

# PROCESS, TECHNIQUES AND DESIGNS OF HAND KNOTTED CARPET MANUFACTURING UNITS OF JAIPUR DISTRICT

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## ABSTRACT

An attempt has been made to study, the process, techniques and designs of hand knotted carpet manufacturing units of Jaipur district. Due to the absence of adequate survey of Indian carpets, especially Jaipur whose carpets are world fame, it becomes imperatives to study and document the designs produced in Jaipur as well as production process of hand knotted carpets. The study revealed that Jaipur carpet industry holds a eminent place in enriching the nations heritage meeting the economy's need for foreign exchange and providing employment to nations' expanding work force.

## INTRODUCTION

For thousand of years, hand knotted carpets have meant the pinnacle of comfort, luxury, beauty and practicality in thousands of home. Carpet manufacturings have flourished as an oriental art, since it was introduced by Mughals in India. A profusion of decorative carpets in apparently infinite variety of style and qualities are found in Jaipur. The industry has greatly reclined towards Persian style in its designs and layout. Keeping in view these points and due to the absence of adequate survey of Indian carpets, especially Jaipur whose carpet are world fame, it becomes imperative to study and document the designs produced in Jaipur as well as the production process to hand knotted carpet. The objective of present research was to study organizational structure, process, techniques and designs of hand knotted carpet manufacturing units of Jaipur district.

## RESEARCH METHODOLOGY

The present study was conducted on sixteen carpet manufacturers of Jaipur. Jaipur was divided in four zones and four units were randomly selected from each zone. An interview schedule comprised of open as well as close ended questions was prepared. The information was collected from respondents and was broadly categorized under three heads i.e.

- Profile of manufacturers
- Infrastructural information of unit,
- Raw material and production process

After collection of data, the same was coded and statistically analyzed through frequencies and percentages. Thereafter, inferences were drawn in the light of objective of the study.

## RESULTS AND DISCUSSION

### A. Profile of manufacturers:

Respondents were studied for their age, sex, education. Results revealed that all carpet manufacturers were well educated and majorities (87.50%) were in age group of 26-45 years.

### B. Infrastructural information of units:

- **Scale of unit-** Responses obtained revealed that carpet industry was a cottage industry, where investment on plant and machinery can be up to 25 lac as there is no big machinery involved. Weaving is done on simple, wooden roller beam loom by hand.

- **Organizational structure of carpet manufacturing units-** 81.25 per cent factories (13) were sole trading and manufacturing type i.e. they manufacture goods on order and exported them to the buyers as per order whereas 18.75% factories (3) of units were sole trading,

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**Table 1. Profile of manufacturers****(n=16)**

S. No.	Information	Aspect	No. of Units	Percentage (%)
1.	Age	20-25 years	1	6.25
		26-30years	5	31.25
		31-35 years	3	18.75
		36-40 years	3	18.75
		41-45 years	3	18.75
		46-50 years	1	6.25
2.	Sex	Male	16	100
3.	Education	Graduation	13	81.25
		Post graduation	3	18.75

manufacturing plus partnership firms.

- **Inherited / started-** Majority (68.75) manufacturers started the unit as a new Venture. Thus carpet industry from the very beginning is attracting new entrepreneurs, whereas 31 .25%

respondents inherited this as heritage from there fore-fathers and till date running it successfully.

- **Number of workers-** The total number of workers employed by most of the units was from 500-1500 and their main categories were carpet

**Table 2. Infrastructural information of units****(n=16)**

S. No.	Information	Aspect	No. of units	Percentage (%)
1.	Organizational structure	Sole trading + Manufacturing	13	81.25
		Sole trading + Manufacturing + partnership	3	18.75
2.	Acquired skills of manufacturing	Inherited	5	31.25
		Self developed\started	11	68.75
3.	Range of looms in factory*	1-5 looms	11	62.75
		6-10 looms	2	12.50
4.	Types of loom installed*	Vertical roller beam	13	81.75
		Horizontal roller beam	–	–

\* No looms were installed in the premises of factory

designers, colour matchers, weavers or knotters, finishers and helpers.

### C. Raw material and production process:

- **Raw material used for making hand knotted carpets:** Hand knotted carpets was composed of three parts: the warp, the weft and the pile and so the data is also distributed under three sub headings.

- **Raw material for warp:** All the units (100%) used cotton for making warps as cotton is stronger than wool.

- **Raw material for weft:** Majority of units (75%) used cotton for making weft and one fourth of uhits (25%) used both cotton and wool.

- **Raw material for pile:** It was interesting to find that majority of respondents (81 .25%) Used the natural protein fiber wool as a raw material in Jaipur.

- **Source of raw material:** Their main source of procurement of raw material were local, national (Bikaner, Delhi, Hissar) as well as international market. More than half (62.5%) units imported wool for pile from Newzeland for making quality products.

- **Dyes used for dyeing:** About 70 per cent of units used synthetic dyes (acid &chrome dyes) for dyeing of woolen yarns. Advent of natural dyes compared to synthetic dyes in this sector is still very less.

- **Tools used for carpet weaving:** Tools were common in all the units in fact they are common in all the areas where hand knotted carpets are produced.

