to be embroidered on cushion cover. Small motifs were favoured by 37.50 percent respondents and only 10.41 percent of them wanted large sized motifs to be embroidered on the cushion cover. As far as table mat is concerned, most of the respondents (59.37 %) preferred medium sized motifs, about equal number of

respondents i.e. around 20 percent each preferred small and large sized motifs for table mat.

**Table 4.8 Preferences of the respondents for appropriate size of motif in utility articles.**

**n=96**

<b>Product</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Cushion Cover</b>		
Small	36	37.50
Medium	50	52.08
Large	10	10.41
<b>Table Mat</b>		
Small	19	19.79
Medium	57	59.37
Large	20	20.83
<b>Wall hanging</b>		
Small	21	21.87
Medium	26	27.08
Large	49	51.04
<b>Hand Bag</b>		
Small	22	22.91
Medium	51	53.12
Large	23	23.95
<b>Mobile Holder</b>		
Small	44	45.83
Medium	35	36.45
Large	17	17.70

In case of wall hanging, majority of the respondents (51.04 %) preferred large sized motifs, whereas 27.08 percent of them wanted medium size and 21.87 percent favoured small sized motifs. For hand bag, again majority of the respondents i.e. 53.12 percent preferred medium sized motifs and about equal number of respondents (23.95 and 22.91 %) favoured large and small sized motifs. But in case of mobile holder, majority of the respondents (45.83 %) preferred small sized motifs and 36.45 percent of them wanted medium sized motifs whereas only 17.70 percent of respondents favoured large motifs on it.

Table 4.9 reveals the data regarding preferences of respondents for the type of embellishments to be used along with gold and silver machine embroidery for various utility articles. It is evident from the table that ribbon was preferred by majority of the respondents for cushion cover. Almost similar number of respondents favoured thread lace, tassels and *dori* whereas least preference was given to *gota* (6.25%). In case of table mat more number of respondents (39.58 %) preferred thread lace followed by 21.87 percent who preferred *gota* and less number of respondents favoured ribbon, tassels and *dori* for use along with gold and silver embroidery.

**Table 4.9 Preference of respondents for the type of embellishments**

**n=96**

<b>Product</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Cushion Cover</b>		
Ribbon	50	52.08
<i>Gota</i>	6	6.25
Thread laces	15	15.62
Tassels	12	12.50
<i>Dori</i>	13	13.54
<b>Table Mat</b>		
Ribbon	14	14.58
<i>Gota</i>	21	21.87
Thread laces	38	39.58
Tassels	11	11.45
<i>Dori</i>	12	12.50
<b>Wall hanging</b>		
Ribbon	18	18.75
<i>Gota</i>	11	11.45
Thread laces	37	38.54
Tassels	16	16.66
<i>Dori</i>	14	14.58
<b>Hand Bag</b>		
Ribbon	19	19.79
<i>Gota</i>	37	38.54
Thread laces	21	21.87
Tassels	5	5.20
<i>Dori</i>	14	14.58

<b>Mobile Holder</b>		
Ribbon	22	22.91
<i>Gota</i>	13	13.54
Thread laces	7	7.29
Tassels	13	13.54
<i>Dori</i>	41	42.70

For wall hanging, more number of respondents (38.54 %) wanted thread lace as embellishment followed by ribbon which was preferred by 18.75 percent of respondents and less preference was given to *gota*, tassels and *dori*. As far as hand bag is concerned, 38.54 percent respondents preferred *gota* followed by thread lace and ribbon which were preferred by 21.87 and 19.79 percent respondents respectively. For mobile holder, majority of the respondents i.e. 42.70 percent preferred *dori*, followed by ribbon which was favoured by 22.91 percent of respondents. Thread lace was preferred least, only by 7.29 percent of the respondents.

#### **4.5 Designing of articles using CorelDraw**

After taking into consideration the most preferred parameters by the respondents, four designs were created for each of the five utility articles in CORELDRAW X7(Fig4.8-4.12).

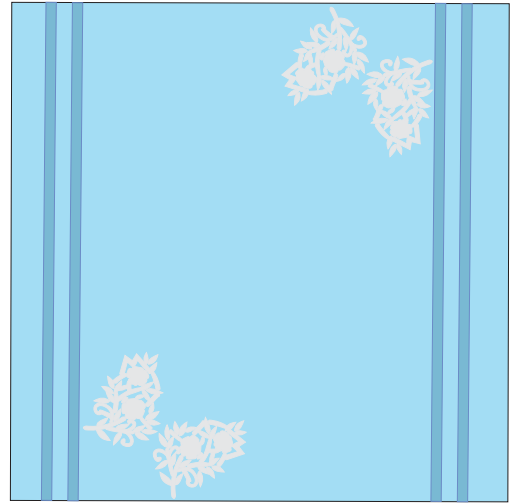
#### **4.6 Selection of designs for development of articles**

Four designs created for each of the five utility articles in CORELDRAW X7 were assigned codes and shown to a panel of judges. The selection of one design was done by the judges by giving rank to each of the prepared designs. The ranks given by them are presented in Table 4.10.

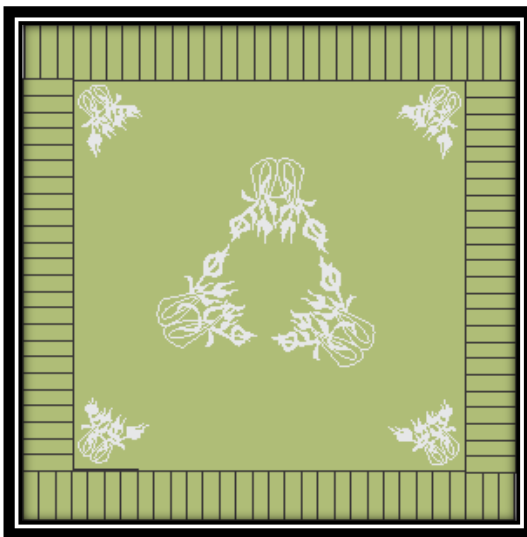
It is evident from the table that for cushion cover, design C3 was given rank 1 as it was preferred by most of the judges. In case of table mat, rank 1 was attained by design T1 as it was preferred by majority of the judges. In case of wall hanging, design W3 was ranked 1 and for hand bag, first rank was achieved by design H3. For mobile holder, design M4 was most preferred and was given first rank. The designs which got first rank in all the categories were used for developing the articles.



