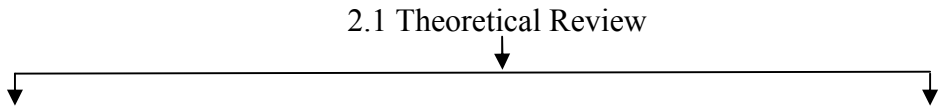
CHAPTER 2

REVIEW OF LITERATURE

A part of literature is a collection of published information and data relevant to study. Collected reviews were planned to provide an overview of sources that fit into the larger field of research. Exhaustive work has been done to get the latest literature from various libraries, museums and scholarly journals, books, newspaper, magazines and websites. The literature gathered for present investigation on "*Brocade and Chowkpurana: Craft and Art of Uttar pradesh- Prospect for their Sustainability"* was thoroughly reviewed and presented in this chapter under the following sub headings:

2.1 Theoretical Review



2.1.1 (A) Floor art of Uttar Pradesh
2.1.1.A.i History and origin of floor art
2.1.1.A.ii Raw materials of floor art
2.1.3.A.iii Design and motifs of floor art and their Symbolism
2.1.2 (B) Brocade craft of Uttar Pradesh
2.1.2.B.i Historical perspective and geographical location of Varanasi
2.1.2.B.ii Brocade craft of Varanasi
2.1.2.B.iii Process of manufacturing brocade
2.1.2.B.iv Crisis in handloom industry
2.1.3 Historical perspective and revival of traditional saris
2.1.4 Contemporary trends in brocade

2.2 Research related review:

2.2.1 Research related review on floor art and craft

2.1.1 History and origin of floor art

Pre-history furnishes a record of creative genius of the early human existence. It is available through the remains of pre-historic art and primitive cultures that are obtained through excavation of ancient historical sites (**Pandey and Bajpai, 1993)**. Pre-historic artefacts give an insight into the cultures of the past. It is not enough to know specimens of art of each age (**Prasad, 2005)**.

History and art are inter-related and they need no elaboration. But it is the irony of human history that historians have not paid adequate attention to discover the history of primitive art. In comparison to history and literature it does not have chronological record (**Chattopadhyay, 1975)**.

The word *'art'* is a derivation from Latin words *'ars'* and *'artis'* which is developed from Greek word 'aro', meaning 'to join', 'to compose', 'to fit', 'to create', 'to fabricate'**(Prasad, 2005)**. The definition of the word 'Art' itself is realised as a complex problem. Art is a manifestation or an expression of man's aesthetic sense or spiritual state (**Pandey and Bajpai, 1993).**

There seems to be a prevailing confusion whether to call all traditional art as folk art. The term 'folk art' or 'popular art' was proposed for all traditional arts at a committee meeting under the sponsorship of the UNESCO Paris in 1949 (Gerbrands 1957:21). But according to **Herta Haselberger**, the term was deemed unsuitable. She prefers to call then a 'Traditional arts' or "Ethnological art". She gives reasons for her preference of the term. One reason was that the term was used generally for everything that does not belong to high art or higher applied arts. The second reason was that many ethnological artists do not belong to strongly marked social strata. So what they create cannot be called "folk art". Under ethnological arts, she places tribal, traditional, native, indigenous and tourist art. **Ronström** discusses how folk art is socially valued in Europe. The walls of houses in southern Sweden were decorated with paintings during the eighteenth and nineteenth century. These paintings are compatible with aesthetics[5] and indicates four divisions of folklore studies, viz. (i) oral literature (ii) material culture (iii) social folk customs (iv) performing arts **Dorson's, R. M. (1982).**

O.P. Joshi cites Henry Glassier who distinguishes folk art from elite art on the basis of ideas that govern artists. He attributes conservative approach to folk artist and normative approach to popular and progressive elite artists. He says that folk artists are usually naïve, they do not represent single 'style' completely. In their art, a mixture of styles is noticed and the execution even is not perfect (**Joshi, 1976).** The themes based on folklore further control him in limiting his choice. His work is thereby characterised by controlling and repetition.

The history of Indian folk art can be traced in indirect references made in early writings. The earliest manifestations of folk art could be traced in archaeological findings although such findings may not be much of folk art material (**Chattopadhyay, 1975)**. J. Badar informs that since the *Harappa* and *Mohanjodaro* times, India possesses rich urban cultural grounds in which pictorial and sign language (hieroglyph) is found. These two make it possible to read and understand the many things about the civilization (**Badar, 2008)**. In India, the source of folk art was first explored by Jamini Roy, Nandlal Bose, Rabindranath Tagore and Amrita-Sher-Gil **(Dhamija, 1970)**. Earlier rock paintings were discovered in rock-shelters at several places and these rock-shelters were supposed to serve as housing to people of early times. Borrowing the term 'cave painting' from France, rock paintings are also called cave paintings. When houses of pre-historic people are observed it is found that the bigger shelters were mostly utilized mostly as art galleries. The painters paid full care to select areas to be painted. Mostly inner flat wall that opened to the sunlight was chosen for the purpose (**Pandey and Bajpai, 1993).**

Folk art is supposed to have gradually emerged from rock paintings. Many folk arts are generally recognized as an extension to the primitive art and it is widely known for its simple, bold, symbolic and elemental form (**Dhamija, 1970)**. For instance, the *Ramayana* describes such decoration at Sita's marriage. The Chola rulers in the south made extensive use of *kolam* as floor designs. It is amongst the most expressive forms of folk-arts. This type of decoration is by with different names in different parts of the country- *Alpana* in Bengal, *Aripana* in Bihar, *Mandana* in Rajasthan, *Rangoli* in Gujarat and Maharashtra, *Kolam'* in Tamilnadu, *Muggulu* in Andhra Pradesh and *Ossan* or *Jhunti* in Orissa and *Chowkpurana* in Uttar Pradesh except the Kumaon region (**Chattopadhyaya, 1963).** Variation is noticed in the types of painting that were made in different provinces. For example, Orissa's pat and Bengal's Kalighat pat were the earliest art-form to be discovered (**Joshi, 1976)**. It remains a rich source for themes for both eastern and western artist (**Chattopadhyaya, 1963)**.

Plate 2.1: Map of Uttar Pradesh

This type of decoration was done usually by women (**Chattopadhyay, 1975**). In India, Women are said to have kept folk art alive. J. *Dhamaji* narrates how women work on folk paintings. They work at commonplace and they are bold enough to experiment with new forms and new colours (**Dhamija, 1970**). Decoration of entrance is considered as essential to welcome a guest with grace and elegance. It serves as a symbol of good omen so it is associated with every phase of life (**Chattopadhyay, 1975**). They decorate their homes, paint walls and in their paintings, they work out patterns that they learnt from their earlier generations. While working their paintings on traditional patterns each woman adds a bit of herself and creates a world of her own imagination. She works on her dreams and gets sense of achievement through sublimation of her desire (**Joshi, 1976**). Kamladevi Chattopadhyay says that it is done at several parts in a house like the altar room where the family squats down to eat, or a place around a pot of the holy *tulsi* plant or a platform or the hollow which serves as mortar. The entrance of a house is decorated appropriately and designs and patterns are changed day to day (**Chattopadhyaya, 1963**). while making fresh wicks for lamps, or hanging garlands of mango leaves at the main doors of her house, a woman sings songs of love or parting and songs in praise of great heroes.

It marks spontaneous expression of people as they try to retain past experience of their community. It serves vital existence of the past in the present and also serves as valuable evidence to the life in the past. Its strength lies in an ability of its creator and his capability to visualise an object and present it realistically and to convey truly experiences of the generations that lived earlier to him (**Dhamija, 1970).** While working boldly on their current experiences, women do not lose contact with their age-old traditions. The subjects of their folk-paintings dwell usually on elemental consciousness of changing moods of seasons and man's intense response to it. Change

of seasons in a cycle of a year is marked with flowering in nature with a variety of fragrance and colours. Woman's creativity marks some kinds of flowering with a change of seasons. Festivals fall in seasons round a year and women free them pushing away mundane routine and keep them busy creating a happy new world of colours and designs (**Badar, 2008)**.

Joshi, O. P. points that folk art comes out as cultural sub-structure through culture of that particular group of people. Folk art is fused in all cultures through forms of folklore and folktale. These forms narrate stories. Over the time, narration becomes an ageless cultural trait. **Dorson's, R. M. (1982)** a methodological model of folklore phenomenon can be taken under consideration as under:

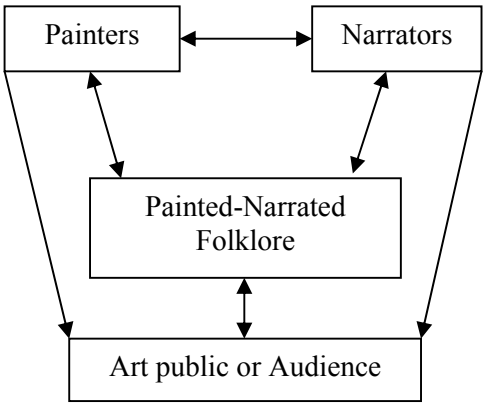


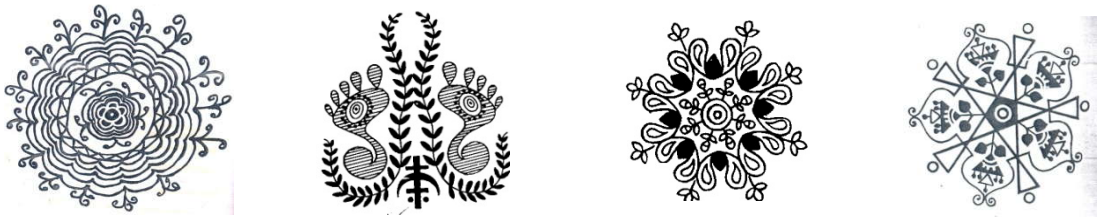
Figure 2.1: Methodological model of folklore

A phenomenon of painted and narrated folklore can be understood through interrelationship of painters, narrators and the public. At performance level a narrator has an important role to play, while at creative level, artist dominates. Folklore dominates all over. Joshi says that n**a**rrated folklore and painted folklore still remain important media of communication in rural Rajasthan. There has been a long tradition of professional narrators and singers of folklore and they use paintings and other artefacts as aids to their narration (**Joshi, 1976).** All religions mention that Lord almighty is the Creator and he created this universe and living beings in it for his pleasure (**Prasad, 2005)**.

Folk art has two aspects ritual and ceremonial. The various motifs/design done on ritualistic festival have significance behind it and ceremonial designs appear to be decorative and non-religious on purpose at a casual glance. In the ritualistic art, one

finds the *vedic* pantheon, regional deities and folk-gods, all represented together in one composition. On all ceremonial occasions, from birth to marriage, floral patterns are executed in white earth on the cowdung-finished ground. The side of openings in the walls are exclusively treated with geometrical and foliated patterns, but the door-lines are mostly treated with zigzag forms with a *swastika* or an *astadala* motif at the top (**Handa, 1975)**.

Sculptures and paintings made specifically for domestic or public festivals are totally disregarded once the purpose is over. They are laid aside or thrown away into a river or sea. Objects like murals and the paintings on mud floors made outside houses fade away in sunlight or washed away in rain. They lose value once the purpose gets over. They are not preserved for long. For such reasons, no long lasting evidence or monumental proof are available for folk art. Badar points that continuity of folk art is maintained usually by means of constant repetition and reproduction. This historical fact reveals that work of folk art in the present time may not form direct source of information for us. They can be regarded to some extent as indirect source of information on the state of folk art as it existed in earlier periods. Folk form of painting survives today in the form of rangoli (**Dhamija, 1970).**



a **b** **c** **d**

Figure 2.2: A few rangoli designs

2.1.2 Raw materials of floor art

2.1.2.i. Ingredients of floor art

2.1.2.ii Colour of floor art

2.1.2. i. Ingredients of Floor art

Ingredients of floor paintings were obtained usually from simple material in powder form. Floor designs were made with the simplest of materials, chiefly rice paste mixed with pigment or rock dust and some colours mixed with it. All such materials were available to everyone even if an individual was poor. Some of them were:

- *Gulal*
- *Kumkum*
- Petals of different flowers and leaves
- *Ochre*
- Rice paste
- Colored sawdust, small thin pieces of stones
- Grains, pulses, cereals
- Turmeric
- coal

2.1.2. iii Colour of floor art

George and Brown say that, it is common error to suppose that in Indian art designs always pale or neutral colours are used. It does not follow that in a scheme of colours adopted in a floral design leaves need to be green must look like origin at their real botanical existence. The most striking feature of Indian art can be said its masterly treatment of colour in which the response and balance are invariably complete (**Watts and Brown, 1979).**

Pandey and Bajpai give details on colour varieties of folk art. The prominent colour is red ranging from light red to dark red. Other colours are white, yellow, pink, black and green. These colours were also used by primitive painters. Mostly the *ochre,* which is available as a natural substance was especially useful to primitive people. In India, even today, the *ochre* is available as a natural substance. It is used for colouring walls of houses and also for other types of painting. This colour varies from chocolate brown to light red and orange to yellow (**Pandey and Bajpai, 1993)**.

