Novel Usage of Toda Embroidery with Simple Fabrics Structure
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ABSTRACT
Toda embroidery is a genetic specialty which is set apart by its geometric themes and delightful completion, it seems like a woven material; however, in the specific structure, it is weaving that is performed on cotton fabric with red and dark woolen threads. This particular style of weaving is privately known as "Pugur" or "Pukhoor" (Sharma & Bhagat, 2018). Toda embroidery depends on geometric structures. The themes utilized were; Huts (crisscross lines), heart molded plans, they were inspired from nature and day by day life. Different plans incorporate wild flowers, mountains and valleys; they don't connect any significance for any design (Baby & Paul, 2017a). In India, there are situated in Nilgiri Province, Tamilnadu state. The individuals are a little network living on the secluded Nilgiri Plateau. The Toda clans are additionally acclaimed for their extraordinary weaving called "Toda weaving", which it is a lesser-known specialty to the outside world (Baby & Paul, 2017b). Women who have been in need during their spare time, they are involved in an indigenous population Embroidery, where it’s coarse, unbleached hand woven white cotton cloth embroidered with "Pukaor" (motif) mainly in Geometric shapes of flowers, animals and natural objects (Baby & kavitha, 2017b). Weaved shawl is designated "Puthkili", it utilizes steel needles and woolen threads, chiefly of dark and red hues. The unbleached idea of hand-woven white fabric helps in determining the estimation of yarn (number of threads) without any problem. Youthful Toda young ladies acquire creating by watching the work done by the older folks of the clans. The beautifications are enlivened ordinarily and regular day to day existence; Toda design inspired by wild ox, different structures incorporate wild flowers, mountains and valley (Baby & Paul, 2017 b).

This study deals with the knowledge about plastic artistic values of Toda and benefit from reviving and presenting Toda embroidery; in addition, the importance of the study comes in the possibility of students benefiting from the revival of the traditional arts in teaching embroidery art and re-employing it in fashion design and accessories. Toda embroidery is like a textile composition in terms of general shape and planning to draw them on square paper, then executed on the fashion accessories. According to that, this study addresses by knowing what the relational connection between Toda and fabric structure is. Textiles today are materials with applications in practicing all our exercises, we are wearing garments constantly and we are encompassing with textiles in practicing the entirety of our surroundings (Berglin, 2008). Textile industry is one of only handful industries of any fundamental businesses, which is portrayed as an important segment of human life. One may arrange it as an increasingly spectacular industry, yet whatever it is, it furnishes with the fundamental prerequisite called garments. There are various sorts of filaments and other crude materials, which are utilized to produce a cloth (Wadje, 2009). This study focuses mainly on giving new measurements to this traditional embroidery. The Toda embroidery appeared distinctly in cotton shawls and some limited accessories; Study of the plastic artistic values of Toda; Study the relationship between Toda and fabric structure, Revival and documentation of Embroidery Toda to execute fashion accessories.

Studies related to the current study include
As a study (Garima Sharma, & Simmi Bhagat, 2018) entitled “revival of Toda embroidery - needlecraft of nilgiris” aims to document the embroidery of Toda community with respect to technique, material, color, designs, and motifs used in it; planning an intervention to revive the craft for sustainability of Toda embroidery through preparation of motif catalog, design development and clothing layout; prepare a video document on Toda embroidery of Nilgiris to create awareness and the study found the literature review on Toda community and their craft does not reveal its origin. However, the community and the art seem to be of considerable antiquity. According to the majority of the respondents from ooty; it is a hereditary craft.
which is as old as the community itself and no one were able to pinpoint as to how this needlecraft originated. They learned to see their elders involved in this traditional craft.

A Study (Carolin Baby & Susan Paul, 2017a) entitled "Toda embroidery“ aims to collecting data on traditional Toda embroidery techniques, their various designs and the method of application on traditional pushcoli shawls and the socio-economic culture of Todas from the Nilgiri region of Tamilnadu. It also aims to make indigenous art known to the outside world. The study found that 70% of respondents were from a common family and only 30% were from nuclear families. The majority was in the 20-50 age groups, which of them 35% were about 30-40 years old; 25% belongs to 20-30 years and 20% were declining in the age group of 40-50. 15% of respondents came under the age group over 50 years of age; only 5% belong to less than 20 years of age. The main occupation of the Toda family was livestock farming and related activities. 45% of respondents were participating in these activities, 15% of respondents were working in manufacturing of products from “Toda” embroidery, 25% were engaged in related agricultural activities, 13% were working for government and private agencies and only 2% of the respondents were unemployed and participating in various activities.