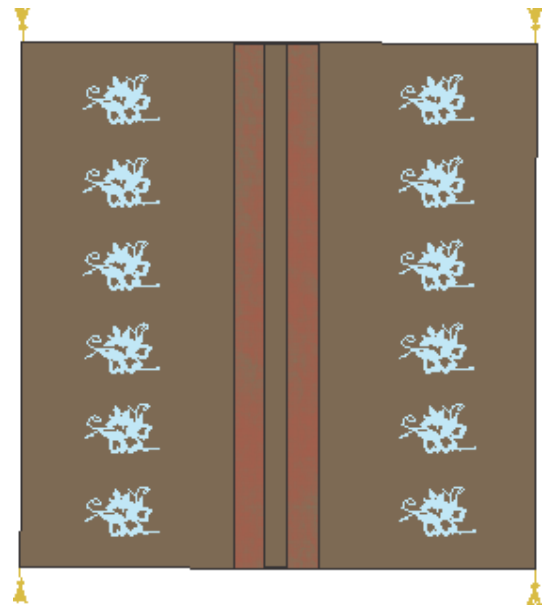
C1



C2

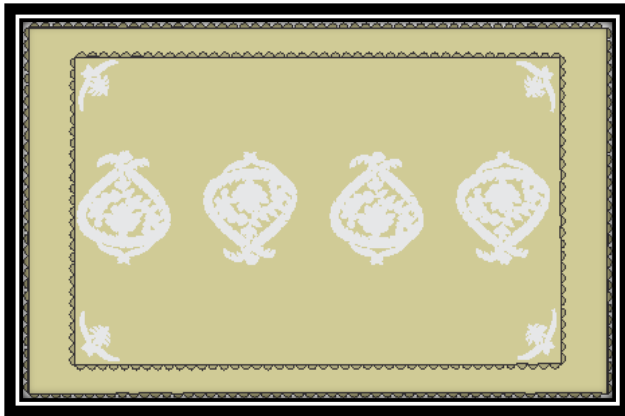


C3

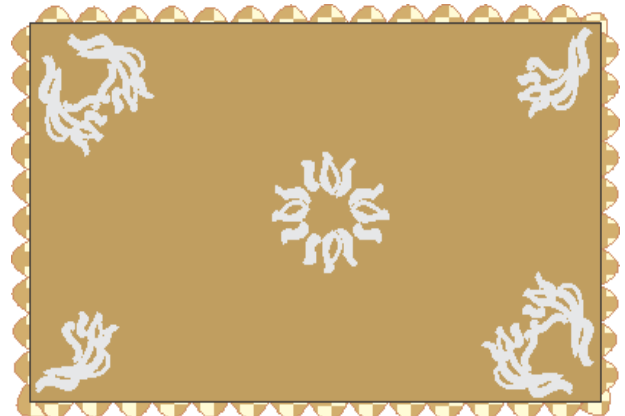


C4

Fig. 4.8 Designs of cushion cover



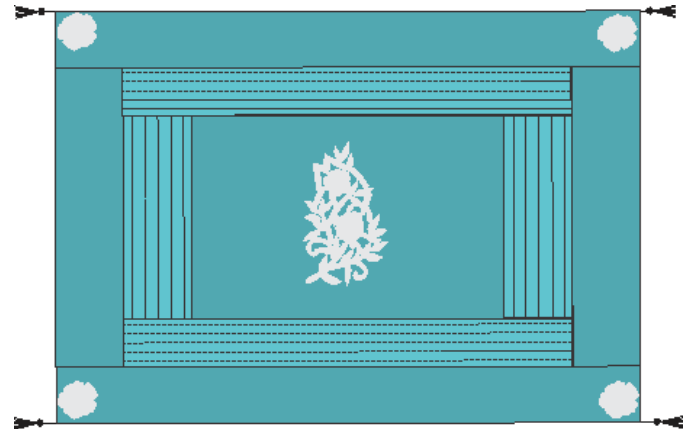
T1



T2

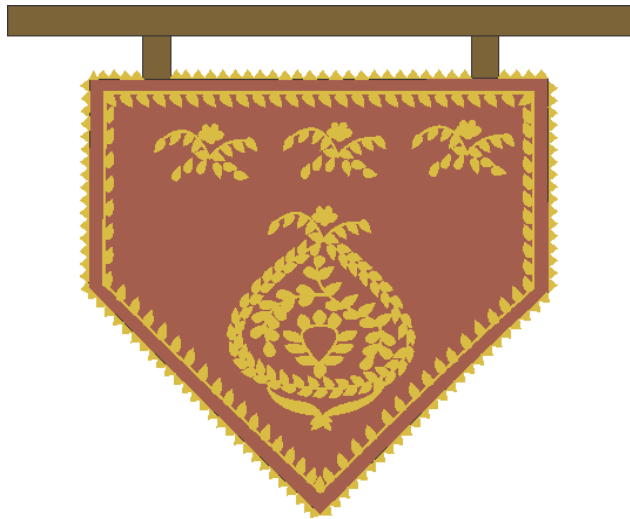


T3

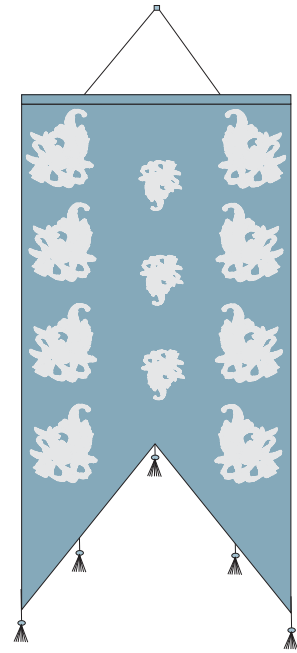


T4

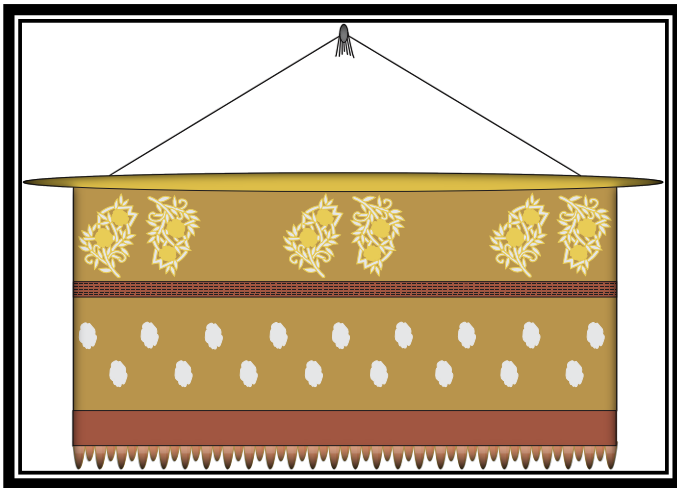
Fig. 4.9 Designs of table mat



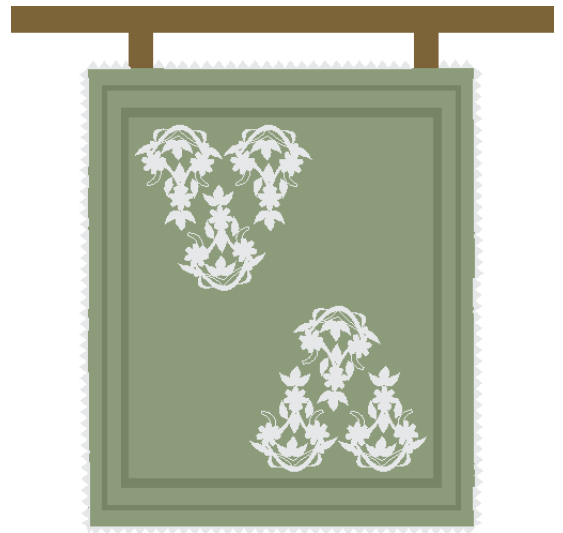
W1



W2



W3



W4

Fig. 4.10 Designs of wall hanging



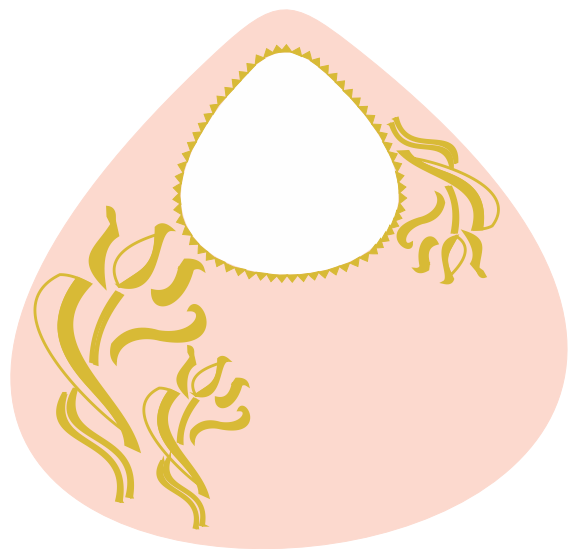
**H1**



**H2**



**H3**



**H4**

**Fig. 4.11 Designs of hand bag**



M1



M2



M3



M4

Fig. 4.12 Designs of mobile holder

**Table 4.10 Selection of designs by the panel of judges for development of utility articles**

Utility article	Design code	Frequency	Ranks
<b>Cushion cover</b>	C1	3	II
	C2	-	-
	C3	7	I
	C4	-	-
<b>Table mat</b>	T1	8	I
	T2	1	II
	T3	1	II
	T4	-	-
<b>Wall hanging</b>	W1	3	II
	W2	2	III
	W3	5	I
	W4	-	-
<b>Hand bag</b>	H1	2	III
	H2	3	II
	H3	4	I
	H4	1	IV
<b>Mobile holder</b>	M1	2	II
	M2	1	III
	M3	2	II
	M4	5	I

#### **4.7 Development of the articles using gold and silver machine embroidery**

The selected design for each utility article was used for preparation of five utility articles using gold and silver machine embroidery. These were cushion cover, table mat, wall hanging, hand bag and mobile holder.

The cushion cover was developed using synthetic blended fabric in mint green medium shade. Medium and small sized motifs were machine embroidered using silver metallic thread. Pleating on all the four sides was done as a constructional feature during stitching for enhancing the design (Fig 4.13).

The table mat was constructed using glazed cotton fabric in pastel sage green colour. Medium and small sized motifs with silver metallic thread were machine embroidered on it. For embellishment, narrow width scalloped thread lace was stitched on all four edges and around the embroidery in rectangular shape (Fig 4.14).



**Fig. 4.13 Cushion cover**



**Fig. 4.14 Table mat**



**Fig. 4.15** Wall hanging



**Fig. 4.16 Hand bag**



**Fig. 4.17 Mobile holder**

The wall hanging was made using pure silk fabric in medium shade of golden colour. Large and medium sized motifs were machine embroidered on the fabric in repeated patterns. The embroidery was done with both golden and silver metallic threads. Contrasting maroon coloured thread lace was stitched at the bottom edge for embellishment and golden thread running stitch was used on maroon fabric strip stitched above the lace to provide a designer look (Fig 4.15).

The hand bag was made using pure cotton fabric which had khadi imitation look. The medium grey colour was combined with dark blue to form a pleasant contrast. The dark blue cotton fabric was used for making the pocket which was stitched on the front side of the bag. Medium sized motifs were embroidered on the pocket using silver metallic thread. A dark blue fabric string was attached on the top for holding the bag in hand or on shoulder (Fig 4.16).