2.1.3 Configuration and symbolism of floor art motifs

The word '*Symbol'* is derived from Greek '*Symbolan'*. Pandey and Bajpai inform that Indian symbols are more archaic in nature than those familiar to the West (**Pandey and Bajpai, 1993)**. The *Vedic* literature is full of references of symbolic nature that reveal the truth of cosmic realities. Folk art is a reservoir of styles, forms, and techniques for people who draw especially to communicate identity. **Ronström** that some common features of folk decoration may be determined from its appearance. This decoration has simple and bold outline and it rejects unnecessary

emphasis. Decorative representative of motifs and pattern is a common factor. Emphasis on rhythmic repetition of lines, figures, dots, motifs or designs are also seen regularly in almost all the folk and traditional art (**Ronström, 1994).**

The principal environmental forces are represented by *Surya, Indra, Agni*, *Vayu* and *Varuna* and they are given paramount status in the galaxy of deities. These divinities personify different elemental aspects of nature that also reflect man's mental state. The conception of *Deva* virtually stands for the transcendent, universal and immortal life (**Badar, 2008).**

Folk paintings were generally two dimensional and they are drawn in flat areas. Indians motifs fulfil a mere decorative or 'ornamental' purpose; but as a general rule, every design stands for a definite religious, symbolic, auspicious, ritualistic or other esoteric significance" (**Desai, 1982)** Symbolic motifs are divided into the following manners:

2.1.3.a Super human

2.1.3.b Lower Species and plants

- Animals, birds, fish and snakes
- Tree worship- Vanadeva, fertility, *Kalpavriksha* tree

2.1.3.a Super human

Pandey and Bajpai provide details about figures of Hindu deities as drawn in rock paintings that are discovered at several rock shelters. Hindu deities, especially of the *Shiva pantheon*, were drawn in the rock-shelters. At another place two headed *Durga* is killing a demon, the head of the demon is hanging in one of the hands of the deity. The figure of *Kartikeya* is shown riding a *peacock* or painted in between two *peacocks*. Similarly, the figure of *Ganesha* is shown in standing posture with his ride mouse. Most ancient people believed in hero-worshiping. The heroes brought valuable blessings to their *kinsmen*. Sometimes the heroes were treated as *Gods* and were worshiped (**Pandey and Bajpai, 1993)**.

Super human entities are recognized by its existence in the universe. They are invisible and may be present anywhere. They are supposed to possess powers and control all creatures in the universe. In all ancient cultures, super-natural powers,

deities, demons and heroes, dominated people's life and mind in one form or another. These super human entities are capable of improving or destroying one's condition any time (**Joshi, 1976)**.

2.1.3.b Lower Species and plants

In the Hindu mythology, lower too were accepted as forms of divine incarnation. For instance, a *fish* as *Lord Vishnu's* '*Mastyavatara*' and a *tortoise* as *Vishnu's 'Kurmavatara'* and lion as a part of the *Narasimha* (half-man and half lion). These are supposed to be the earliest incarnations of *Lord Vishnu*. Pandey and Bajpai view that worship of species remained an integral part of the Hindu religion. Likewise, certain animals and birds are supposed to be the rides (*Vahanas*) of deities like a *mouse* for *Ganesh*, *peacock for Kartikeya*, etc (**Badar, 2008)**.

In absence of deities, these animals symbolized them and were worshipped. As a result, lower creatures find important place in Indian art. In some designs, *fish*, *elephants, lion,* etc. are used for decorative purpose.

2.1.3.g Tree as Symbol

In the history of Indian art, the long tradition of tree worship can also be traced. The earliest portrayal of the tree worship is found in the seals of the Indus Valley. Since the antiquity, trees like *Pipla, Amla and Tulsi* are considered auspicious and worthy of worship. It was believed that these trees happen to be abodes for some deities. The idea of the *Kalpavriksha,* the wish-fulfilling tree is unique.

Pandey and Bajpai say that the scenes depicting tree-worship can be divided into four categories viz:

a. Tree with human worshippers
b. Tree associated with animals
c. Tree within the railing
d. Flowering tree with or without platforms

(Pandey and Bajpai, 1993).

2.1.3.h Religious symbols that are used in art:

Geometrical symbols are using to show presence of deities. Chattopadhyay describes a design that is drawn usually as a part of some Hindu ritual. For instance, a deity is represented by two triangles that are interlaced. Round them, there is a circle drawn and from it there emanates a design of sixteen lotus petals in triangular pattern.

The four corners of a diagram too have similar kind of triangles, but they are shaped like betel-leaves (**Chattopadhyay, 1975)**. Durga is the goddess of strength and her picture makes the central design. It is intricately drawn with the swastika mark and an outline of nine dots are made horizontally and that of nine dots vertically. The nine dots horizontally and vertically are supposed to invoke nine names of the goddess with which she is worshipped during nine days of the Navaratri festival that concludes with the Dusserah (**Joshi, 1976)**.

Sometimes, a stylized sun and moon are drawn on its border. From the periphery of a circle, rays of light are supposed to emanate. All these make a simple, but pretty design that marks a ceremony of a boy's initiation in to learning. The design is composed of seven stars within hexagons. These stars represent the *saptarshi,* seven rishis or sages who were most learned and holy men that are mentioned in the Hindu epics. The design is surrounded by floral decorations and usual motifs like a shell, a crown and borders are drawn as waves (**Chattopadhyay, 1975)**.

The designs are symbolic and basically common to the whole country like: geometrical patterns, with lines, dots, squares, circles, triangles; the Swastik, lotus, trident, fish, conch-shell, footprints (Charka supposed to be of Lord Krishna), creepers, leaves, trees, flowers, animals and anthropomorphic figures. These motifs are modified to fit in with the local images and rhythms. An important point is that the entire graph must be an unbroken line, with no gaps to be left anywhere between the line for evil spirits to enter. For religious purposes, several Yantra designs are used. These are supposed to influence the onlooker and infuse divine vibrations when watched intently (**Joshi, 1976)**.

2.1.3.c Religious symbols that are used in floor art:

- Swastika
- Sun, Moon and Stars
- Charkha
- Trident
- Nandipada
- Moon on hill
- Ujjain symbol
- Flower

- Palm of hand
- Temple
- Fire
- Mangala-ghata (Geometric and Non geometric symbols)
- Triangular Alpana patterns

Figure 2.3: Floor art motifs

Swastika

Figure 2.4: Swastika

The *Swastik* is a major symbol which can be noticed in artistic designs. It seems to have evolved from the cross, although its independent origin cannot be ruled out. In some rock-shelters, the *swastik* symbol is drawn side by side the cross figures (**Joshi, 1976)**.

OM:

Figure 2.5: Om

Om is the cosmic sound that has spiritual connotation. Its script form is a combination of three syllables – 'A', 'U', 'M'. It conveys a symbol that represents through these three syllables three phases of the cosmic cycle – the *Creation*, the *Sustenance* and the *Dissolution*. These three phases are condensed into single sound unit 'OUM'. (**Chattopadhyay, 1975)**.

Lotus

The motif of the lotus is associated with *Laxmi, Vishnu and Brahma.* The lotus signifies the universal life-force and the opening- up of human consciousness.

Surya

Surya, the sun-god is a giver of life to all beings. All life forces in the universe emanates from him. In floor decorations, the sun-god is also represented either in the form of a man, or as swirl that makes the central point of the universe (**Dhamija, 1970)**. It was practiced in different appellations and forms, such as solar (sas) disc, lotus etc. The warmth and productive power of sun has been considered life giving and beneficial to all beings as energy giver. The sun used to be considered as by primitive man as a friend and defender of humanity against evil (**Badar, 2008)**.

Peacock

Figure 2.6: Peacock's feather

The peacock has several associations. They are of immortality, love, courtship, fertility, royal pomp, war and protection. The peacock's alliance with fertility may also be partly derived by its reputation of generating spirit of youth and how it announces the coming of the rains with its dance (**Prasad, 2005)**.

Parrot

Parrot is not found in ancient, classical or even medieval Indian architecture, nor does it appear in the illustrations found in Jain manuscripts. Parrot serves as a symbolic function of a messenger to lovers and its associations is related to courtship, love and passion. These functions are often mentioned in folk art and literature of the western and northern India. Parrots are depicted usually with *Krishna* and *Radha* who make a pair of celebrated lovers who are depicted fondly in several Hindu scriptures. The parrot is also associated with *Kama*, the god of love and sexual desire. Parrot is also associated with *Saraswati*, Goddess of Knowledge presumably to stand in her cultural, artistic or musical aspects rather than for her intellectual expression (**Joshi, 1976)**.

2.1.4 Classification of Folk Rhymes

In folk tales and folk songs, gods come to earth to interact with human beings, birds and animals tell tales of ancient wisdom. All cultures are rooted in their folklore – in their folk songs, fables, folktales, folk paintings, folk crafts, folk dances, folk theatre, myths, legends, and grandmother's tales (K. **Satchidanandan and Cour, 2010).** Folk rhymes are not just for decorations. They are also expression of the spontaneous outpouring of religious sentiments of devotion. They serve like a ritual that inspires pleasing shapes. Women sing songs as they draw designs. Each song is related to the design they draw. Outer decoration may make an intimate part of inner life. It may suggest one's mood and mental condition.

Bhattacharya mentions a variety of folk rhymes that are popular among Indian people. Specifically people in rural areas are fond of folk songs of different types. Each type of folk songs is highly expressive of human and particularly women's sentiments. He listed those types as follow:

1. Lullaby and cradle songs
2. Feminine rhythms of marriage and other domestic functions
3. Rhythns used in rituals and folk-religious ceremonies
4. Rhythm used in games and leisure
5. Rhythm on weather, nature and animals
6. Historical rhythms

   Rhymes used in folktales, fairy tales etc .

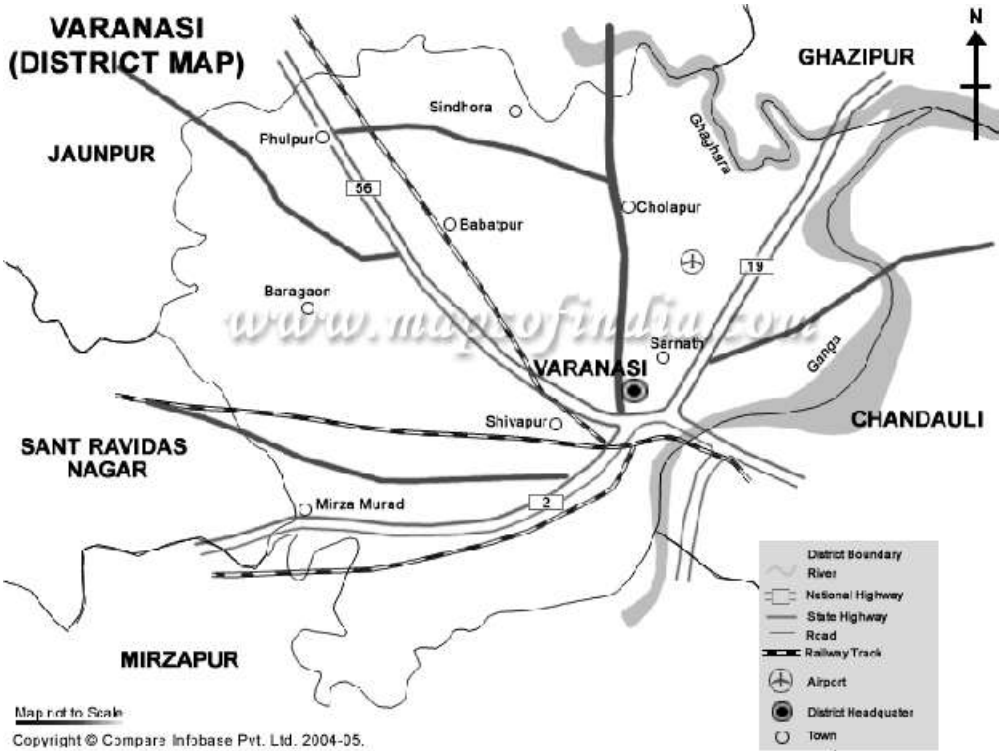
These folk rhymes are truly captured in folk-art designs that are shown as part of several floor-wall paintings.

Figure 2.7: Floor art narrating stories

2.1.2 B Brocade craft of Varanasi

2.1.2.B.i Historical perspective and geographical location of Varanasi

2.1.2.B.ii Brocade craft of Varanasi



Source: Geographical Indications, Journal No.292, March 19, 2009/ Phalguna 28, Saka 1930, Intellectual property rights building, GST Road Guindy, Chennai 600032, Goverbment of India.

Figure 2.8: Varanasi district map

2.1.2.B.i Historical perspective and geographical location of Varanasi

Ancient Sanskrit literature provides ample references describing the significance of the Varanasi city. It is the most important place of pilgrimage and holy centre of religious and cultural activities for several sects, like the *Vaishnavas*, the *Shaivas*, the *Tantriks*, the *Buddhists* and the *Jains* alike. It remains the most aspiring centre for the learned, saints and devotees who aspire for high learning, spiritual evolution, supernatural powers and also liberation or *moksha*. A Hindu aspiring for liberation would even aspire to die at *Kashi*; thus the city gained prominence on a religious and cultural map of India since the *Vedic* times. The *Vedas*, the *Upanishads* and the *Puranas* call the city as the place of lord *Shiva* and the highest seat of the *Shaivism* (**Lari, 2010)**.

The geographical detail of the city is available in Motichandra's book, "*Kashi ka Itihas"*. The Varanasi region of Uttar Pradesh is extended geographically from 24.56 to 25.35 degrees latitude and 81.14 to 83.24 degrees longitude. It has five regions that are located in different directions of the city. These are the districts of *Jaunpur* in the Northwest, *Ghazipur* in northeast, *Balia* in the east and *Mirzapur* in the south (**Mohanty, 1984).** In ancient times, Kashi and Varanasi were considered two separates names (**Krishna and Mookerjee, 1966).** The Varanasi region extends eighty-two miles from east to west in its length and fifty-eight miles from north to south in its width. The city enjoys natural surrounding and also protection with rivers on all its sides notably, the *Ganges* on the southeast, the *Varuna* on the northeast, the *Assi* on its western boundary, which is now visible in its reduced form of a ditch or nullah (**Pandeya, 1980).**

2.1.2.B.ii Brocade craft of Varanasi

No one can say with certainty when and where the weaving process actually began. Some may relate it to the relics of civilized life. It is thought that weaving was a part of developing civilizations. Because of perishable nature of textile goods, information found about the initial stages of weaving is rather sketchy. The craft of weaving developed in different part of the world simultaneously. Adanur further remarks, however, historical findings suggest that the Egyptian made woven fabrics some 6000 years ago and the Chinese made fine fabrics from silk over 4000 years ago (**Adanur, 2001).** It is now generally admitted that in the whole world that India was perhaps the first to adapt the art of weaving. Exuberant weaving in India dates back to even the *Vedic* period as there are several references to the beautiful woven fabrics as discovered in different *Vedas* (**Chattopadhyay, 1975).**

Banaras is a world-famous centre of hand-made textiles. Its principal products are the *zari* and brocades. These fabrics seem to have a long and continuous tradition in India's cultural history. In the Pali literature, Benaras is described as a reputed centre of textile manufacturing and that it is famous for its *Kasikuttama* and *Kasiya*. A variety of textile-patterns that prevailed during the Gupta period is revealed in the wall-paintings in the Ajanta caves. Damodar Gupta was a historian who lived in the eighth and ninth centuries A.D who describes Benaras in his *kuttanimatam,* as enjoying its full glory. He says that a wealthy person in the city is portrayed wearing a lower garment that was woven with gold thread, *kanakagarbhit*a (**Krishna and**

Mookerjee, 1966). Hindu devotee saint of India, *Kabir*, used to sing devotional songs and many of his bhajans contain ample reference to weaving to convey the philosophy of life. The major factors which contributed to the boost, was the East India Company when they shifted the trade centre from Gujarati to Bengal and elevated sericulture to handloom organised industry (**Dhamija, 1970)**.