A study (Carolin Baby, & Susan Paul, 2017b) entitled “Adaptation of Toda Embroidery on Women’s Kurtis” aims to preserve Toda’s embroidery. Today, as everyone leads a crowded, comfortable life Clothing is the most crucial aspect. Curtis is favored by young people these days because it can be worn with Salwar, Jeans and even with a skirt. Therefore, an effort was made to adapt Toda embroidery designs to Curtis. It also aims to make the original art known to the outside world. The study found the importance of preserving this art. Experience on Toda embroidery adaptation on Curtis has given a trend how this can be brought to the fight of the world without changing the unique features. Products can easily be integrated in young fashion, thus toda embroidery can be enhanced.

A study (Carolin baby, & S.Kavitha, 2017) entitled "Development of linen and bamboo fabrics for the application of Toda embroidery“ aims to give new dimensions to this traditional embroidery. Toda Embroidery now found only in cotton shawls and some limited accessories. They use 2/2 weave basket structures to determine Spinning scale since an effort was made to develop linen and bamboo fabrics in a fake weave of Leno's apply Toda embroidery to clothes and accessories, and it also aims to make indigenous art known to outside the world and market this traditional craft, develop linen fabric in mock leno weaves, develop bamboo fabric in mock-leno weaves and test the basic parameters of the developed fabrics. The study found the importance of giving new dimensions to the traditional embroidery. Toda embroidery now only found in cotton shawls and some limited accessories since an effort has been taken to develop 100% linen and bamboo fabrics in mock-leno weave for the application of the Toda embroidery on apparels and accessories. The developed fabrics were undergone basic testing like GSM, EPP, PPI, tensile strength, tearing strength and abrasion resistance.

**Terminology of the Study**

**Twill Weave**

Twill weaving is characterized by diagonal lines on the facial or fabric rear. Three weft and three warp threads are minimal threads that is used for one repeat (Sennewald, Hoffmann & Kleicke, 2016).

The direction of the twill can be varied to create interesting effects such as broken twill, herringbone twill, pointed twill and etc. Fabrics made by this weave are characterized by high strength and compact weaving.

**Fabric structure**

The three main patterns of weaving are plain weaving, twill weaving (facing warp and weft) and satin weaving (satin facing warp and weft). All fundamental weave patterns are Characterized by their repeat unit, made up of the same number of yarns (Sennewald, Hoffmann & Kleicke, 2016).

In warp direction and in weft direction, As Mary M Brooks defined Twill weaves as recognition by the diagonal effect in the weave created by the weft passing over two warps, then under one; this is then repeated but stepped to one side. The angle of the twill can vary. Twill weaves may have either warps or wefts floating on the front of the fabric (Brooks, 2012).

**Basket weave**

Basket weaves is a variation of plain weave as it is made by having groups of two or more warp yarns interlaced in plain weave pattern.

Basket weave is a decorative weave and is made by relatively low yarns per inch and low twist yarns to increase the weave effect. These fabrics are not very stable since the yarns can move easily.

**Toda Embroidery**

Garima Sharma, Simmi Bhagat knew Toda embroidery as a hereditary craft which is marked by its geometric motifs and beautiful finish; it appears like a woven cloth though in the exact form it is embroidery that is performed on off-white cotton cloth with red and black woolen threads. This distinct style of embroidery is locally known as “Pugur” or “Pukhoor” (Sharma & Bhagat, 2018).

1.1. Hypothesis of the Study

- There is a relationship between the structural design of the fabric (twill and basket) and the decorative design of the toda (embroidery).
- The ability to benefit from the revival of Toda embroidery and document it by implementing fashion accessories.