The mobile holder was made using dark brown synthetic blended fabric. Small sized motifs were embroidered with golden thread on two diagonal corners. For enhancing the design, thin golden *dori* was used as embellishment on the central surface of the front side of the pouch. A golden metallic ring was attached on the top to hold the pouch (Fig 4.17).

#### 4.8 Consumer acceptance of the developed articles

The data pertaining to the preferences of the respondents for the developed articles on the basis of various parameters have been furnished in this section. For this preferences were taken from a sub sample of 32 respondents.

**Table 4.11 Preferences of the respondents regarding suitability of developed articles n=32**

Prepared product	WMS	Ranks
Cushion cover	3.18	II
Table mat	2.81	IV
Wall hanging	3.34	I
Hand bag	2.40	V
Mobile holder	3.06	III

The preferences of the respondents for the suitability of the prepared utility articles is presented in Table 4.11. It is evident from the table that considering the suitability of the article for gold and silver machine embroidery, wall hanging was given the first rank with WMS 3.34. The second rank was given to cushion cover (WMS 3.18) followed by mobile holder which attained third rank with WMS 3.06. Last ranks were obtained by table mat (WMS 2.81) and hand bag (WMS 2.40).

**Table 4.12 Preferences of the respondents regarding design of developed articles**  
n=32

Prepared product	WMS	Ranks
Cushion cover	2.40	IV
Table mat	3.31	II
Wall hanging	2.93	III
Hand bag	3.71	I
Mobile holder	2.34	V

Table 4.12 shows the preference of the respondents for the articles on the basis of their design. In this category, hand bag was given first rank with WMS 3.71, followed by table mat that was given second rank (WMS 3.31) and third rank was given to wall hanging having WMS 2.93. Lower ranks were given to cushion cover and mobile holder with WMS 2.40 and 2.34 respectively.

**Table 4.13 Preferences of the respondents regarding colour combinations used in developed articles**  
n=32

Prepared product	WMS	Ranks
Cushion cover	2.37	V
Table mat	3.37	I
Wall hanging	2.59	II
Hand bag	2.43	III
Mobile holder	2.43	IV

The data furnished in Table 4.13 depicts the preference of respondents for utility articles regarding the color combination used. In this, first rank was attained by table mat having WMS 3.37 followed by wall hanging that was given second rank (WMS 2.59) and third rank was given to hand bag and mobile holder with WMS 2.43. In this category, lowest rank was obtained by cushion cover (WMS 2.37).

**Table 4.14 Preferences of the respondents regarding use of embellishments**  
n=32

Prepared product	WMS	Ranks
Cushion cover	2.56	IV
Table mat	2.62	III
Wall hanging	2.78	I
Hand bag	2.18	V
Mobile holder	2.68	II

The preferences of the respondents for the articles on the basis of the use of embellishments is presented in Table 4.14. It is evident from the table that wall

hanging with WMS 2.78 got the first rank. It was followed by mobile holder (WMS 2.68) which was ranked second and the table mat was given rank third with WMS 2.62. Least ranks were obtained by cushion cover (WMS 2.56) and hand bag (WMS 2.18).

**Table 4.15 Preferences of the respondents regarding overall impact of developed articles**

n=32		
Prepared product	WMS	Ranks
Cushion cover	2.37	III
Table mat	2.84	I
Wall hanging	2.43	II
Hand bag	1.84	V
Mobile holder	2.31	IV

Data pertaining to the preferences of the respondents regarding overall impact of the prepared utility articles using gold and silver machine embroidery have been furnished in Table 4.15. Under this category, table mat scored first rank with WMS 2.84, wall hanging got second rank (WMS 2.43) and third rank was attained by cushion cover with WMS 2.37. Mobile holder and hand bag were ranked fourth and fifth respectively.

#### **4.9 Assessment of cost effectiveness of the developed articles.**

In this part of the chapter, an attempt has been made to study the cost effectiveness of the prepared utility articles with gold and silver machine embroidery. It includes assessment of selling price of each article and view of the respondents regarding the quoted price.

**Table 4.16 Cost assessment of developed utility articles**

Product Name	Fabric cost (Rs)	Embroidery cost (Rs)	Stitching (Rs)	Embellishments (Rs)	Cost Price (Rs)	Quoted Price (Rs) including profit margin (30%)
Cushion cover	80	150	70	-	300	390
Table mat	50	150	60	20	280	360
Wall Hanging	200	400	150	100	850	1100
Hand bag	100	120	80	-	300	390
Mobile cover	40	50	30	20	140	180

Table 4.16 presents the cost assessment of the utility articles developed using gold and silver machine embroidery. For cushion cover, the cost price was calculated as Rs 300 and by adding thirty percent profit, the quoted price was found to be Rs 390. Similarly, cost price for table mat was found to be Rs 280 whereas quoted price was Rs 360 after adding 30 percent profit. The cost price of wall hanging was estimated to be Rs 850 and after adding the profit, the quoted price was figured out as Rs 1100. For hand bag the cost price was Rs 300 and quoted price after adding profit was Rs 390. The mobile holder had cost price at Rs 140 but the quoted price was found to be Rs 180.

**Table 4.17 Distribution of the respondents according to their opinion for suitability of quoted price**

Product name	Quoted price of product	n=32		
		High Frequency (%)	Appropriate Frequency (%)	Low Frequency (%)
Cushion cover	390	11(34.4)	18(56.2)	03(9.4)
Table mat	360	15(46.8)	14(43.8)	03(9.4)
Wall hanging	1100	18(56.2)	14(43.8)	-
Hand bag	360	06(18.8)	26(81.2)	-
Mobile holder	180	09(28.1)	22(68.8)	01(3.1)

Figure in the parenthesis indicate percentages

The opinion of the respondents regarding suitability of the quoted price is presented in Table 4.17. The findings depict that the quoted price for cushion cover was considered appropriate by 56.2 percent respondents whereas, 34.4 percent of them considered it high and very few respondents (9.4 %) thought it to be low. For table mat, 46.9 percent respondents found the quoted price as high and about 43 percent said it was appropriate. Again only 9.4 percent respondents found the price to be low. In case of wall hanging, 56.2 percent respondents reported the quoted price as high and 43.8 percent of them said it was appropriate. None of the respondents thought the price to be low. For hand bag, majority of the respondents (81.2%) said that the quoted price was appropriate whereas only 18.8 percent of them considered it to be high. As far as mobile holder is concerned, again most of the respondents (68.8 %) found the quoted price as appropriate and only 28.1 percent said it was high. Very few percentage of respondents (3.1 %) considered the quoted price to be low.