Banaras fabrics gained world-wide fame, particular in the quality of *dhotis* and *dupattas* which were very expensive. Political disturbance from the eight century till the establishment of the Mughal Empire in A.D 1526 must have affected it to an extent. It was during King Akbar's region that the brocading fabric was on its peak due to the royal patronage. It is significant to note that in the sixteenth century the old designs abruptly came to an end, and the Persian motifs were introduced. Akbar established royal workshops and weavers worked together under one roof. They made garments of brocade and that were presented as gifts to foreigners and other countries. Many Gujarati and Agarwal business men (mahajans) who settled in Varanasi in the late eighteenth or nighteenth century also gave a boost to the textile industry (**Krishna and Mookerjee, 1966).**

Tarannum Fatma Lari furnishes more details about weavers of Benaras. There are two lines of weavers in Banaras: one line is called Banarsia, because these weavers are natives of Benaras, the second line is of Mauwal, who are the natives of Mau. Weavers who operate trade in the city hail almost exclusively from the Muslim community. Most of them belong to the *Julaha* community even if they prefer to call themselves '*Ansari'* which means a weaver. No one is really sure when the ancestors of the present weavers first settled here. They probably arrived in the city during migration over time and the migration occurred mostly from the Middle East and from parts of western India (**Lynton and Singh, 1995)**.

The brocade weaving of the *Benaras* is a cluster based business activity and it is scattered all over the *Benaras* district and also to some adjacent districts. There are production centres at other places in the district and they cannot be overlooked so far as the rate of production and employment is concerned. There are centres of the brocade weavings beyond Varanasi at palces like *Azamgarh, Mirzapur, Bhadohi* (Sant Ravidas Nagar), *Chandoli, Chunar and Chakia*. More than 80 percent of weavers belong to the Varanasi city and its adjacent area. Out of the different *Mohallas* (areas)

of the Varanasi, *Madanpura* and *Alaipur* are two chief areas in which the brocade weaving is conducted on very a large scale. It is believed that the brocade weaving in the city initially started with these two areas and subsequently it was adopted by some more families in other areas. There is a famous legend as to how Madanpura area came to be well known as an origin point of the Banaras brocades. It goes like that, seven Muslim families fled from central Asia of the western Iranian plateau and arrived and settled in the *Madanpura* area. Later, they were called '*Sat Gharav'*. They perhaps belonged to a group of *Kazzaz* weavers, who had migrated from west Asian weaving centres and were employed in the royal weaving workshops of the *Sultanate* King. It is believed that the weavers belonging to these seven families brought with them a special silk weaving technique for *Kazazi* and *Nassaji* fabrics from *Khajistan* in the western plateau of Iran (**Lari, 2010).**

2.1.2.B.iii Process of manufacturing brocade

2.1.2.B.iii.1 Sourcing of raw materials

2.1.2.B. iii.2 Process of Naksha making

2.1.2.B. iii.3 Variations of Loom and its parts

2.1.2.B. iii.4 Weaving techniques

2.1.2.B. iii .5 Types of brocade

2.1.2.B. iii.6 Design and motifs of brocade

2.1.2.B.iii.1 Sourcing of raw materials for brocade (Rai. A K, and Krishna.V. ,)

2.1.2.B.iii.1.a Variety of yarns used for brocade

2.1.2.B.iii.1.b Preparation of yarns

2.1.1.B.iii.1.c Chemical treatments of silk yarns

2.1.2.B.iii.1.a Variety of yarns used for brocade

Brocade is manufactured basically from silk yarn. *Malda*, a small town in Upper Bengal, was earlier the main production and supplying centre of silk that is used for Banaras brocades. Further, silk from *Kashmir* and *Japanese* silks too are much in use. Rai and Krishna talk about how silk yarn is obtained from raw silk. The treatment of Silk, especially for brocades requires more patience and labour. Raw silk is one form of silk as it is drawn on the reel before it undergoes several further processes.

2.1.2.B.iii.1.a.1 *Tanduri* yarn: This is a variety of silk that is imported from *Maldah* (Malda) and other places in Bengal, used for *kimkha,b* whereas its inferior qualities are used to make *pitambar,* loin of yellow colour. Varieties of *tanduri* threads known are as **(a)** *dotana* **(b)** *bharna avval* **(c)** *bharna* (**Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.a.2 *Banaks* yarn: This variety of silk is also called *subhani* or *angerzi*. It is thinner and finer than the *tanduri* varieties and is used for manufacturing soft fabrics such as turbans, handkerchiefs, etc (**Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.a.3 *Mukta* yarn: This is a coarse but enduring class of silk. It is used for making *kimkhab*. As a rule, silk used for *kimkhab* is coarser than other varieties, because thin fine silk would not resist heavy gold patterns on it **((Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.a.4 *Sandal* yarn: These are made of silk which have white and yellow varieties. Both the varieties are imported from Central Asia through *Bokhara* and the *Punjab* (**Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.a.5 Mulberry silk yarn: India is famous for indigenous silk-worms, viz., Mulberry, Tasar, Muga and the Eri Among them mulberry silk yarn is widely distributed. It is found in lower hill tracts of the great table-land of the Himalayas **(George and Brown, 1979).**

2.1.2.B.iii.1.a.6 Tussar: It is entirely a different class of silk. It is dark or fawn coloured stuff produced by wild Indian silk worms. Tussar textiles are usually of a dull or greyish straw colour and stiff in texture **(George and Brown, 1979).**

2.1.2.B.iii.1.a.7 Chinia: It is a twisted thread usually composed of four to twelve strands used for warp threads of flowered fabrics.

2.1.2.B.iii.1.a.8 Katan: These are two strands lightly twisted together and used for the warp threads.

2.1.2.B.iii.1.a.9 Pat: These are four to twelve strands doubled together but not twisted and used for the weft of thick Fabrics.

2.1.2.B.iii.1.a.10 Waste silk: After reeling the mulberry silk yarn, a small quantity of cocoon is left in the fluffy fibre which cannot be reeled. This is known as waste-silk or *chasm*. It is boiled with certain ingredients to remove mucilaginous matter or gets dissolved (**Mookerjee, 1966).**

2.1.2.B.iii.1.a.11 Kalabattu: It means gold or silver threads. The K*alabattun* is largely used in the *kimkhab* or other brocade manufactures of Banaras. It consumes good quantity of silk. Rai and Krishna speak about its importance that if silk is the backbone of the industry, design is its structure, and *Kalabattun* is its life and soul. *Kalabattun* has varieties like *Rupa Kalabattun* and *sona Kalabattun***.** Mookerjee informs that the *Kalabattun* is still extensively manufactured in Banaras (**Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.b Preparation of yarns The hanks of the thread, as bought from the market require reeling and checking for its uniformity in thickness and roundness for further operation. Mookherjee gives the details of this process. It is first mounted on a *pareta* which has large and simple cylindrical framework of bamboo. Then it is transferred to the reeling machine '*charkha'* similar to common spinning-wheel. The reeling and checking is done generally by women and they are paid for the job. The threads are further processed with the following four instruments:

2.1.2.B.iii.1.b.1 *Natawa*

2.1.2.B.iii.1.b.2 *Pareta*

2.1.2.B.iii.1.b.3 *Khali*

2.1.2.B.iii.1.b.4 *Tagh*

Plate 2.2: Preparation of warp yarns
Source: http://en.wikipedia.org/wiki/Loom

2.1.2.B.iii.1.b.1 *Natawa*: The thread is transferred from the reel to *natawa* which is a bamboo frame with a central axis. The *natawa*-frame presents a series of four or eight planes enclosing a nearly cylindrical space. In this way, the whole thread takes a shape of a hank or skein which is then transferred to an instrument called *pareta* (**Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.b.2 ***Pareta*** consists of a central bar. It is made of a slender bamboo which forms the axis. Round its upper end there is a framework of bamboo sticks that are supported with spokes. These spokes slope upwards assemble together and thus form a cone. The cone rotates as the axis rotates. The whole thing looks like a long-handle and distended ladies' umbrella. The spokes on the side of the cones are detachable. Once the hank is slipped on the cone, the longer end of the axle is vertically attached in a socket of lump of clay on the ground (**George and Brown, 1979).**

2.1.2.B.iii.1.b.3 ***Khali*** is an instrument that is useful for intermediate steps between two processes like twisting silk threads. Threads are transferred from the reel of the *charkha* on to a *khali* or they are retransferred from *khali* to the *pareta*. The different processes like twisting a thread on itself or throwing and doubling it requires a frequent change of thread from one instrument to another. This change cannot be carried out without the intervention of the *khali* (**Krishna and Mookerjee, 1966).**

2.1.2.B.iii.1.b.4 ***Tagh*** Silk gives a slight twist in its passage from the *pareta* to the *charkha*. Further twist is applied to warp threads by means of an apparatus, *Tagh*. The threads are taken out after reeling and they are wound round a *khali* (**Krishna and Mookerjee, 1966).**

2.1.1.B.iii.1.c Chemical treatments of silk yarns: This treatment includes the process like:

2.1.1.B.iii.1.c.1 Degumming

2.1.1.B.iii.1.c.2 Bleaching

2.1.1.B.iii.1.c.3 Dyeing

2.1.1.B.iii.1.c.1 Degumming: Once the yarn is processed duly in respect of throwing, coupling, twisting, it undergoes further treatment. The silk-thread in its basic composition contains gum-like substance (*sericin*) of yellowish colour. It also has to be fitted for penetration of colour or dye in the process of dyeing. So this gum-like material (*sericin*) is removed by boiling silk yarn in soap-water (**Krishna and Mookerjee, 1966).**

2.1.1.B.iii.1.c.2 Bleaching: It is then steeped and washed in tepid water for two to three times. This operation is called *nikhar* or *kharna* (*bleaching* and *degumming*). The process of bleaching was earlier cumbersome and slow (**Krishna and Mookerjee, 1966).**

2.1.1. B.iii.1.c.3 Dyeing: Initially indigenous dyes obtained from flowers, leaves, barks, roots and minerals were extensively used to give fast colours. Later aniline dyes were inducted for variety and saving time.

2.1.2.B. iii.2 Process of Naksha making

The makers and designers have an important role to play in the manufacturing process of the Banarasi cloth. The markers draw designs on paper and while doing they modify existing design patterns, imitate the current ones and customise designs in view of the tastes and needs of customers. Then they pass the design to a designer who is known as 'nakshband' **Lari (2010).** *Naksha* may be defined as the indigenous equipment to weave complicated designs on handlooms. It takes a position of jacquard modern weaving. The whole idea is to weave one complete design in a group of threads and duplicate it on a fabric wherever it is required by attaching theses threads to the loom and to the threads of the fabric in a suitable way.

Jayakar writes **(1967)-** the thread used for the *naksha* was a strong multi-strand known as "*pindi*" made locally and calculated depending on the size of the design, types of yarn used and number of threads required per-inch of the cloth. The *Naksha* is supported vertically and threads are tied individually or in group of 4, 8 etc. The *naksha* making frame is made in different sizes to suit the *naksha* maker, who sits on the floor and works on it. The traced design is divided into definite equal parts. For, each part of the design the *naksha* maker knows how many threads are to be lifted or lowered. Weaves like twill and satin are also introduced by the *naksha* maker. A loop is made in every *kheva* (weft) threads so that it can be supported by a string later on. The loom is first set up by tying the *pagia* threads. Two men are required to do this work. When all the *naksha* threads are tied to the corresponding *paggia* thread the loom is ready to start the work of weaving **(Jayakar, 1967)**

Winding the Naksha string on a *parita*

1. Warping the *Narba* string
2. Putting a lease thread
3. Tying up the *Nakha* threads in the middle
4. Tying up the *Naksha* vertically
5. The *Naksha*-making frame
6. Fixing the bamboo stick

7. Arranging the *naksha* threads

8. Tying up of *kheva* threads

9. Placing Tracing

10. Looping the *kheva*

11. Introducing a separate thread (*Nothia*)

12. Setting up the *naksha* on the loom

13. Tagging the *Nakshas*

14. Duplicating the *Nakshas*

2.1.2.B. iii.2.a Master Weaver

Bhagavatula, S. (2010) carried out a study called *"The working of entrepreneurs in a competitive low technology industry: The case of master weavers in the handloom industry"*. The result showed that master weaver has a position above weavers to control the process and move it to accomplishment for meeting desired results and expected targets. Since weaving is not a single activity but a process that involves number of activities, coordination among these activities is a crucial requirement for productive results and in this sense master weaver's role counts crucial to its success. The diagram given below lays down a chart of master weavers activities involved in the process of weaving.