1.2. Historical study

In India, Toda is found in the Nilgiri region of Tamilnadu state. The Toda is a little clan, which live on the detached Nilgiri level. The name “Toda” is said to have originated from the Kannada “tudi” or “top”, “Tudavar” or “Todavar” signifies "The individuals who are on the top”. The Toda generally lives in settlements, comprising of a few little covered houses, developed looking like half barrels and spread over the Nilgiris territories. They are principally steers herdsmen and exchange dairy items inside the Nilgiri locale. The language of Toda is too alluded to as “Toda” which is characterized by a Dravidian language. Toda is veggie lover and dairy item expended in all structures. Toda clan is additionally renowned for their special weaving called "Toda weaving" which is a less known art to the outside world (Baby & Paul, 2017a).

The Toda ladies, during their recreation time connect with themselves in indigenous weaving, where a coarse, unbleached hand woven white cotton material is woven with ‘Pukaor’ (theme) essentially in geometrical types of blossom, creature and normal items. The weaved shawl is classified as “Puthkuli” and they use steel needles and woolen threads, especially dark and red hues. The unbleached idea of hand woven white fabric helps in distinguishing the yarn measure (tally of threads) without any problem. The plan of ‘puthkuli’ is spread out in the middle of the stripes of dark and red. The examples of ‘puthkuli’ are weaved by the joined strategies for
darning and weaving. As the Toda weaving is woven out in a mind bogging way by methods for darning, checking of strings as well as yarn holes, the resultant plan develops as geometric structures at an easygoing look which makes it particular from different weavings.

There are many methods of creating textures in textiles by Yarn as we can weave with smooth and fine yarn made of Silk; we would create shiny fabric and we can also create textures by using different fabric structures like twill and basket weaves. It is crucial to take note of that the craftsmans do the weaving without moving the structure onto the texture surface and furthermore not alluding to any book. For them it is the co-appointment of psyche and hand. In this way, the Toda weaving seems hitting with its striking shading plan and complex mix of weaving and weaving. Youthful Toda young ladies acquire the art by watching the works done by the seniors of the clans. The themes are propelled commonly and day by day life. Different structures incorporate wild blossoms, mountains, and valleys (Baby & kavitha, 2017).

**Colors Used in Toda Embroidery**

Toda embroidery is finished with explicit hues. My top choice Shade of texture base off – white. Furthermore, once in a while it’s white. Essential the shades of the woolen threads are red and dark. Furthermore, once in a while blue. What's more, Customary Embroidery Toda No let any shading other than red and Dark. These hues are representative of their social convictions. White The standard alludes to immaculateness and guiltlessness, Red portrays puberty and youth Dark is an image of development (Sharma & Bhagat, 2018).

**The motifs**

Is motivated naturally and everyday life. The fundamental theme is the bison horn as the Todas revere wild oxen. Different plans incorporate wild blossoms, mountains, and valleys. To suit current taste and needs an assortment of things like cell phone pockets, table garments, scarf, shawl, drawstring handbag, pack, midriff coat and so on are likewise made (baby & paul, 2017a).

Toda embroidery is made on square paper and then executed on the cloth without transferring the design on the cloth and here are designs showing the shape of the Toda embroidery:

### 2. Experimental work

After looking at the Toda references and looking at the pictures of the designs of Toda was inspired by these pictures of Toda designs executed to make accessories and then drew on the square sheets in order to be executed on the accessories used; here are some real Toda designs:

![Fig 1. Toda designs. (Sharma & Bhagat, 2018).](image)

The following are the designs of the proposed toda to be implemented on the accessories:

**Design no. (1)**

![Fig 2. showing design no. (1).](image)

**Design no. (2)**

![Fig 3. showing design no. (2).](image)

**Design no. (3)**

![Fig 4. showing design no. (3).](image)

**Design no. (4)**

![Fig 5. showing design no. (4).](image)

**Design no. (5)**

![Fig 6. showing design no. (5).](image)

**Basket weave**

Basket weave variation of the plain weave is intriguing from the plan perspective, yet it isn't as strong as the normal rib variety.
Twill weave

Twill is the most sturdy everything being equal, it is portrayed by slanting lines running at edges changing between 15°-75°. In this weave the filling yarns are interweaved with the twists so as to frame inclining edges over the texture. If the grains run from upper option to bring down left; the weave is known as a right-hand twill (Z twill); if the ribs run from upper left to bring down right; the weave is known as a left-hand twill (S twill); if these diagonals, the ridges, run the two different ways in a similar fabric, the weave is a herringbone.