**Table 4.18 Assessment of probable profit of the prepared products**

<b>Products</b>	<b>Cost price (Rs)</b>	<b>Quoted price (Rs)</b>	<b>Average Selling Price (Rs)</b>	<b>SD</b>	<b>z- value</b>	<b>Probable Profit (% age)</b>
<b>Cushion cover</b>	300	390	360	47.65467	-3.26	-7.05
<b>Table mat</b>	280	360	340	49.51376	-2.28	-5.56
<b>Wall hanging</b>	850	1100	970	156.0523	-2.66	-11.51
<b>Hand bag</b>	300	390	370	31.06802	-2.45	-3.45
<b>Mobile holder</b>	140	180	160	27.82252	-3.11	-8.51

The probable profit of the prepared utility articles was assessed after calculating the average selling price as suggested by the respondents and data have been furnished in Table 4.18. For cushion cover, the average selling price was found to be Rs 360 and the negative z value indicate that the profit percent should be decreased by about 7 percent so as to reach the average selling price. Similarly, for table mat, the average selling price was computed as Rs 340 and the profit percent to be lowered by 5.56 percent. Subsequently, for wall hanging , hand bag and mobile holder, the average selling price was found to be lesser than the quoted price. Hence, the profit percentage needs to be decreased by 11.5, 3.45 and 8.51 percent respectively.

The high acceptability and profit margins between 18- 27 percent of the developed utility articles, showed that these can be commercially viable when manufactured at large scale. At commercial level, the cost of production will definitely reduce and profit margins will increase. Hence, thirty percent and above profit can be earned which would make the manufacturing of such articles, a profitable enterprise.

## **CHAPTER-V**

### **SUMMARY**

Embroidery is an art of decorating a fabric's surface by making stitches in a pattern with the help of needle and thread which helps to enhance its beauty. Hand embroidery in India is an age old cultural heritage. Each part of India has contributed to the styles of embroidery characteristic of its own tradition and culture. It is said that embroideries are very commonly practiced all over India from ancient times. Gold and silver has been used as embellishment and adornment of the human body since ancient times. This adornment was not only limited to the body in form of jewellery but it was also used to decorate the attire worn by the person. These were considered as a symbol of royalty and wealth and used in various ways to decorate the fabric.

The gold and silver hand embroidery in India is an age old cultural heritage which is also known as *zardozi* or *zari* work. It is done by skilled craftsmen trained through generations but in modern times, the time and labour involved in addition to low wages has led to decline in this craft and the artisans are shifting to other professions or machine embroidery. The machine embroidery work is being performed similar to hand embroidery work but with less time and expenditure. Moreover, machine embroidery articles can be very economical and can be purchased by people of all classes. Therefore, it is gaining popularity and replacing the hand work day by day and also may be taken up as a source of income generation. Hence, the present study was taken with the following objectives:

#### **Objectives**

1. To study the consumers' preferences for gold and silver machine embroidery articles.
2. To design and prepare the articles according to preferences of the consumers.
3. To study the cost effectiveness of prepared utility articles.

#### **Methodology**

- The motifs of gold and silver hand embroidery were documented from secondary sources like books, magazines and internet. A total of 25 motifs were documented and placed in a MS Word file. The motifs were shown to a panel of 10 judges comprising of the faculty and PhD scholars of the Department of Apparel and Textile Science, PAU, Ludhiana. They were asked to give ranks to the motifs. The motifs scoring top ten ranks were selected for designing the five utility articles selected by the respondents for preparation.
- A list of 10 utility articles was prepared and the selection of five best utility articles according to their suitability for being developed using gold and silver

machine embroidery was done by considering the ranks given by a panel of 10 judges comprising of the faculty and PhD scholars of the Department of Apparel and Textile Science, PAU, Ludhiana.

- A survey was carried out in order to know the preferences of respondents before preparing utility articles made using gold and silver machine embroidery. For this, an interview schedule was employed to study the socio-personal profile of the respondents and their preferences for various utility articles including the base fabric, embellishments, colour combinations etc to be employed for preparing them using gold and silver machine embroidery.
- From each of the selected localities, twenty four female respondents between 20-60 years of age were randomly selected. A total of ninety six respondents were taken for conducting the survey.
- On the basis of preferences given by the respondents for various utility articles and the motifs selected by the panel of judges, the investigator developed twenty designs, four for each of the five utility article using COREL DRAW X7. The developed designs were shown to a panel of judges that included faculty and PhD scholars of the Department of Apparel and Textile Science for ranking. On the basis of the ranks given by the judges, most preferred design in each category was selected for product development.
- The preferred fabrics for each article were procured from the local market. The pattern was traced on the fabric according to the design. Gold and silver machine embroidery by whom on fabric using different types of sizes of motifs according to the design. The cutting was done in accordance with the article design after completing the embroidery on it. A little extra length or width of fabric was kept for finishing while cutting the fabric. After cutting, fabrics were rechecked for required measurements. Major and minor adjustments were taken care of and stitching was done using preferred embellishments.
- Cost effectiveness of prepared articles was determined through another interview schedule to study the preferences of respondents for prepared gold and silver embroidered articles and the percentage profit for each of the products was calculated. Following steps were followed for this purpose: The cost of prepared products (each product), was calculated by considering the cost of raw materials and the labour utilized. The value of product was calculated by adding 30 percent profit to cost of each product. The respondents were then asked to give a suitable price for buying the particular products (average selling price) in order to assess the percentage profit for each product.