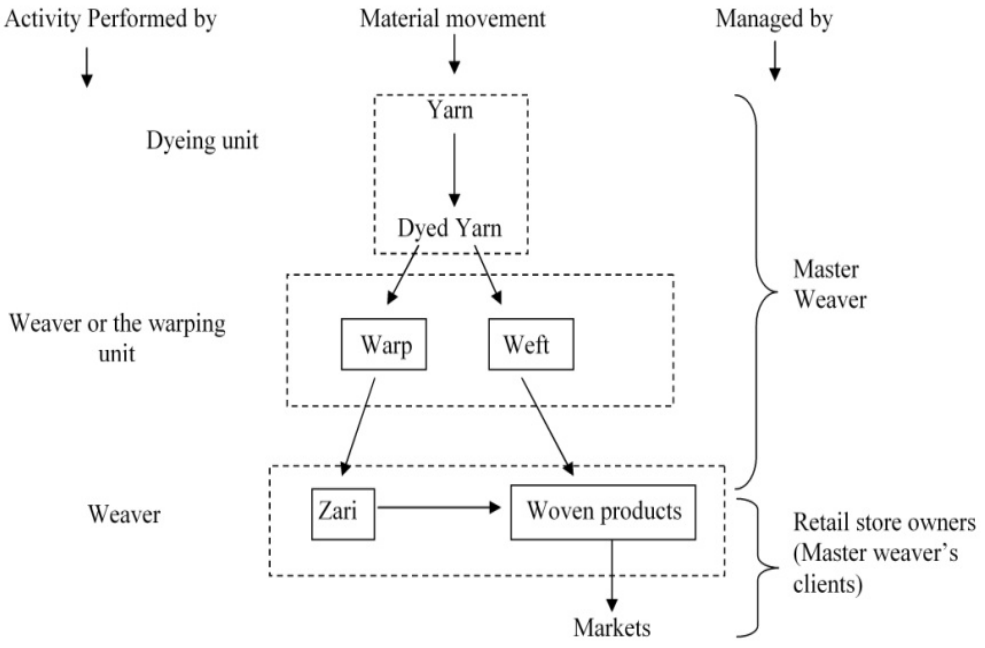


Figure 2.9: Handloom products value chain

2.1.2.B. iii.2.b Designers and Grapher of Varanasi

A study conducted called *"Diagnostic Study of Handloom Silk Cluster Varanasi (Uttar Pradesh"* revealed that designs developed during the last few years show rapid change. On an average, life of a saree design earlier was two years. Today it has come down to a shorter span of just six months. However, design development has insignificant share in the product cost of one saree. Hence, it does not have decisive impact on its pricing and profitability. The investigator further added that there were freelance designers who get input from master weavers or traders. The estimate number of designers varies from 100 to 300. A designer undergoes training-cum-apprenticeship before he branches out on his own with his entrepreneurship. The period of training extends up to eight years. It is nearly a fulltime programme and so in this sense a trainee has to drop his study at school. In anticipation of demands in the markets, he develops his designs. For such a bold step, he incurs risk and ultimately its cost is not paid for. On an average, a designer takes one day to develop a design. In a year, he develops around 50 to 75 designs. He shares these designs with his prospective buyers. When a design has fine tuned it is the chosen one based on feedback. He gets on an average Rs.300 for such a selected design, **www.msmefoundation.org/folder/diagnostic/98.doc.**

2.1.2.B. iii.2.c Punch card cutters or Design Assemblers

Since the introduction of the Jacquard machines, punch card cutters are included in a list of craftsmen engaged in textile manufacturing. The credit of using this machine goes to the craftsmen of *Alaipura*. The Jacquard machines are presently used in all production centres in Benaras, as they save time and labour both and thus prove economical. The process of punchcard-cutting requires utmost care and precision. Workers of all age groups are engaged in this task. They copy designs that are drawn on graph papers and for it they perforate holes on small rectangular cardboard plates with hammer and nail. One perforated hole relates to one single line woven on the loom. The colour scheme as shown on a graph paper is adopted on the setting of warp and weft and it is transferred into design. Once the cards are perforated on the basis on a design, the leaf cutter puts serial numbers on them. The number of the cards goes according to a design. It means that the cards are cut according to the number of lines woven to complete a design. Generally these people belong to lower and backward classes and lack any kind of higher education. Their wages are decided upon number of shapes they cut into designs (**Lari, 2010).**

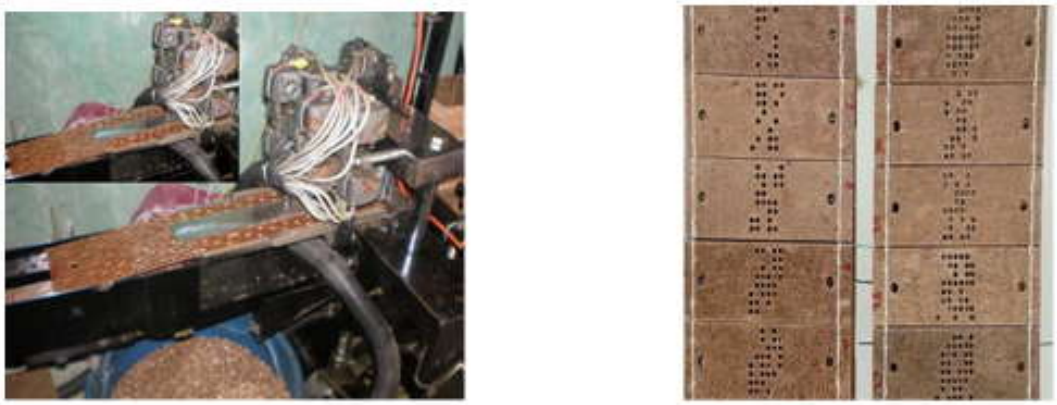


Plate 2.3: Cutting punch card form machine

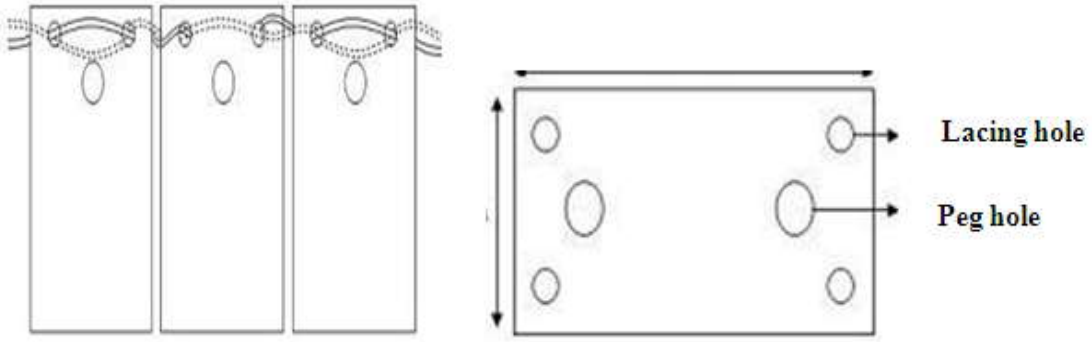


Figure 2.10: Lacing of punch card

2.1.2.B. iii.3 Variations of Loom and its parts

The Webster Dictionary defines a loom as "a frame or machine for interweaving yarn or threads into a fabric, the operation being performed by laying lengthwise a series called the warp and weaving in across this other called the weft, or filling". The Banarasi cloth is generally woven on handlooms. However, during the last three decades, the uses of power-looms have been started for the job of weaving cloth with a simple design. Irrespective of the type of loom, the main components remains the same (**George and Brown, 1979).**

2.1.2.B. iii.3.a Instruments used in loom

2.1.2.B. iii.3.b Types of loom

2.1.2.B. iii.3.a Instruments used in loom

The instruments used in weaving cloth make a long list. It goes as under:

Loom (2) *Katiya* (hook) (3) Kakahi (comb) (4) paper (5) *peg* (6) *khadi* (handloom) (7) gridanak (a type of iron rod) (8) *gathua* (a group of besar*)* (9) *spinning-wheel* (10) *chakri* (a *type of bobbin*) (11) *chhuchhi* (a kind of narrow valve) (12) Jacquard machine (13) Jala (threads in the jacquard) (14) *joti* (twisted string) (15) *stick* (16) string (17) weaver's shuttle (18) *tur* (a cloth beam roller) (19) *tagla* (board made of bamboo) (20) tiri (iron spoke) (21) cardboard (22) *natawa* (made of bamboo for the weft), (23) *nari* (empty vessel for filling yarn) (24) *naka* (a type of nylon and cotton thred) (25) *bethan* (markin cloth) (26) machine (27) *matti* (stick made of bamboo) (28) *makdi* (a Part of the loom), (29) *mandkha* (wooden frame) (30) rubber (31) *lappa* (wooden or bamboo stick) (32) *naulakha* (a type of brick) (33) bobbin (34) *pawasar* (wooden board) (35) *pagiya* (string), (36) *fanni* (reed) (37) *bamboo* (38) *besar* (type of wooden stick used as harness) (39) *Sirki* (40) *sakada* (made of bamboo), (41) *sua* (long needle), (42) *sidhi* (kind of ladder) (43) *hattha* (handle) (44) warp (45) weft (46) *bilni* (iron cable), (47) *tekwa* (type of iron needle) (48) *bhanjani* (bamboo stick) (49) *panik* (two flexible bamboo stick) (50) *chepni* (made of sheesham wood) (51) *kunch* (brush) (52) *khandhi* (made of bamboo) (53) *pitni* (kind of hammer) (54) *mohra* (polish work) (55) *pauri* (a part of loom) (**Lari, 2010).**

2.1.2.B. iii.3.b Types of loom

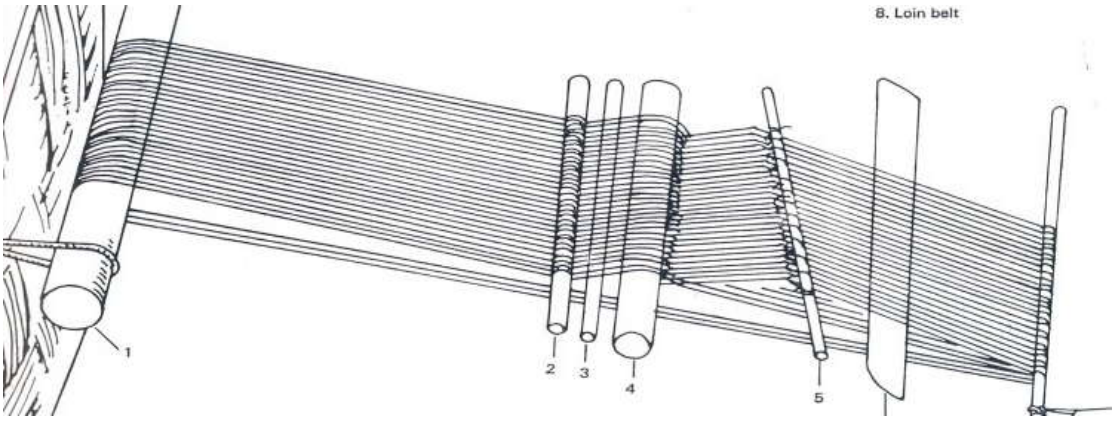


Figure 2.11: Warping preparation on loom
Source: (Mary E. Black O.T.R, 1976)

2.1.2.B. iii.3.b.i Back strap Weaver

The back strap weaver works the warp as the thread stretches from a bar at a fixed spot, such as a tree, to a belt at the weaver's waist. By leaning back, the weaver uses her own weight to create or release tension on the warp threads, while deploying rigid heddles to open and close the sheds. A rigid heddle consists of alternating slots and vertical laths (each with a hole drilled in the middle) through which the warp threads pass (http://www.ehow.com).

2.1.2.B. iii.3.b.ii Draw loom

A draw loom is a hand-loom for weaving figured cloth. In a draw loom, a "figure harness" is used to control each warp thread separately. A draw loom requires two operators, the weaver and an assistant called a "draw boy" to manage the figure harness (http://www.ehow.com).

2.1.2.B. iii.3.b.iii Inkle Weaving

Inkle looms are simple wooden looms characterized by dowels to hold the warp threads. These looms can be large or small but are typically reserved for weaving slim fabrics like belts (http://www.ehow.com).

2.1.2.B. iii.3.b.iv Tablet or Card Weaving

In tablet weaving (also known as card weaving), the weaver rotates tablets or cards, rather than lifting and lowering heddles, to create the shed for the weft to pass through; this process results in a twined material rather than the typical warp-and-weft fabric. Like inkle weaving, tablet weaving is restricted to narrow strips of fabric, such as belts, straps, ribbons or trims (http://en.wikipedia.org/wiki/Loom).

2.1.2.B. iii.3.b.v Pig Cage Loom

Zhuang brocade from China's Guangxi province is traditionally woven on the "pig cage" loom, although it can be accomplished on ordinary looms, (http://www.ehow.com).

2.1.2.B. iii.3.b.vi Foot-and hand-treadle looms

The treadle loom is most frequently used by modern weavers. It consists of an upright frame from which 2 to 16 harnesses with heddles are hung from its overhead beam. Threads are threaded through the heddles in predetermined sequence according to plain or pattern weaving. The harnesses are manipulated with either root or hand treadles, levers, pedals or ropes **(Mary E. Black O.T.R, 1976).**

2.1.2.B. iii.3.b.v Fly-Shuttle Looms

Fly-shuttle looms are similar in construction to the floor looms. But the only exception is that the shuttle runs in a 'shuttle race' along the lower beam of the beater. The shuttle is propelled very rapidly back and forth through the shed by the automatic action of two raw-hide pick tied to an overhead rope. This loom is generally found in the 2-harness types **(Mary E. Black O.T.R, 1976).**

2.1.2.B. iii.3.vi Pit loom

The loom is placed over a pit dug into the ground, so the weaver can sit on the edge of pit and be on the same plane as the loom (http://gactaern.org). The weaver sits with his legs in the pit and there are two pedals which manually open the warp threads (longitudinal threads) allowing the weft shuttle (transverse threads) to pass along between the weave. This type of loom leaves the weavers' hands free to pass the weft shuttle from side to side and to compress the weaving as they go (http://umbvsweaving.com/the-art-of-weaving).

Plate 2.4: Pit loom
Source: http://en.wikipedia.org/wiki/Loom

2.1.2.B. iii.3.b.vii Powerloom

A power loom is a mechanized tool that used to create textiles much more quickly than with hand-driven looms. This improvement helped the power loom become one of the defining machines of the industrial revolution (http://www.wisegeek.com/what-is-a-power-loom.htm).

2.1.2.B. iii.4 Weaving techniques

The techniques of *Fekwa*, *Katrawan* and *Kardhwan* are frequently used in supplementary extra weft figuring in Varanasi brocades. They can be explained in the following manner:

2.1.2.B. iii.4.a *Fekwa*

When the extra threads are picked from one border of fabric to the other, the threads appear on its surface in the design portion and they float on its back in the remaining portion. If fabric is somewhat thick, the floats on the back of fabric are allowed to remain in the fabric. Technically this design is called 'fekwa'. Thus, in 'Fekwa' or 'Fekva' design, one can see the long floats at the back of fabric (http://mytextilenotes.blogspot.com).