- **Steps involved in carpet weaving:** Through observation and informal discussion with the carpet manufacturer it was concluded that the process

**Table 3. Distribution of units by raw material used (n=16)**

S. No.	Aspects	Categories	No. of Units	Percentage (%)
1.	Raw material for warp	Cotton	16	100
2.	Raw material for weft	1. Cotton	12	75
		2. Wool	–	–
		3. Both cotton & wool	4	25
3.	Raw material for pile	1. Wool	13	81.25
		2. Silk	–	–
		3. Viscose	–	–
		4. Wool & silk	2	12.5
		5. Wool, silk & viscose	1	6.25
4.	Source of raw material for warp & weft	1. Local market	2	25
		2. National market	12	75
5.	Source of raw material for pile	1. Local market	–	–
		2. National (Bikaner, Beawar, Kekri)	6	37.5
		3. International (Newzeland)	–	–
		4. International & local	10	62.5

applied for weaving hand knotted carpets was same for all units and is described in brief by respondents as follows: to commerce carpet weaving weaver firstly need a design made on graph. According to design carded, spun dyed woollen yarns are needed as pile. A vertical roller beam loom was mounted with cotton warp yarns. After mounting the warp weaver began to weave a carpet. After weaving a stout selvedge to secure the ends of carpet, knotting begins by taking the required dyed woollen yarn according to graph and knotting is around each of

the warp threads. After the completion of each row, a thread called the weft thread' or tani in common language is inserted horizontally or passed in between the warp threads above the row. The row of knots and wefts are now beaten together, using a heavy iron comb. This operation is repeated after every row of knots. The rugs are knotted by hand the pile tends to be very uneven and scissors are used to trim the pile after several rows of knots.

The proceeds in this way till the design from graph is replicated by the skilled fingers of weavers

**Table 4. Tools used in carpet weaving**

S. No.	Name of tool under by weavers (common name)	Purpose
1.	CHURI (Knife)	To cut threads of knot
2.	PANJA (Beater)	To beat weft & pile threads
3.	KANGA (Comb)	To tighten the threads of the weft against line of knots
4.	PATTI (Scale of steel)	To straighten the knots in front
5.	KANCHI (Scissors)	To clip the pile of carpet

in carpet.

- **Types of knot used by weavers:** There are two kinds of knots employed by weavers namely Persian and Turkish knot. Persian knot is commonly used in Jaipur because it is commonly known by the weavers.

- **Motifs and designs used:** Study of motifs used in Jaipur carpets revealed that commonly used in field and border designs were floral motifs in stylized Persian style as 'palmettes' to 'guls' motifs

in geometrical format. Now-a-day the natural look in designs is being emphasized by designers in their creations Roses, lotus lilies, endearing wines, scrolls leaves etc. frequently found place in field and border design of carpets. Other motifs used were: boteh, arabesques, loud brands, eight pointed star, vase, tree of life, birds etc.

- **Designing catalogue:** outcomes on designing details revealed that carpet designers in Jaipur did not use any catalogue for designing, but

**Table 5. Field and border motifs used in Jaipur**

<b>A. Field Design</b>	<b>Motifs</b>
1. Mir-Ibotha	The boeth motif filled with rosette & leaves
2. Guli-Heena	Stylized heena plant
3. Indo-Herati	Small angular motifs, enclosing rosette
4. Mina-Khani	Floral motifs surrounded by four flowers
5. Hunting scenes	Animal & human figures
6. Other Motifs	Gul, Swastik, Palmette, Lancet leaves, Cloud bands, Vase & tree motifs, shrubs & birds.
7. Mughal Style	Floral motifs
8. Aubusson	Detailed floral with architectural motifs
<b>B. Border Design</b>	<b>Motifs</b>
1. Flowering Tendril	Pan-ki-bel, Anguri bel, Gulab ki bel
2. Running Dog\key border	Geometrical motif
3. Harshang	Crab motif
4. Herati	Turtles with flowers and leaves
5. Cartouche	With inscription and dates
6. Palmetts	Stylized floral with clouds bands, leaves
7. S-pattern	Geometrical S-shaped letter
8. Other motifs	Vase, flowering tree, meander, diamonds, human figures, animals & reciprocal border etc.

referred carpet books, photo plates of carpets, design on other textile products and wall paintings while, designing with their creativity, exports demands and color trends of carpets were kept in mind.

- **Preferences of designs:** Result revealed that majority of manufacturers (81.25%) were frequently showing interest for contemporary designs but traditional styles were evergreen in demand. Color combinations and designs were greatly influenced by buyer's taste, as most of the carpet manufactured, were exported. Colours kept changing and challenged the designers to play with them wisely and embellish the designing details.

- **Arrangement of designs:** Designs in the entire format – directional, non directional, all over repeat and central medallion was proficiently produced by expert designers of Jaipur.

- **Finishing of carpets:** For finishing of carpets both chemical and herbal washes were used by the manufacturers, but all the chemical as well as natural products used at various stages were not disclosed by the manufacturers. Carpets were washed and finished in the warehouse of units or in other finishing units on job works.

- **Price of carpets:** All the units were capable of producing carpets in almost sizes, shapes and quality, and the price of were regulated by quality of carpet, quality of raw material used, weaving costs, demand in market and designing details. Carpets from Jaipur are exported to Germany and U.S.A.

## CONCLUSION

Therefore, it has been concluded that like other centers for carpet manufacturing in India, Jaipur carpet industry holds a eminent place in enriching the nations heritage, meeting the economy's need for foreign exchange and providing employment to nations expanding work force. But the prime prerequisite to bolster and substantiate the position of Indian carpets with quality of carpets is to innovate designs which are a blend of traditional layout, fashion colors and have motifs different from, Persian style or complementing Persian style which till date is popular in hand Knotted carpets. And this calls for professionally trained, well equipped and well informed designer clippers, finishers, production managers to change the fate of India carpet in foreign market. This study is small attempt to provide attention, this area deserves.

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