## **Major findings**

- Majority of respondents i.e. 80 percent possessed gold and silver embroidered articles whereas 20 percent of them had never acquired any gold and silver embroidered article.
- About 42.70 percent of respondents procured the gold and silver embroidered articles from exhibitions and fairs, while 31.25 and 28.12 percent of them made the purchases from online stores and retail stores respectively. Only 10.41 percent of respondents bought these articles from wholesalers and very few of them (9.37 %) got them made from boutiques.
- Majority of i.e. 72 percent respondents were aware about the existing designs of gold and silver embroidered articles in market while 28 percent of them were not aware about them.
- Most of the respondents (41.6 %) were aware about latest trends in gold and silver embroidered articles from the friends and family, whereas about equal number of them i.e. 40.6 percent got the knowledge by exploring the internet. Very less respondents came to know about new trends from showrooms (13.5 %) and television (12.5%). Very few i.e. 5.2 percent of respondents got the information from newspapers.
- Majority of the respondents (65 percent) were interested in buying new designs in gold and silver embroidered articles whereas 35 respondents said they might be interested in buying gold and silver embroidered articles.
- Preferences of the respondents for the fabric type showed that for cushion cover, majority of the respondents i.e. 53.12 percent preferred synthetic blended fabric over pure cotton which was chosen by 28.12 percent respondents. In case of table mat, a large number of respondents (43.75 percent) selected pure cotton fabric followed by 32.29 percent of respondents who preferred synthetic blended fabric. As far as wall hanging is concerned, majority of the respondents i.e. 54.16 percent wanted it to be made in pure silk followed by 30.20 percent of respondents who preferred synthetic blended fabric. For hand bag, most of the respondents (43.75 %) gave preference to pure cotton fabric followed by synthetic blended fabric. Lastly for mobile holder, synthetic blended fabric was favoured by 47.91 percent respondents.
- Preferences of respondents for the colour of base fabric showed that for cushion cover, large number of respondents preferred medium shades. For table mat majority of the respondents (50 %) gave preference to fabric in pastel shade. As far as wall hanging is concerned a large number of respondents (41.66 %) wanted fabric in pastel shades. For hand bag majority of respondents (42.70 %) preferred

dark shades and for mobile holder, most of the respondents (40.62 %) preferred dark shade.

- The preferences of the respondents for the size of motif to be used in gold and silver machine embroidery on various utility articles depicted that majority of the respondents (52.08 %) preferred medium sized motifs to be embroidered on cushion cover. As far as table mat is concerned, most of the respondents (59.37 %) preferred medium sized motifs and in case of wall hanging, majority of the respondents (51.04 %) preferred large sized motifs. For hand bag, again majority of the respondents i.e. 53.12 percent preferred medium sized motifs but in case of mobile holder, most of the respondents (45.83 %) preferred small sized motifs
- Regarding preferences of respondents for the type of embellishments to be used along with gold and silver machine embroidery for various utility articles it is observed that ribbon was preferred by majority of the respondents for cushion cover. For wall hanging, more number of respondents (38.54 %) wanted thread lace as embellishment followed by ribbon. As far as hand bag is concerned, 38.54 percent respondents preferred *gota* followed by thread lace and ribbon. For mobile holder, majority of the respondents i.e. 42.70 percent preferred *dori*, followed by ribbon.
- After taking into consideration the most preferred parameters by the respondents, four designs were created for each of the five utility articles in COREL DRAW X7. For cushion cover, design C3 was given rank 1 as it was preferred by most of the judges. In case of table mat, rank 1 was attained by design T1 as it was preferred by majority of the judges. In case of wall hanging, design W3 was ranked 1 and for hand bag, first rank was achieved by design H3. For mobile holder, design M4 was most preferred and was given first rank. The designs which got first rank in all the categories were used for preparing the articles.
- The selected design for each utility article was used for preparation of five utility articles using gold and silver machine embroidery. These were cushion cover, table mat, wall hanging, hand bag and mobile holder.
- Preferences of the respondents for the suitability of the prepared utility articles showed that considering the suitability of the article for gold and silver machine embroidery, wall hanging was given the first rank and the second rank was given to cushion cover followed by mobile holder which attained third rank. Last ranks were obtained by table mat and hand bag.
- Preferences of the respondents for the articles on the basis of their design showed that hand bag was given first rank followed by table mat that was given second rank and third rank was given to wall hanging. Lower ranks were given to cushion

cover and mobile holder.

- Preferences of respondents for utility articles regarding the colour combination used were taken and it was seen that first rank was attained by table mat followed by wall hanging and third rank was given to hand bag. In this category, lowest ranks were obtained by mobile holder and cushion cover.
- Preferences of the respondents for the articles on the basis of the use of embellishments showed that wall hanging got the first rank. It was followed by mobile holder which was ranked second and the table mat was given rank third.
- Data pertaining to the preference of the respondents regarding overall impact of the prepared utility articles using gold and silver machine embroidery depicted that table mat scored first rank, wall hanging got second rank and third rank was attained by cushion cover. Mobile holder and hand bag were ranked fourth and fifth respectively.
- The cost assessment of the utility articles prepared using gold and silver machine embroidery was done. For cushion cover, the cost price was calculated as Rs. 300 and by adding thirty percent profit, the quoted price was found to be Rs.390. Similarly, cost price for table mat was found to be Rs. 280 whereas quoted price was Rs. 360 after adding 30 percent profit. The cost price of wall hanging was estimated to be Rs. 850 and after adding the profit, the quoted price was figured out as Rs. 1100. For hand bag, the cost price was Rs. 300 and quoted price after adding profit was Rs. 390. The mobile holder had cost price at Rs. 140 but the quoted price was found to be Rs.180.
- The opinion of the respondents regarding suitability of the quoted price showed that cushion cover was considered appropriate by 56.2 percent respondents whereas, 34.4 percent of them considered it high and very few respondents (9.4 %) thought it to be low. For table mat, 46.8 percent respondents found the quoted price as high and about 43 percent said it was appropriate. Again only 9.4 percent respondents found the price to be low. In case of wall hanging, 56.2 percent respondents reported the quoted price as high and 43.8 percent of them said it was appropriate. None of the respondents thought the price to be low. For hand bag, majority of the respondents (81.2 %) said that the quoted price was appropriate whereas only 18.8 percent of them considered it to be high. As far as mobile holder was concerned, again most of the respondents (68.8 %) found the quoted price as appropriate and only 28.1 percent said it was high. Very few respondents (3.1 %) considered the quoted price to be high.
- The probable profit of the prepared utility articles was assessed after calculating the average selling price as suggested by the respondents and it was observed that

for cushion cover, the average selling price was found to be Rs. 360 and the negative z value indicate that the profit percent should be decreased by 7.05 percent so as to reach the average selling price. Similarly, for table mat, the average selling price was computed as Rs. 340 and the profit percent to be lowered by 5.56 percent. Subsequently, for wall hanging , hand bag and mobile holder, the average selling price was found to be lesser than the quoted price. Hence, the profit percentage needs to be decreased by 11.51, 3.45 and 8.51 percent respectively.