2.1.2.B. iii.4.b *Katrawan* or *Katravan*

If fabric is comparatively fine and the spaces between the figures are required to appear transparent, the floats on the back of fabric at such spaces are cut off. In such fabrics, care is taken to see that the extra figuring threads are properly bound (interlaced) with the ground warp near the edges of the figures, so that when the floats on the back of the fabric are cut off, the remaining portion of the threads forming figures do not become loose. The design is technically called 'Katrawan' design (http://mytextilenotes.blogspot.com).

2.1.2.B. iii.4.c *Kardhwan* Designs

Figures are brought by extra weft of *tillies* (spools), each work is restricted on the warp threads in the corresponding place and they are manipulated from one side to the other. In that case, no float appears between figures on the back of cloth. This design is technically called 'kardhwan' design (http://mytextilenotes.blogspot.com).

2.1.2.B. iii.4.d *Gathua*

Weavers work with the treadles which are in the hollow beneath. The weaver with his feet moves the treadles (*paosar*) by means of footboards and *paonris*. He alternately raises one of these and depresses the other by a motion of the foot. As the *baisars*, treadles and threads of warp are all synchronized with each alternate motion of the foot; a different set of warp threads is raised and depressed. Thus, a "shed" is formed through which the shuttle is smartly passed from side to side with the hand by the weaver.

2.1.2.B. iii .6 Types of Varanasi brocade (George and Brown, 1979)

Varanasi weavers manufactured various types of brocade:

2.1.2.B. iii .6. a Zari Brocades or *Kinkhabs*
2.1.2.B. iii .6. b *Pot Than or Baftas*
2.1.2.B. iii .6. c *Amru Brocades*
2.1.2.B. iii .6. d *Sangi*
2.1.2.B. iii .6.e *Gulbadan*
2.1.2.B. iii .6.f *Mashru*
2.1.2.B. iii .6.g *Ghatta* or *Satinette*
2.1.2.B. iii .6.h *Abrawans* or Gauzes or Silk Muslin (*Tanzeb*)
2.1.2.B. iii .6.i Banaras Silk *Jamdani*
2.1.2.B. iii .6.j *Jangla* Saree
2.1.2.B. iii .6.k Jamwar *Tanchoi* Saree
2.1.2.B. iii .6.l *Tissue* Saree
2.1.2.B. iii .6.m Cutwork
2.1.2.B. iii .6.n *Butidar*

2.1.2.B.iii.6.a Zari Brocades or *Kinkhabs*: In this type of brocade the pattern is made in zari or gold/silver thread. The *Kimkhab* is a heavy gilt brocade, in which zari work is visible more than the underlying silk. The zari comprises more than 50 percent of the surface (**Rajanikant, Nayak, Rout and Shaikh, 2007).**

2.1.2.B. iii .6.b *Pot Than* or *Baftas:* This is in reality a form of *Kinkhabs* in which the textile is more lightly woven and gold and silver wires are more sparingly used. In fact, the separation between the *Kinkhabs*, *Baftas*, *Amru* and even the gold and silk gauzes or *Abrawans* is one purely and simply in degree (**George and Brown, 1979).**

2.1.2.B. iii .6.c Amru Brocades: They are manufactured for people whose cannot afford *Kinkhabs* or *Baftas* garments. In Europe, *Amru* brocade would be called brocades, but a line of separation between the *Himrus* of the Deccan and the *Amrus* of Benaras is extremely narrow. The warp and the weft in *Himrus* are specially prepared by cottons. Many of the *Amrus* produced in Benaras have cotton or *tasar* silk warp and the special flower weft in a fine quality (**Rajanikant, Nayak, Rout and Shaikh, 2007).**

2.1.2.B.iii.6.c *Sangi*: It is a class of brocades that is considered as the speciality of *Azamgarh* even if the material is produced mostly in *Jalaun* and *Allahabad* and to some extent in Benaras as well. It has wavy pattern (*khanjari*) that is worked across the *sangi* silks **(George and Brown, 1979).**

2.1.2.B.iii.6.d *Gulbadan*: It is a light texture of fabrics. It has a pattern much like that in *sangi*. The only difference is that it is woven within the texture and not thrown on the surface as it is made of pure silk which is largely used by Hindus and it is used by the Muslims if the material is a mixture of silk and cotton (**George and Brown, 1979).**

2.1.2.B.iii.6.e *Mashru:* The word *Mashru* means "*permitten*". It has a reference to observance (*fatwa*) issued by the community. *Mashru* work is expensive, but it is the most beautiful of all the forms of *Khanjari*. It is largely produced at Benares, Azamgarh and Jalaun (**George and Brown, 1979).**

2.1.2.B.iii.6.f *Ghatta* or *Satinette*: This type of fabric is a speciality of several towns in the Azamgarh district. Mr. Yusuf Ali derives the name "*ghatta*" from the Persian "*ghattidan*" which means to roll. It is done by passing cloth between hot rollers. The material is a mix of cotton and silk, but it is so calendared that the silk shows entirely on the upper surface (**George and Brown, 1979).**

2.1.2.B.iii.6.g *'Cut-work brocade'* It is a brocade in which the 'transparent silk fabric has supplementary-weft patterning woven in heavier, thicker yarns than the ground. Each motif is not separately woven in it with hand. The threads extend the entire width of the fabric and leave floats at the backs that are cut away after weaving'.

(ii) ***Tarbana*** (woven water) or '*tissue'* brocade are the brocades in which the weft threads of the ground are zari, not silk and thus it creates a metallic sheen. Several other weights and shades of supplementary-weft zari are used to create the patterning and it creates extremely rich textile.

(iii) Some of the very exquisite weaves are accomplished with only gold threads and without using silk. Designs are created with gold embellishments on silver background. Such a pattern of using gold and silver threads together is locally called *Ganga-Jamuna*. The name refers to the two sacred rivers of India (**Rajanikant, Nayak, Rout and Shaikh, 2007).**

2.1.2.B. iii.7 Design and motifs of brocade

Brocade art is extensively practised all over India but the spiritual home of Indian brocades still remains as Varanasi. A large variety of patterns are closely blended into harmonious and pleasing combinations. While brocades of western India and the Deccan retained a few traditional and Arabic forms, the Banaras craftsman experimented with various patterns and evolved sophisticated forms (**Dhamija, 1970).** The patterns selected for the purpose are often merely geometrical**.** The cloth shows all-over gold brocade work without the use of silk threads as extra weft. It generally carries patterns of *jal* (trellis) enclosing stylized *buta* or generally circular pattern known as *ashrafi*. Besides these, there are the more complicated spread-over patterns of hunting scenes. Such a scene may depict a creeper falling down and it intermingles with animals, birds and elephants (with howdahs) carrying a hunting party. These designs are accomplished with the skill of a designer since they can successfully camouflage the repeat in the patterns. The large and small floral designs are called *boota* and *booti* respectively (**Krishna and Mookerjee, 1966).** The style of brocade knows as *butidar* shows the strong influence of a continuing tradition in the pattern development of Banaras brocades. It has been popular since the time of the *Mughals*. Generally, flowers are displayed with leaves, stems and the surrounding bushes. The artisans do endeavours to present the floral design in natural surrounding so that natural feeling can be evoked. Floral designs show different patterns like:

Chanda (Circular shapes) 2. Fardi Booti 3. Paan Booti 4. Pankha Booti 5. Tikoni Booti 6. Ashrafi booti 7. Makhi booti 8. Kairee booti 9. Chunari booti 10. Chand-tara booti 11. Mukuta Boota 12. Lateefa Boota 13. Bachcha Booti 14. Tara booti 15. Chakkar booti 16. Chonga booti 17. Kante dar booti 18. Booti jhardar 19. Boota-chasdar 20. Guldawdi or satdana booti 21. Naudana booti 22. Jahaj booti 23. Bela booti 24. Genda booti 25. Chiditan booti 26. Hathi booti 27. Chauphulia booti 28. Maulsari booti 29. Khajoor talwar booti 30. Jaldana booti 31. Chameli booti 32. Gulab boot (**Lari, 2010).**

2.1.2.B. iii.7.a Stripes:

Designs of stripes show different patterns and each pattern is known with a different name. Watts George and Percy Brown describe these patterns in their descriptive study, "Arts and Crafts of India" (1979). When longitudinal pattern is done in the warp the fabric is called *Doriya*. When it goes across the width or in the weft, it is called *Salaidar*. When lines are made in both the warp and weft, the pattern becomes a check-*charkhana.* When lines go diagonal, the fabric designed is called as *Are-doriya*. When lines go wavy or zig-zag, the fabric is *khanjaredar*. When a series of small lozenge-shaped figures are formed by diagonal lines, the pattern is called *Ilayecha.* When the lozenges are formed enclosing a dot often in gold wire, the pattern is called *Bulbul-chashm*. Double lines with a running scroll or geometric pattern in between are called a *mothra*. The term *bel* is the generic term for borders, but it is more applicable to running or floral scrolls. The term *aribel* is applied to borders that have wavy or zig-zag form. A running pattern of flower or leaves that is made all over the cloth and this design is called *phulwar*. Lastly, when gold and silver is used as the field texture and the floral ornamentation are woven in coloured silks (such as in the *kinkhabs*), such design is known as *minatashi* (**George and Brown, 1979).**

Motifs:

Figure 2.12: Traditional Banaras brocade motifs (Buta and Buti)

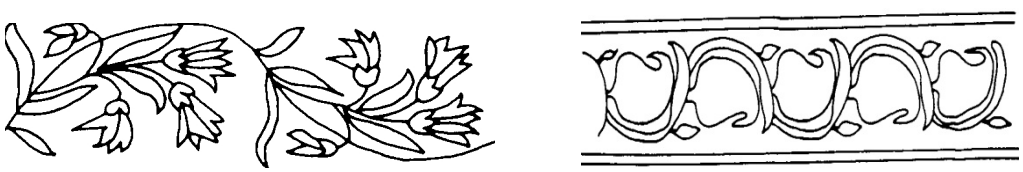


Figure 2.13: Traditional Banaras brocade bel

2.1.2.B.iv Crisis in handloom industry

The silk weaving of Varanasi earlier provided livelihoods for about 700,000 people. This has now been reduced to about 2, 50,000. On average, a weaver earns just Rs 50-60 a day. Approximately 50,000 people are out of work in Varanasi because of globalisation and the "China" factor due to the large scale of copying and sales of Benarasi saris manufacturer by Surat mills in polyester yarn (http://www.craftrevival.org/VaranasiCrisis/DiscussionPoints.htm).

The main reasons for the handloom crisis are:

1. Fluctuating costs of Chinese silk yarn, controlled by local cartels;
2. Computerised power looms replacing handlooms;
3. Lack of regular electricity, leaving work sheds in darkness;
4. Bad sewerage systems causing gutters to overflow and flood the pit loom areas;
5. A change in local and global market preferences, leaving sari-width looms idle;
6. Dumping of cheap foreign textiles, encroaching on markets for textiles made by semi-skilled weavers (http://indianexpress.com).

2.1.3 Historical perspective and revival of traditional saris:

Linda Lynton and *Sanjay Singh's* opinions about the origin of the sari are that it is so obscure and nothing can be said about it with certainty as how it became a usual garment. Two figures of Ajanta Caves in western Maharastra, can be taken as representatives of women wearing saris in the *kachcha* style (**Katiyar, 2009).**

It is difficult to establish the exact origin of the sari, on the basis of evidence that is available to us. However, its origin and history can be linked to the advent of the art of cotton weaving and its manifestation in the range of textile products that originally evolved in the Indian subcontinent on the basis of the earliest finds (**Lynton and Singh, 1995).**

When a woman wears a saree she acquires gaiety with special sparkle and charm. Various functions and types of saris includes youthful sari, married sari, working sari. Most Indians have their first encounter with the sari as an infant, before the time of memory when their mother used it as a multi-purpose nursing tool. When breast feeding they cradle the baby within it, veiling the observation from outside world, and use the cloth top to wipe the surplus milk from baby lips. The pallu retains this close association with the breast (**Banerjee and Miller, 2003).**

The sari is the quintessential female garment in India. Though women wear saris in many other countries too, especially in Bangladesh, Nepal and Sri Lanka. Sari comes in all shapes sizes and texture thus multiplicity of traditional saris arouses various aspirations and with it the still sari enjoys a good demand among women today (**Katiyar, 2009).**

2. 1. 3. I What kind of garment is the Sari?

2. 1. 3. Ii A Sari's Dimensions

2. 1. 3. Iii The Basic Draping Styles

2. 1. 3. Iv Colour Symbolism

2. 1. 3. I What kind of garment is the Sari?

Its surface is clearly divided into three distinct parts- the body, the border and the pallav. The body covers the central portion of the sari that is draped around by the person and usually pleated in front of the naval. The remaining few yards of the fabric goes across the upper part of the body to cover at least one shoulder and sometimes to veil the head or the face. In some regions, a woman traditionally wears a fabric of shorter length (**Katiyar, 2009).**

3. 1. 3. Ii A Sari's Dimensions

The sari is a length of cloth measuring in length about 4 to 8 meters and in width about 120 centimetres which is equal to some 13 to 26 feet in length and some 4 feet in width (**Banerjee and Miller, 2003).** The actual length and width of the sari varies from region to region. A good quality sari is made of expensive fabric, like dense silk or fine cotton muslin. In the south, for instance, many poor and low-caste or tribal women and some conservative orthodox Brahmins too still wear saris of a size of 7 to 9 meters (23 to 30 feet). These saris are draped in various trouser-like forms as it goes with the tradition in their communities.