Results and Discussion

After studying textile compositions (twill and basket) and after preparing different designs of Toda, the researcher was able to implement a number of five fashion supplements consisting of fabric (twill and basket) and embroidery Toda. These products can be easily implemented with school and university students to implement accessories and jewelry as they do not require equipment.

Cotton threads were used in the work of textile compositions (twill and basket) and wool threads in Toda embroidery.

Dyeing

Natural dyes were used in cotton yarns dying used in the work of textile compositions such as (Hibiscus sabdarriffa L., Fluorescent brightening agents or indigo and Turmeric), turmeric was mixed with flower clothing to give green color, as Hibiscus sabdarriffa L was mixed with Fluorescent brightening agents or indigo to give violet color, Use turmeric to give yellow color, Use Fluorescent brightening agents or indigo to give light blue color.

Method of dyeing

First submerge fabric in a solution contains 1 part of vinegar to 4 parts medium, we use Fluorescent brightening agents (which absorbing light in the UV region of light and re-emitting it in the visible region, most usually as blue light) instead to get green color heat water, then bring it to boil to allow the dye to penetrate into fabric for 1 hour, through that add about 30 gram of natural dye powder.

The following are final products figures showing the shape of the final accessories after embroidery (Toda embroidery) and dyeing process:

Final Product (1)
Threads: cotton for fabric and wool for Toda
Color: natural dyes were used in cotton threads dying used in the work of textile composition such as turmeric was mixed with flower clothing to give green color.

Final Product (2)

Fig.13 Twill weave from fig. (12)

Fig 14. Final product (2) Toda embroidery design fig (3) with fig. (10) Herringbone Twill weave
Materials: Cotton threads were used in the work of textile composition (Herringbone Twill) and wool threads in Toda embroidery.

Fabric structure: Herringbone Twill weaves
Product Analysis: design no. (2) With the fabric structure fig. (10) Herringbone twill to give them harmony with each other and this through the harmony of the fabric structure of herringbone twill with the design toda used.

Color: Use of natural color for cotton threads

Final Product (3)

Fig 15. Basket weave from fig. (7)

Fig .16 Final product (3) Toda design fig (4) with fig. (7) Basket weave.
Materials: Cotton threads were used in the work of textile composition (basket) and wool threads in Toda embroidery

Fabric structure: basket weave
Product Analysis: design no. (3) With the fabric structure fig. (7) basket to give them a rhythm with each other.

Threads: cotton for fabric and wool for toda

Color: natural dyes were used in cotton threads dying used in the work of textile composition such as using flower clothes to give baby blue color.

Final Product (4)

Fig .17 Basket weave from fig. (6).

Fig .18 Final product (4) Toda design fig (5) with fig. (7) Basket.
Materials: Cotton threads were used in the work of textile composition (basket) and wool threads in Toda embroidery

Fabric structure: basket weave
Product Analysis: Toda design is used design no. (4) With the fabric structure shape (7) basket to give them a rhythm with each other and this through the rhythm of the fabric structure of basket with the design Toda used.

Threads: cotton for fabric and wool for Toda

Color: natural dyes were used in cotton threads dying used in the work of textile composition such as using turmeric to give yellow color.

Final Product (5)

Fig .19 Basket weave from fig. (7).
Materials: Cotton threads were used in the work of textile composition (basket) and wool threads in Toda embroidery. Fabric structure: basket weave.

Product analysis: Toda design is used design no. (5) with the fabric structure shape (6) basket to give them a rhythm with each other and an attractive aesthetic shape for accessories and come out fashionable in the design of accessories and Revival of Toda embroidery and make them known to the outside world, so it has been used Toda embroidery with fabric structures (herringbone twill and basket) to implement accessories.

Threads: cotton for fabric and wool for Toda

Color: natural dyes were used in cotton threads dying used in the work of textile composition such as Kardiya was mixed with flower clothes to give violet color.

4. Conclusion

Researchers try to focus on the idea that there is harmony between Toda Embroidery and Simple Fabrics Structure (twill and basket weaves). Researchers also try to ensure the idea that revival of Toda embroidery and document it by implementing fashion accessories as this research have the Potential to be a vital source suitable for the field of fashion design reflect loyalty to folk art.

5. Recommendations

- Reviving and documenting toda embroidery.
- Having interest in heritage and teaching stitches in ancient civilizations.
- Preservation of crafts with ancient heritage.

6. References