### **Conclusion**

- The prepared utility articles were found to be acceptable by the consumers although the profit margin was less when average selling price was taken into consideration.
- When the products would be manufactured commercially, the cost of production will definitely reduce and profit margins will increase. Hence, the developed products will be commercially viable.
- Thus, it can be taken up as a profitable enterprise as one can earn a decent income by making such articles on commercial basis.

## REFERENCES

- Aggarwal D and Galhot M (1999) Simulation of textile designs on computer. *Textiles Dyer Printer* **50**: 26-27.
- AlhadiAbd S and AlhadiAbd I (2017) Creative approaches to the art of hand Embroidery. *Design One Outfit***6**: 145-66.
- Anonymous (2012a) Embroidery-India-Zardozi Patterns.Pinterest.com/isiscat/embroidery-indian-zardozi-patterns(Retrieved on 15/11/2019).
- Anonymous (2012b) Embroidery, <http://www.topic.info.com> (Retrieved on 25/11/2019).
- Anonymous (2016) History of Embroidery, <http://Ezine Articles.com/>. (Retrieved on 6/01/2020).
- Bhargava S and Mathur P (2012) Renaissance of Barmer embroidery. *Textile Trends***29**: 51-52.
- Bhatnagar R(2003) *An exploratory study on preferences of urban women regarding kantha embroidered articles*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Chattopadhyay K (1985) *Handicrafts of India*. pp58-60, India Council for Cultural Relations,New Delhi.
- Dai H (2021) Comparison of Traditional Manual Embroidery and Computer Machine Embroidery in Dress Design in Internet Age. Pp 1-5, The Sixth International Conference on Information Management and Technology.
- Dhami N (2017) *Consumer preferences for decorative textile products prepared by using ribbon embroidery*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Dhamija (2004) *Asian Embroidery*, Pp143, Abhinav Publications, New Delhi.
- Edwards E (2020) Branding Tradition: The commercialization of hand embroidery in Gujrat. *A Companion to Textile Culture*, 61-82.
- Gabba S (2005) *Woven Wonder – The Tradition of Indian Textiles*. pp: 54-56, Ajanta offset and Packaging Ltd, New Delhi
- Gandotra V (2010) *A multivariate analysis of women entrepreneur running boutiques in Punjab*. Ph.D. Thesis, Dr. B.R. Ambedkar University, Agra.
- Gangwar C (2015) *Development of patch work designs with kantha embroidery for*

- cushion covers*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Jyoti, Grover E and Fatima N (2007) Computer aided designing of cushion covers. *Manmade Textiles India* **50**:403-04.
- Kan K and Kaur A (2010) Automation of hand embroidery motifs into self woven designs. [www.uasd.edu/publications](http://www.uasd.edu/publications) (Retrieved on 13/12/2019).
- Kaur J and Kaur R (2018) Traditional hand embroidery and simple hand-woven structures for garment manufacturing used in small scale industry. <http://www.ijesrt.com/issues%20pdf%20file/Archive-2018/June-2018/49.pdf> (Retrieved on 23.8.2021)
- Kaur P (2019) *Development of paneled long dresses using floral Mughal motifs with machine embroidery*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Kawlra V (1992) *A study of role and scope of embroidery in the export oriented manufacturing unit*. M.Sc. Thesis, M.S. University, Baroda, Gujrat.
- Khut AA (2016) Art of Gold and Silver Embroidery of Adygea. pp 91-93, Young Scientist, USA.
- Massey S (2005) *Potential of machine embroidery: A study on employment and income generating source in Ludhiana*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Massey S and Dhillon S (2010) Problems and constraints faced by machine embroidery workers of Ludhiana city. *Pantnagar Journal of Research* **8**: 12-15.
- Mittal U and Paul S (1999) Success story of Zari Craftsmanship. *Indian Textile Journal* **3**: 46-49.
- Mogg P (2000) The effects of modern technology on the production of embroidered clothing in south-western Nigeria. *International Journal of Scientific Research* **6**: 61-66.
- Morrell A (1995) *Techniques of Indian Embroidery*, pp 24-32, Batsford Limited, USA.
- Pandey S (2010) Indian art and craft industry- An overview. <http://www.fibre2fashion.com>. (Retrieved on 17/01/2020)
- Rind S, Farooq K and Adam S (2021) The role of hand embroidery in poverty alleviation: A case study of Gadap town, Karachi. *Journal of Social Sciences and Humanities* **60** (1): 145-164.
- Rocha B, Tomica O, Markopoulos P and Tetteroo D (2020) Crafting Research Products through Digital Machine Embroidery, pp 341-350, Proceedings of the 2020 ACM

Designing Interactive System Conference, Eindhoven Netherlands.