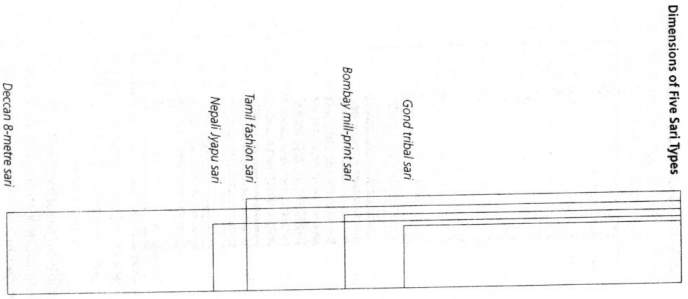


Figure 2.14: Dimensions of the five type of saris

2. 1.3. iii The Basic Draping Styles

The *nivy* style of draping a sari is now so common among urban middle-class of Indian women. Different regional, ethnic and tribal communities all have their own sari styles and draping methods.

Figure 2.15: Draping style of *Seedha* Palla sari (Lynton and Singh, 1995)

Figure 2.16: Draping style of Ulta Palla sari (Lynton and Singh, 1995)

Elaborating on the illustrations, Linda Lynton and Sanjay K. Singh explain that northern styles have skirt pleats in the front and a free end draped around the back and over the front in such a way that the end piece covers a wearer's breasts. There are many variations on this style with *Gujarati*, *Bihar* and *Orissan* versions etc. The *Bengali* drape style blends elements of both the northern and Dravidian styles. The popularity of the northern draping style is revealed with a fact that even today in the east north Indian state of Bihar they are called style *sidha* which means correct, straight, good draping style. Against it, there is the *nivi* style that is called *ulta* which means reverse, opposite, bad style (**Katiyar, 2009).**

2. 1. 3. iv Colour Symbolism

The symbolic use of colour has played vital part in the life of Indian women since *Vedic* times. Use of colours represents spiritual and emotional state of woman's mood. It is also found in paintings of the classical period and also in traditional dramas (**Lynton and Singh, 1995).**

2. 1. 3. Iv.1 White: This colour is so predominant among all seven basic colours that traditionally it is called the king of colours. Symbolically it stands for purity, chastity, cleanliness and grace. Brahmins are traditionally associated with white colour. Any form of dyeing is regarded as impure. A cloth in white is often worn on rituals and sacred occasions, such as special *pujas*. In most regions, white colour is never admissible for cloths to be worn during weddings and on auspicious occasions. The reason is that white colour is also regarded as a colour of mourning. That is why traditionally only widows in north India wear white saris without any coloured embellishments (**Lynton and Singh, 1995).**

2.1.3.iv.2 Red: Red have several implications related to feminine, emotional, sexual and fertility-related expressions. Therefore, red is a colour chosen for cloths that are worn commonly by brides of all castes at wedding in the north and also by *Brahmin* brides in the south (**Katiyar, 2009).**

2.1.3.iv.3 Blue: This is the colour popularly related to the low-caste people in Hindu society who are known as '*Shudras'*. High-caste Hindu people avoid this colour. The reason for their avoidance is that fermentation process is used to make the indigo colour and traditionally it is regarded as ritually impure. Among upper caste Hindus, in fact both the blue and the black colours are both considered inauspicious. They

reflect sorrow and ill omen. Today under an impact of western fashion, blue is preferred as a widely worn colour. Today, many older women and widows tend to wear modern saris with muted tones of blue, black and even green rather that the more traditional pure white sari (**Katiyar, 2009).**

2.1.3.iv.4 Yellow: The yellow colour is traditionally regarded as colour of religion and asceticism. Saffron yellow or orange are the colours of *Saddhus'* cloths and other individuals who relinquish castes and families to lead a spiritual life with an aim to release them from the endless circle of rebirths. Hence, in Hindus, wedding ceremony in the eastern region begins usually with the '*Haldi'* ritual in which haldi (turmeric) is applied on the bride's body as lotion to ritually purify her body. During and after this ritual she wears a yellow sari (**Lynton and Singh, 1995).**

2.1.4 Cotemporary trends in Varanasi brocade

2.1.4.a Newer trends in design and motifs

2.1.4.b Product diversification

2.1.4.c Development in machinery

2.1.4.d Contemporary trend in brocade saree

2.1.4.a Newer trends in design and motifs

Researcher observed and analyzed that designs/motifs of brocade has changed over the years. The earlier brocade artist followed the pattern illustration of flora-and fauna in tune with highly aesthetic temper of the period. They presented the life in motion and decorative flowers, animals and diverse patterns of great artistic value profusely enriched the Indian art tradition that continued for centuries. From the advent of mughal the old designs came to an abrupt end. Persian motifs adapted to Indian taste were introduced. This was facilitated by the positive political relationship of the Mughals with Persia from the time of *Humayun*. The Persian brocades were copies in the mughal workshops, sometimes they are so nearly identical that it is almost impossible to distinguish between the both and their copies can be seen at the Bharat Kala Bhawan in Varanasi. One of the adaptations from the Persian prototype, which became the speciality of Varanasi, was Latifa Buti. It is the outcome fusion of Persian and Indian designs. A fabric manufacturer and exporter informed that "traditional motifs like paisley (keri) have been patent to Vanarasi fabric since time immemorial. Any innovation that happened till now remained confined to these motifs. But now with global trends creeping in pan cultural patterns it is fast getting

visible. Now it's the *skull* and *bats* the most popular figures of *gothic* patterns that will mostly be foud on fabrics and has a clientele in European countries **Anony[5] (2008, April 20)**.

Muqueen Akhtar (fabric manufacturer) stated that animal designs are quite in range after visualizing its saleability in the international market. Newer designs are being picked up as the traditional *polka* dots in zari seem to have taken a backseat in favour of geometrical shapes to match the international standards of design. Earlier there was uniformity in shape and size of *polka dots* used in fabrics, but now they are mixing and matching it with various other shapes to give it different looks. Curtains in sheer fabric like organza silk have motifs like Damask, which is an Italian design while Chinese lotus, French and Japanese flowers and even Christmas motifs have found place in the upholstery **Agarwal (2008, December 18).**

2.1.4.b Product diversification

More variety in garment has also been experimented with various cuts. All garments like-skirts, camisoles, trouser, kimono, kaftan on banarsi fabrics have western cut. There was also a demand of skirts in georgettes, organza silk, spaghetti and halter neck tops[53] western coats and wrap around skirts in Banarasi cotton silk **Anony[7] (2010, September 5)**. The seductive clothing that was being used by celebrities in order to project narrow waist and heavier busts is now quite a range in the world. ***Suman Bharti*** who specialises in corsets and runs a studio in London is a regular buyer of brocade from Varanasi. ***Vaibhav Kapor*** (silk manufacturer) said that they produce and export only silk curtains, fabrics, catering largely to the European countries after visualizing the need of the hour. People from Italy love the silk fabric from Varanasi **Agarwal (2008, December 18)** who specialise in silk scarves and stoles said that "though we are also into manufacture ring of silk fabric, there is a demand of scarves too in the international market **Anony[7] (2010, September 5).**

Indians might have faced racial discrimination in Australia, but Indian Textiles especially Varanasi fabric and its rich traditional home décor designer patterns have found several takers among the Aussies **Anony[3] (2010, July 12).** Varanasi exporter mention that on Australia there is a class of customers who are keen in buying products that claim to be original brocade and has a rich history **Anony[4] (2008, July 12).** Even though the times have change, people today want more and more original items, even in home décor products varies among sexes and age groups, For instance,

the Gay community prefers wild colours; while elderly prefer light and sober colours. Varanasi brocade textile are manufactured in three categories of home décor including table covers, window sets comprising curtain, cushions and bolsters and bedding consisting of a bed cover, four cushions and two pillows **Anony[2] (2008, August 14)**. Chinese product being inexpensive is still sold in bulk in the international market. But those for whom quality is a priority, prefer Indian products especially Varanasi silk and brocade **Anony[4] (2008, July 12).**

2.1.4.c Development in machinery

Varanasi now has access to rapier looms (auto loom), computer embroidery machines, digital printing, electronic thread-cutting machines, latest yarn dyeing machines, heavy duty sintering machines and never ending fleet of power looms for basic weaving **Pathak, R. (2009, March 31)**.

2.1.4.d Contemporary trends in brocade saree

Young manufacturers and designers like Ritu kumar, Tarun Talhani and sabya sachi Mukherjee are being involved in producing designer brocade sarees **Anony[6] (2012, April 20).** Many popular designers show cased Banarsi silk fabric and designs and teamed them with other modern blends. Varanasi fabric was used in the films *Jodha Akbar, Umrao Jaan, Devdas* and other bollywood flicks **Anony[7] (2010, September 5).** Vidhya Balan wore cotton silk sarees with antique zari in the movie *Ishqiyan* which was a Banarasi one. Handloom sarees have made a comeback in the Indian fashion world, giving a much-needed impetus to Banarasi saree weavers and manufacturers **Mukherjee, S. (2010, March 1).**

Jagdish Shah (a prominent saree manufacturer of the city and president of Banaras Vastra Udhyog sangha Manufacturer and exporter) said that an exclusive range of designer Banarasi handloom sarees which we has to discontinue due to lack of demand some years ago. Now we have revived our exclusive brand. Our major clientele in the last one year includes Celebrities like Kirron Kher, Nandita das, Jaya Bachhan and Anuradha Paudwal, **Agarwal (2008, December 18).** Nataasha Dubliish Delhi-based designer has launched a collection called 'Jamboree' inspired from ethnic of India. She stated that despite the new contemporary sarees with a fusion of cuts, fabrics and embroidery, the sarees were in gauzy nets with opulent velvet borders and a traditional banarasi brocade choli, *Chanderi* were combined with *georgetts* **Goswami (April 7, 2013).**

2.2 Research related review of craft and folk art

2.2.1 Studies on sustainability of folk art

2.2.2 Studies on sustainability of craft

2.2.3 Studies on handloom weavers and textiles

2.2.4 Studies on contemporary trends in textiles

2.2.5 Researches on contribution of technology in sustaining of art & craft

Harsma, **K., (2010)** gives his analysis in *"Crossing the Divide between Art and Craft"*. The researcher revealed that crafts served a functional purpose whereas art was "creative and original". Craft has become an arduous and ultimately unnecessary task. They were dependent on each other and the line between the two was under constant change within the artistic community. Artists were battling the stigma that craft was low art and high art was only achieved by artwork that fell within painting or sculpture.

2.2.1 Research on sustainability of folk art

Sangani, J., and Baruah, S., (2010) studied the "*Marvel* of *Mata ni Pachedi"* which a religious art *communiqué* used by the Baghri tribe of Gujarat. The aim of the paper was to learn in depth about *Mata ni Pachedi* techniques with emphasis on the crafts and process which go into the creation and explore the development of innovative products. Findings showed that *Mata ni Pachedi*, a textile art, was successfully transferred into fashion garments and accessories. Few limitations were documented and the use of different kind of fabrics was restricted as there were chances of the print to spread. Usually fabrics like cotton, silk and khadi were most preferable. It was also time consuming, as there were many processes involved before the actual product was ready.

Jain, S., (1994) carried out an investigation called "*Folklore paintings of Rajasthan"* particularly of *Phad and Pichhavai"*. The objective was to study the state of Phad and Pichhavai paintings with reference to its processes, techniques, colours and the motifs used. For phad paintings, the study was limited to a single family of twenty five artisans in Shahpura and Bhilwara. Solely engaged in this art form, a

member of the family Shri Lal joshi, has achieved recognition with the national award of master craftsman for the year 1984. 100 artisans in Nathadwara were engaged in pichhavai. Due to similar techniques and raw material, the study was limited to twenty five artisans chosen randomly. The sample was selected without any restriction on the age, sex or socio-economic status. The methodology adopted for the study was, the oral interviews using an open-ended questionnaire and non-participant observation. The result revealed that both folklore paintings depict distinctive style of paintings though the processing techniques were quite similar. Phad was primarily a narrative art on the other hand a pichhavai painting was non-narrative (temple hangings). Both forms had religious depictions. The impact of modernisation on both art forms can be seen in miniatures of the paintings.

2.2.2 Research on sustainability of craft

Peterson, L., carried out a research called *"Craft Economics- A quiet renaissance"*. The researcher reported that in the last 10 years, efforts have been made in more and more countries to revive traditional crafts and to create new handicraft skills. The reasons for this crafts renaissance involve a realization by governments that unique cultures and their crafts were often the main tourism attractions, which increases foreign exchange earnings. Coupled to this was the failure of large and medium-scale industries to provide enough employment for growing populations however, the alternative employment-creating potential of small labour-intensive crafts enterprises that use local technologies and materials.

Niek, B., Agnes, D., and Ocon, K., (2010) did an investigation called *"A Tourism Value Chain Sub Sector Analysis for handicrafts in the Volta Region"*. The objective was to analyse the importance of craft making to the livelihoods of craft artisans and how this relates to their position in the value chains. Finding showed that the Volta Region has a reputation for the variety and quality of its crafts, but the tourism potential of crafts and related out of pocket spending on souvenirs too often remains largely untapped. In activities like weaving children were involved in production at a very young age, occasionally leading to situations that resemble child labour.

Caroline, R. M., whose research topic called *"Characteristics of world trade in crafts"* showed that the hope for dealing with global development in the 21st

century lies not with industrial but sustainable development that focuses on cultural heritage. Crafts utilize traditional skills and raw materials and require less capital investment than other sectors. An excellent means for income generation and economic development, crafts can be used both for primary employment, especially in rural areas and for secondary employment during off-seasons in the agricultural cycle. By creating productive employment opportunities crafts enhance more equitable income distribution. Crafts reduce migration to cities, significantly helping women through increased income and status.

Dokter, A., (2010) carried out a research called *"Kpando Woodcarvers and Potters: A baseline study and value chain analysis of craft artisans in kpando district in Ghana"*. The result revealed that there were few differences in the socio-economic profile between the carvers and the potters, which may be related to gender. The women were older in age, had less education, lived in houses of poor quality and had a considerable lower income from pottery. The group of potters were more homogenous than the carvers where large differences existed within the group concerning age, education, income, housing and productivity levels.

Sujata. (2009) conducted a study called *"Renaissance of quilt (kaudi) making and Value addition"* with an aim to document the history and techniques involved in quilting and to explore the possibility of producing value added articles using quilting technique. Results showed that Quilt (*Kaudi*) making was an age old tradition that was continued by the *Gondhali* women to earn livelihood. They had vivid subsidiary occupations for instance, tattooing, cleaning of eyes and vending vessels in exchange of old rags. Blocks, mosaics and crazy patchworks were used in combination with quilting technique to design different value added utility articles viz., baby quilts, table runners, table mats and magazine holders.

Demrcan, R. D. (2005) conducted a study called *"Craft culture as the source of inspiration for industrial design in Turkey"*. The aim of the study was to analyze existing craft related products and conditions of craft production. The findings of the study revealed that the design of traditional objects as 'transferring tools' become crucial for successful conduction. They all were transforming by different reasons and towards various directions such as changing needs of market, changing social

conditions and 'designer's choice' as well. These factors' influences were relative, time dependant and inevitably political and ideological issues.

Collins, E. J. T. (2004) conducted an investigation called *"Crafts in the English Countryside: Towards a Future"*. The objectives of the research was to assess the present position, future prospects and sustainability over the longer term of the rural crafts in England and to make recommendations as to policy, with special reference to training. It examined, *inter alia,* the demand for and supply of products and services; market trends; the size and structure of the workforce; manpower and skill shortages; training provision; business trends; threats and opportunities. The findings revealed that the crafts were a small sector when compared with agriculture, but in contrast, the contribution of the crafts to rural income and employment was growing.

Thomas, A., (2010) carried out a study called "*The role of design in enabling sustainability in small scale textile manufacturing: A case study of small scale textile manufacture in Wales*". The paper examined the relationship between design and sustainability in a policy context of sustainable development. The study was carried out in Wales, part of the UK. Wales had a textile industry with many different constituents, from individual craft manufacture to industrialised production and was related to a historical wool industry which made use of local sheep's wool. Cloth, garments and household items were still made using weaving techniques and knitting albeit in largely electrically powered factories and mills. Contemporary designs were introduced to selected industries woollen products and consumer preferences on colour, design/motifs and techniques were taken. Finding showed that tourist were fascinated by the innovative and attractive designs therefore the investigator recommended that innovative designs should be introduced from time to time in textile industry.

Dung, K. N., (2003) carried out an investigation called *"Safeguarding of Intangible Cultural Heritage and Community Involvement In the recent years in Vietnam".* The objective of the project was to help the villagers to produce their textiles in order to improve their living standards, enhance the local socio-economy and political stabilization and consequently, preserve their cultural values in line with the policies of the government. The result showed crafts were passed down from generation to generation in the family. But this limits creativity in making patterns and designs. Finding further showed that earlier craft technique existed only in the

family, but today Photo-Voice Project changed this old tradition of the village by helping villagers to collect information from different resources. Little by little they shared and discussed together to make it common knowledge of the whole community.

Suich, H., and Murphy, C., (2002) conducted a study called *"Crafty women: The livelihood impact of craft income in Caprivi"*. The main aim of the paper was the development of marketing programme for weaving craft. Findings showed that the amount of money generally generated by individual women from basket production was often small compared to other income sources. Basket production and selling was a supplementary activity that was time-consuming and brings low returns.

Chawla, A., (1992) explored *"A Study on Chanduakam of Pipli - Status of Pipli's Craft"*. The objective was to improve the status of Pipli's craft. The study revealed that Pipli craftsmen were so simple and non-professional therefore the craft has not yet been granted the recognition that it deserves. Both the Hindu and Muslim communities were actively involved in the work with not much difference in the finished products. The appliqué work has undergone substantial change from traditional designs to the existing modern ones in order to suit commercial demands in the present time. In earlier days, the work used to be carried out with just a needle and thread.

2.2.3 Research on handloom weavers and textiles

Bhaskar, R.V. (2013) conducted an investigation called *"Plight of the Handloom Weavers Leading to Suicides"*. The objective of the paper was to study different types of weavers and analyze the reason of weavers committing suicide. The result showed that Andhra Pradesh weavers were facing severe livelihood crisis because of adverse government policies, globalization and changing socio economic conditions. From the year 2000 to 2003 the Andhra Pradesh state has witnessed 500 deaths of weavers out of which some were due to starvation and the remaining were suicide. Majority of the weavers ended their lives due to various problems they came across in their profession. The survey revealed that the major problem suffered by majority of weavers from all categories that stood rank I, in the areas of study is lack of Govt. assistance, the second major problem suffered by many weavers of all categories was due to power loom products, followed by creditor, lack of financial

support and finally lack of marketing facilities forces as the third major problem faced by the weavers.

Bhaskar, R.V. (2013) carried out a study called *"Present Conditions and Problems of Handloom Weavers in Kovur Mandal, Nellore District of Andhra Pradesh"*. The result showed that female members of the weavers were mainly engaged in pre-weaving activities, agricultural labour and cloth marketing. The weavers of the *Mandal* belong to five major communities which were included in the list of backward classes in Andhra Pradesh. Theses caste was *Devanga*, *Thogata, Pattusali,* and *Kaikala* and the weavers belong to the socially and economically weaker sections of the *mandal* population. Products were woven according to their caste as majority of *Devanga* caste weavers confined to three product groups viz., cotton saris, polyester saris, and silk saris. *Thogata* caste was confined to two product groups viz., Polyster saris and silk saris. *Padmasali* caste had chosen only cotton saris. Weavers were involved in weaving from six in the morning to ten in the night.

Maiwada, S. Dutsenwai, S.A. and Waziri, M.Y. (2012) conducted a study called *"Cultural Industries and Wealth Creation: The Case of Traditional Textile Industry in Nigeria"* the result showed that there were different types of hand woven fabrics produced in *Ogun* State, their names were determined by the type and colour of thread used for the weaving. The most common names of these fabrics were *Etu*, *Alari*, *Sanyan*, *Fuu* and *Waka*. *Etu* for instance, was indigo-dyed while *Alari* was wine-coloured. *Sanyan* was naturally cream or light brownish coloured. These fabrics were massively produced and widely used both in the state and beyond. They were used for different purposes ranging from day to day, ceremonial as well as religious. Further analysis showed that this industry equally meets the fundamental goals of wealth creation and income generation.

Bhadouria, S. P. (2012) carried out a study called *"Handloom industry on the way of distress: An empirical study of the major problems"*. The findings revealed that the major problem faced by handloom weavers was the fluctuation in the price of hank yarn. A greater role was played by organisations such as National Handloom Development Corporation (NHDC), State level Handloom Development Corporation (SHDC) which could ensure supply of hand yarn and other inputs of handloom weavers at reasonable and stable prices. The other problem expressed were high price of looms, delayed payment and high transport cost.

Patil, N. U. (2012) conducted a study called *"Role of Handloom Industry in India"*. The result showed that a more significant attribute of the industry was the highly skewed geographical distribution of the workforce in a few major states. In fact, more than half the workforce was concentrated in just two states. One state alone, namely Assam in the north-east, is to be accounted. The second heaviest concentration was in West Bengal in the eastern region. The next two important handloom hubs were in the southern states of Tamil Nadu and Andhra Pradesh. In Uttar Pradesh, the concentration of handloom workers was 5.6% of the total population.

Phukan, R, (2012) carried out a research called *"Handloom weaving in Assam: Problems and prospects"*. The result showed that weavers produced "Saree" in limited quantity though it has wider market potentials. This indicates that product diversification has not yet taken place among the handloom weavers of Assam. The actual production of a loom per annum varies depending upon the quality of fabrics, design woven and regularity of the weavers in attending the looms. It was also found that most of the weavers did not take any formal training for learning the production process as they learn on-the-job while observing and helping the older family members as well as master weavers. But few of them took formal training course at the Government centres for both skilled and ordinary weaving styles. Moreover, in traditional non-commercial areas it was observed that the weavers preferred throw shuttle looms with low productivity which was easier to operate and also cheap.

Jain, R. and Goswami, R (2010) investigated a study called *"Livelihood through handloom weaving"* where findings showed that various products made by handloom weavers of Jaipur district can be classified in two categories. (1) Products for government department were *Durrie, Patti Gauge*, *bandage*, *Bed sheet* and Suiting material. (2) Products for consumers in the open market. There were two channels in the open market. One was through weavers selling in the retail shops and other is participation in national & international fairs through RRBSS. The weavers produced various home linens such as *Khes*, *Durries*, *Gamcha*, Bed sheet, *Grey* material and *Dusters*. The monthly income of weavers ranged between Rs.2000-2500. The infrastructure was age old & hence the products reflected the same. Thus, there was an urgent need to work on the improvement of the tools and infrastructure provided to the weavers.

Goswami, R. and Jain, R. (2010) carried out an investigation called *"Creating sustainability in handloom industry"* with an aim to analyze the organisations working for the upliftment of weavers and highlighted the certain problems faced by the weavers. The result depicted that the grey material was the most popular product woven by 91% societies; the second most woven product was durries in Jaipur districts. These were followed by *dusters*, *durries*, *bed sheet*, *khes gamcha*, *towels*, *table cover*, *table mat* and *gauge* bandage woven by less than half of the cooperatives. Weavers were only weaving age old patterns, the reason was found that there was no innovation as regards to design and product variation. The study revealed that majority of weavers was weaving on two harness loom which was the basic loom. Thus the share of sales from exhibitions and retail decreased as the products sold were not viable for the latest changing markets.

Ayele, G., Chamberlin, J., Wamisho, L. M., Kassu. and Zhang, X., (2009) conducted a study called *"Infrastructure and Cluster Development: A Case Study of Handloom Weavers in Ethiopia"* which revealed that despite its resilience in harsh environments, improvements in infrastructure can significantly increase labour productivity in a cluster. In towns with electricity access, producers work longer hours than those in towns without electricity and more entrepreneurs with limited access to capital were able to participate in handloom production because of finer division of labour. The use of trade credit helped entrepreneurs to ease the constraints of operating capital necessary to run their business, which makes participation in the market easier. It was evident that access to electricity greatly contributes to higher labour productivity for those with limited financial assets.

Kurup, K.K.N. (2008) carried out a research called "*Traditional handloom industry of Kerala"***.** The community of *Padma Saliyas* in Kerala were engaged spinning and weaving. The weaving communities settled in a street or a particular centre much against the Kerala pattern of dispersed settlements and habitats. In such streets or centres they worshiped *Ganapati* and *Siva* as their patron deities. *Onam* a special annual festivals, was celebrated through centuries and *Onappudava* was distributed among dignities and common people as gifts and presents. This item of textile with yellow colour was known as *Chittada*. Child learned everything of the craft from his house. Even the special designs of Kancheepuram sari were placed to his mind at a young age. Thus the quality and its production technology continued for centuries without much change.

Singh, A., (2008) conducted a research called *"A study on Status of Varanas weavers: A profile*". The investigator found that the Handloom weavers in Varanasi, who have inherited this occupation, were in pitiable condition owing to the poor socioeconomic conditions. Majority of them were employed on daily wages who earned minimal wages. Provision for raw materials at reasonable price, special training to improve existing weaving technology, knowledge about scientific and low cost techniques of weaving, dyeing and finishing, financial assistance and other necessary inputs was the need of the day as expressed by the weavers.

Anony[1] (2008) an investigator, concluded that consumers complained about the deteriorating quality of Banarasi sarees. The rising cost of raw material was forcing manufacturer to compromise with the quality of saris. Further findings found that the government could subsidize this sector by providing credit, building necessary social, economic & financial infrastructure, arranging marketing campaigns worldwide, negotiating with interested buyer. The policy intervention was also needed to support and encourage private sector investment in this area.

Mittal, I., (2003) investigated *"Handloom weaving of Nagpur: Contemporary Perspective"*. The present study was carried out through an exploratory field survey, aimed at reviewing the handloom weaving industry in the areas of *Bhandara*, *Mohadi* and *Andhelgon* located surrounding Nagpur. Data revealed that traditional nine yard long sari was woven in cotton on a pit loom. The body of the sari was kept either plain or it had beautiful design on its borders and pallu. The borders were embellished with zari or silk yarns using the dobby mechanism. The designs were exquisite and they were usually floral or geometrical. The pallu designs were very simple yet elegant. It had thick and thin bands of contrasting colours woven in zari, silk or cotton. Presently along with traditional sari few new products like dress material, men's lungis, bed sheet, bed cover, towel were also introduced. However, despite conscious efforts the craft was dwindling away because of irregular work. Thus there was a dire need to revive this art and do sincere efforts for progressive development to both craft and the artisans.

Tyal, S., (2006) investigated "*Woven Wonders of Brocades - Consumer Perspectives*": The grandeur and finesse of zari textiles was well appreciated globally. The spread of zari manufacturing and its development centres across India from

Benaras (U.P) to Surat (Gujarat), Kancheepuram to Tanjore (Tamil nadu) and to Paithan (Maharashtra). The zari textiles were often stored carelessly at domestic level. An effort has been made to create awareness among consumers towards their responsibility to preserve their traditions and culture and to pass it on to future generations for appreciation and also pride possession. For the purpose, strategies like a website and care label have been developed for consumers in which guidance was given through tips with illustration as to how to preserve zari textiles.

Agarwal, A. (2005) carried out a study called *"Brocades of Banaras-An in-depth study"* Banaras brocade (Kimkhab-the cloth of gold) was a majestic creation that adorns the feminine. Predominantly woven by Muslim weavers, the age-old traditional weaving of Banaras brocade still fascinates the human kind, despite the various changes that have occurred to it. It is still the most after fabric in both national and international market. Thus an effort was made to study the Banaras brocade at the grass root level so as to unveil the changes that have occurred from past till present in terms of its manufacturing, techniques, motifs, colours, patterns and marketing strategy. The finding showed that an establishment of weaver's service centres was made under the agency of the office of Development Commissions Handloom and Govt. of India. These centres work for the revival of the skills of the artisans were promoted to help them with technical as pact of weaving loom, dyeing etc. Much regional saris moved from a regional market to a broader market through these efforts. Cataloguing the traditional designs used in this art provided rich source of investigation medium for textile designer.