- Ronsdorf B M (1961) Gold and Silver fabrics from medieval to modern times, *CIBA Review*: 2-16
- Sachdeva K (1999) *Creation of designs inspired from Egyptian paintings for the use of textiles material*. M.Sc. Thesis, Panjab University, Chandigarh, India.
- Sharma S (1992) *A study of women entrepreneurs in Ludhiana city*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Sharma S and Rao A (2019) Comparative study based on traditional hand embroidery and machine embroidery in present trends. <https://www.homesciencejournal.com/archives/2019/vol5issue3/PartE/5-3-67-478.pdf> (Retrieved on 26.1.2021).
- Singhal D and Bhagat S (2020) Use of Gold in Textiles. <https://www.researchgate.net/publication/344426691> (Retrieved on 03.08.2021).
- Singla S (1998) *Adapting kasuti embroidery to contemporary uses*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana.
- Sofronova D and Angelova AR (2021) Classification of digital stitch lines in machine embroidery. *Industria Textila* **72** (5): 538-44.
- Swielam Z (2021) The effect of machine embroidery variables on the appearance of waterproof fabrics. *International Design Journal* **11**(2): 451-60.
- Wen R and QIU Y (2017) Design of freestyle machine embroidery. *The Proceedings of the Materials and Mechanics Conference*, The Japan Society of Mechanical Engineers.
- Zhang Y (2018) Research on the Teaching and Learning of Traditional Gold and Silver Color Embroidery, <https://www.researchgate.net/publication/326185010> (Retrieved on 12.10.2021).

**APPENDEIX I**  
**QUESTIONNAIRE**

**Development of Utility Articles through Simulation of Gold and Silver Hand  
Embroidery**

- 1. Name of the respondent:**
- 2. Address:**
- 3. Age:**
- 4. Marital status:**
- 5. Education:**
  - i. Senior secondary
  - ii. Graduation
  - iii. Post graduation
- 6. Type of family:**
  - i. Nuclear
  - ii. Joint
- 7. No. of family members:**
- 8. Occupation of the respondent:**
  - i. Business
  - ii. Service
  - iii. Home Maker
  - iv. Any other
- 9. Monthly income (Rs) of respondent`s family:**
  - i. Up to 50,000
  - ii. 50,001-1,00,000
  - iii. 1,00,001-1,50,000
  - iv. Above 1,50,000
- 10. Do you prefer to buy silver and gold embroidered articles? Yes/No**

If yes, from where do you buy these articles?

  - i. Retail stores
  - ii. Wholesale stores
  - iii. Online
  - iv. Boutiques
  - v. Exhibitions and fairs
- 11. Are you aware of existing designs of various embroidered articles available in the market? Yes/No**

If yes, please tick the sources you use to get information regarding new trends in

these articles:

- i. T.V.
- ii. Newspaper
- iii. Internet
- iv. Magazines
- v. Design books
- vi. Friends and relatives
- vii. Showrooms
- viii. Exhibitions
- ix. Hoardings

**12. Are you interested in buying gold and silver embroidered utility articles?**

- I. Yes
- II. No
- III. Maybe

**13. What type of base fabrics would you prefer for the selected utility articles?**

Article	Pure Silk	Cotton	Synthetic Blends
Cushion Cover			
Table Mat			
Wall Panel			
Hand Bag			
Mobile Holder			

**14. What type of colours of base fabric would you prefer for the selected utility articles?**

Article	Dark shades	Light pastels shades	Medium shades	Neutral Colours
Cushion Cover				
Table Mat				
Wall Panel				
Hand Bag				
Mobile Holder				

**15. Which size of the motifs would you prefer for the selected utility articles?**

Article	Small	Medium	Large
Cushion Cover			
Table Mat			
Wall Panel			
Hand Bag			
Mobile Holder			

**16. Would you like to combine gold and silver embroidery with any embellishment to enhance the beauty of the utility articles?**

**Yes/No**

**17. What type of embellishment in addition to the embroidery would you prefer for the selected utility articles?**

<b>Article</b>	<b>Ribbon</b>	<b>Gota/ Metallic laces</b>	<b>Thread laces</b>	<b>Tassels</b>	<b>Dori/Coil</b>
<b>Cushion Cover</b>					
<b>Table Mat</b>					
<b>Wall Panel</b>					
<b>Hand Bag</b>					
<b>Mobile Holder</b>					

**APPENDIX II**  
**QUESTIONNAIRE II**

**Development of Utility Articles through Simulation of Gold and Silver Hand  
Embroidery**

1. Rank the Gold and Silver embroidered articles according to the following:

<b>Article</b>	<b>Suitability of article</b>	<b>Design</b>	<b>Color combination</b>	<b>Embellishments</b>	<b>Overall impact</b>
Mobile holder					
Hand bag					
Cushion cover					
Table mat					
Wall panel					

2. Give your views regarding the Gold and Silver embroidered articles.

<b>Article</b>	<b>Excellent</b>	<b>Very good</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
Mobile holder					
Hand bag					
Cushion cover					
Table mat					
Wall panel					

3. Do you think the quoted price of articles are:

Articles	Quoted price in rupees	Suitability of quoted price		
		High	Appropriate	Low
Mobile holder	180			
Hand bag	360			
Cushion cover	390			
Table mat	360			
Wall panel	1100			

4. At what price these articles would be suitable?

Articles	Quoted Price (Rs)	Price references by respondent (Rs)
Mobile holder	180	
Hand bag	360	
Cushion cover	390	
Table mat	360	
Wall panel	1100	

## VITA

**Name:** : Rochana Singla  
**Father's Name:** : Mr. Sanjeev Kumar Singla  
**Mother's Name:** : Mrs. Anjali Singla  
**Nationality:** : Indian  
**Date of Birth:** : 31<sup>st</sup> Dec, 1997  
**Permanent Address:** : # 1105, Kailash Chowk, Bindraban Road,  
Civil Lines, Ludhiana- 141001, Punjab  
**E-mail** : rochanasingla89@gmail.com

## EDUCATION QUALIFICATIONS

**Bachelor's degree** : B. Sc. Fashion Designing  
**University and year of award** : Guru Nanak Girls College, Ludhiana, Punjab,  
2019  
**OCPA/Percentage** : 73.61%  
**Master's degree** : M.Sc. (Fashion Designing))  
**University and year of award** : Punjab Agricultural University, Ludhiana,  
Punjab, 2022  
**OCPA** : 6.69/10.00  
**Title of Master's Thesis** : Development of Utility Articles Through  
Simulation of Gold And Silver Hand  
Embroidery