Prakash, S. (1999), carried out a research called *"Meshmerizing of brocades of Andhra Pradesh-Dharmavaram silk sarees"*. An exploratory field study was aimed to trace the origin of the art, the manufacturing techniques, colours designs and their significance with relevance to the past and present status. The findings of the study revealed that the lustrous Dharmavaram silk sarees was 5.30 meters long and 1.15 meters in width. It was woven on a throw shuttle and fly shuttle pit loom using dobby and jacquard attachment. The distinctive feature of the saree lay in its light weight and bright colours in single one or contrast border combination and the unique techniques of weaving the pallav refered to as *porai* and *muttu*. Some of the popular colours used were *Kiramanju, Krishna ananda, luxgreen* and *rani*. A few popular motifs used *hamsa, nemali, Enugu, ruraksham, Banaras and mamidi pandu.* Further a comparison

was drawn between Dharmavaram Kancheepuram and Banglore silk sarees which brought forth interesting similarities and dissimilarities. The sarees share a common enthusiasm in terms of interesting single tone on contrast colour schemes. The dissimilarities through the peculiar techniques of weaving border and the pallav with the main field was distinctive to each region. The motifs and design appeared to be depicted with individualistic expression inspite of sharing a common source of inspiration.

Gupta, A. (1998) conducted a research entitled *"Woven intricacies- The jamdani of Varanasi"*. The aim of the study was to trace the origin and the history of Jamdani. An exploratory field study was carried out in Varanasi and its adjacent areas to acquire the primary information. The result showed that the weaving of Jamdani involves a distinctive style of discontinuous supplementary weft work woven into the fabric. The Dacca Jamdani followed under the royal patronage of the Mughal where as Tanda became known for its Jamdani during the region of Awadh rulers in India. In Varanasi however the art of weaving Dacca Jamdani flourished after the partition in 1947. The commercialisation of Dacca Jamdani had influenced the manufacturing techniques and the colours used.

Singh, R., (1978) studied the *"Banaras brocades*". The result revealed that the motifs used were figures of human beings, birds, animals and floral designs. During the mughal periods the birds, animal and human motifs were replaced by floral motifs. In Akbari paintings bold half blooming flowers in brocade and zari were seen. During the eighteenth century, end of mughal period and the beginning of the British Empire, brocades underwent a drastic change with a change in the patronage. the market changed so the designs were once again modified, to appeal to the western taste. Two types of looms were used; both the looms were pit looms, Jala loom and jacquard loom. The jala had a naksha tied to the loom and jacquard loom had crads mounted on a lattice.

2.2.4 Researches on contemporary trends in textiles

Dauson, S., (2013) conducted a study called *"Redesigning Tradition: Contemporary Developments in Handwoven Silk Saris of Kancheepuram, India"*. The researcher analysed the design trends in the first decade of the twenty-first century which indicates a significant departure from classical aesthetics, particularly in the

context of market-led handloom production. Three indigenous artisan techniques: the *adai*, *Korvai* and *Petni* were practised. The *adai* was a pattern harness used for weaving extra warp and weft pattern into the ground fabric and functioned as a local shedding device equivalent to the jacquard system. While the *adai* facilitated pattern weaving, the *Korvai* and *Patni* enabled solid colour demarcations between the saris constituent parts. Laborious indigenous weft and warp interlocking technique enabled distinctive body-border and end-piece sections in solid constricting colours. Woven Pattern was the most visible indicators of change and newness in sari design. The last decade has seen the weaving of flamboyant designs on handloom saris. Kancheepuram handloom industry shifted to jacquard weaving parallels and the adoption of textile CAD.

Kasinathan, K., (2012) made a study called *"A Sustainable Synergy of Traditional and Cad Based Silk Saree Designing / Production"*. The objective of the study was to analyze the manufacturing techniques of two weaving centre Kancheepuram (a famous silk saree production hub near Chennai) and Coimbatore (a textile town). Findings of the study showed these two centres manufactured the same product, but the product varied in price and its manufacturing process; for example Kancheepuram used the CAD/CAM technology very effectively for the silk sari design, on the other hand in Coimbatore, people still used the traditional manufacturing process because of low cost and low volume products. Kancheepuram cluster was extremely evolved in revenue generation when compared to other saree clusters in India. The setup of design in Kancheepuram had a design studio comprising of a head designer and a team of minimum of 3 or 4 junior designers. Hence, design charges and number of designs created per month was high when compared to Coimbatore clusters. In comparison to Coimbatore cluster, the product selling value and price range being less when compared with Kancheepuram.

B. Bowonder and J. V. Sailesh conducted a study called *"ICT for the renewal of a Traditional Industry: A Case Study of Kancheepuram Silk Saree"* The result revealed that one of the major drawbacks of the silk industry in Kancheepuram was the lack of support from technology. The industry was on the brink of extinction due to the obsolescence of the designs and design making procedures. The recent developments in the designing field show the introduction of computerized Jacquard borders in Kancheepuram silk saree. The use of ICT has not only helped in creating

new and complex designs but also reduced the time involved in the process. The acceptance of these silk sarees by the consumers has also increased with the automation of designing process. Visualization of saree designs ahead of its production and the ability to create new colour combination at the click of a mouse has increased the flexibility and reduced the time for realizing new designs. Though the materials and the techniques were changing with the market demand, the motifs were still conventional to hold the custom and tradition of the Kancheepuram saree.

Chakravotry, R. Dutta, P. & Ghose, J. (2010) carried out a research called *"Sericulture and traditional craft of silk weaving in Assam"* The researcher documented the traditional handloom technique and design/motifs of Assam and their silk production. The traditional textiles of woven silk were known for the fine quality, brightness of colour and durability. Weavers were using abstract figures of animal, birds, human forms, creepers, flowers, diamond motifs. Symbolisms of ritual nature were also often conveyed by the motifs & designs. The folk and tribal designs of Assam also consist of birds, butterflies and animal like horse, elephant, tiger etc. with diverse geometrical forms for the ornamentation of textile. The overall status of textile production Assam was much higher in the past than it is today. Traditional practices used were mostly organic, eco-friendly, sustainable viable and cost effective. But there was a need to explore verifies, modify and scientifically validate these practices for their wider use and application.

Byadgi, A. S. and Naik D.S (2010) studied "*Automation of hand embroidery motifs into self woven design"*. The objective was to produce Gujarat embroidery motifs into automated designs and to study the resemblance of automated designs with hand embroidery motifs. The findings revealed that GC Kala -2004 with interface Paint Shop Pro (PSP) software used to automate the selected conventional motifs into woven designs. Handloom with jacquard shedding mechanism employed to weave the motifs. Chi-square test of significance was applied to assess the resemblance of the automated designs with that of hand embroidery motifs as well as to test the significance of preference for hand embroidered and automated designs among the respondents. The result showed that among the main motifs, confronted parrots, mirrored fish and stylized parrots partially resembled with hand embroidered motifs as mentioned by working women whereas festooned elephant, prancing deer and saddled horse resembled wholly with the respective embroidered motifs.

Mitra, A. Choudhuri, P. K. & Mukherjee A., (2009) give their analysis in *"A diagnostic report on cluster development programme of Shantipur handloom cluster, West Bengal"* The important objective was to build the clusters capacity to meet the challenges of the market and make them globally competitive. Datas were collected by interviews, observations and active participation. The result revealed that the cluster has acquired poor image due to poor product quality as compared to nearby clusters/sectors. This was due to lack of willingness to adopt appropriate level of technology modern methods/ design experimentation/product diversification, on lack of product and process innovation, value addition step except weaving and finishing process except ironing/calendaring/mending/stitching.

Vastrad, V. J and Naik D. S. (2008) studied "*The off white woven Ambasi panje (lungi)",* which had contrast borders on either side with *rudraksha* and *chrysanthemum* motifs and was woven on the throw shuttle pit loom during 1916 and even before. *Lungi* was a yardage of cloth with broad checked borders worn by Mohammedans in Bengal and Punjab. Analyses showed that extra warp yarns in the border were passed through the five dobby slaves (*peti shell*) for creating motifs in the border. The free warp ends were tied in separate sets of 4-6 bundles onto a bamboo stave (*chungi kolu*) that acted as the warp beam. The rayon yarns used for extra weft figuring were taken up from the dobby stave over another bamboo stave (*petikolu*) that was hung on to the roof. *Neyuvadu* in Kannada means weaving of the *ambasi phadiki dhadi panje* with contrast borders was accomplished by using three shuttles- one big for the body carrying unbleached cotton yarn and two small for the borders carrying either dyed cotton or red rayon weft.

Mahendra, S. D., Galab, S., Reddy, P., Vinayan, P. S., **(2008)** carried out a study called *"Economics of handloom weaving: a field study in Andhra Pradesh"*. The findings revealed that two major institutional structures in handloom weaving, viz, cooperatives and master weavers were involved. A good performing cooperative was the best safeguard for the handloom sector, as this protects the weaver and also provides a counterbalance to the master weaver. The average income of a weaver was rarely more than Rs 50 per day. While it was true that becoming an independent weaver would give better returns, the large difference in the average earnings of

independent weavers across the districts clearly shows that only those who were already quite well placed can be independent of the other institutional structures.

Shagun, G. (1996) studied the development of "Hi-fashion garment on handloom". The researcher explored the possibilities of handloom and purposively selected five weaving centres Bhuwaneshwar, Ikats, Kinnaro weaver, Paithani of Maharashtra, Banaras Brocades and thoroughly studied their weaving techniques. The forecast for wall/winter 1996-1997 was obtained from international fashion forecasts and formal line of garments was decided for designing. The findings of the study revealed that the dresses were designed in accordance with the international forecasts for autumn/winter-1996-97. There was emphasis on fittings, the forecast being inspired by the *Diorera* and asymmetric look. Motifs to be woven were selected from the design catalogue and also modified according to the layouts of the dresses to be woven.

Dutt, H., (1996) carried out a study called "Tantric way: Imagery on textiles" The research was aimed at studying tantrik form, symbolism and colours on textiles-traditional and contemporary. The data was collected from available tantrik texts, authors, religious functionaries' devotees and astrologers. The symbolism was studied but due to time restraint it was impossible to bring out a complete iconographic significance. Important and recurring symbols were studied in detain and have been included in the research work. Colours have been studied with the restraint of time and other resources. Scanning of data revealed that most of the designing being done today was purely aesthetic based without due importance to symbolism. The art has become more or less commercial and it was hard to say whether this commercialized form was viable or not.

Dash, N. S., (1996) carried out a research on "Role and Working of Handloom Industry in Western Orissa" The aim of the study was to assess the economics of handloom weaving among different caste groups. A similar sample survey of household expenditure on cloth was also conducted to assess the nature and character

of demand for cloth. Result showed that the differences primarily arises because of specialisation in terms of yarn count and product group as each caste group under study was found to specialise on a group of product dealing with a certain specific yarn-count category and therefore, each caste group operates with a specific technique.

2.2.5 Researches on contribution of technology in sustaining of art & craft

Tepper, L. (2008) conducted a research called "Coast Salish weaving - preserving traditional knowledge with new technology" The study explored the alternative method for preservation of Coast Salish weaving of Canada and United States. Coast Salish textile techniques traditionally included plaiting, weaving and sewing. Patterned sweaters, hats gloves and slippers were made from thick rain-resistant yarn in the natural colours of white, brown and black fleece. The investigator made an attempt to preserve their weaving heritage through multimedia technology. The researcher concluded that contemporary technology such as Weaving Teacher Resource and CD helped in preservation and promotion of traditional hand weaving.

David, S. N. and Kochhar, R. (2012). carried out a project called ***"****The Dhokra Artisans of Bankura and Dariapur, West Bengal: A Case Study and Knowledge Archive of Technological Change in Progress"* The aim was to explore the potential capability of multimedia as a tool for sustainability of craft. the outcome of the study showed that there was small but increasing demand for dhokra work from urban Indian families, as well as in the tourist trade. Most of the remaining *dhokra* communities were extremely poor, and their economic condition has caused many families to leave the craft to find wage employment in local manufacturing centres. The continuation and development of the dhokra industry depends on the artisans finding a stable market niche for themselves and their products. Whatever it proves to be, this market needs to be developed and supply chains established. Multimedia systems make it possible to use a full range of modalities of description, including video, sound, still image, conventional text and technical diagrams to develop adequate representations of skilled performance mediated by the craftsman.

Bellamine, W, (2007) carried out a study called "The Impact of Globalization on Small Scale Artisans in *Azrou*, *Morocco*". The findings revealed that the *Moroccan*

small scale artisans were struggling to earn income for surviving. This new phenomenon was due to a smaller interest in the handicraft sector both by the state and by the young consumers. The further findings showed that there were ways for the small-scale artisans to improve their businesses with the means they currently have, and these include the use of e-commerce, taking advantage of ethical tourism to publicize and help their businesses grow. The implementation of these recommended solutions will surely aid these artisans, but it is the task of the state to improve or develop the infrastructure needed to ease access to e-commerce and the tourist sector, ultimately ensuring the long-term prosperity of the small-scale artisan business and, ultimately, their quality of life.

Hassanin, L. (2008) conducted a research called "Egyptian Women Artisans: ICTs are not the entry to modern markets" with an aim to analyse the potential for Egyptian craftswomen to use Information and Communication Technologies (ICTs) to improve their earnings. The outcome of the study was that crafts sold in the international market have to be highly competitive in terms of price, quality and design – they were currently not at the standards needed to compete in the international electronic or craft-fair marketplace. Furthermore, online marketing requires technical and language skills, the financial resources to access and utilize the internet, physical access to ICTs, knowledge of legal aspects of the export trade, quality control, transport requirements, and the availability of e-commerce.

Mathur, K. (2003) did an experimentation called "Jacquard Fabrics on Demand". The main goal of the proposed research was to develop scientific methodology to help Jacquard fabric producers manufacture intricate fabrics for frames, home furnishing (wall covers, curtains, bed covers, upholstery, etc.) and high fashion dresses with specified designs and colour schemes that were virtually indistinguishable from customer demand. Findings showed that the goal was achieved through utilizing the latest jacquard technology, CAD systems, selection of warp colour rotation combination(s), filling colours, and colour measurement and colour perception modelling. A loom with an electronic jacquard head of over 5,000 hook capacity was prepared with three different warp colour rotation sequences (including four primaries) across the loom width, to determine the maximum potential number of colour/weave combinations possible and minimize the warping and tying-in processes.