

# *Comparison of Technological Parameters of Looms at Varanasi*

*By: D. Sargunamani, Jayanta Ghose  
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### Introduction

This paper presents information of the study carried out to find out and compare various technological parameters of different looms for such demand in market and results are expressed in terms of production, quality, throughput time, wages, Infrastructure, Cost.

### Various Looms of Varanasi (Benaras/Kashi)

#### Pit Loom



Varanasi silk fabric specially Banarasi silk sarees are widely popular in the country as well as in outside world for its uniqueness in design and brilliant look. Varieties of popular designs are produced by the expert weavers of Varanasi such as Katan, Satin, Chiffon, Brocade etc., using handloom usually termed as pit loom. There are approximately 34000 numbers of pit loom available in Varanasi which are most specific in construction and mode of operation of the loom differs from handlooms available in

other part of the country. The uniqueness of these looms are the production of specific design (Floral, Plants, Animal, Historical Monuments, own creations/thoughts etc.) using different colour weft threads and lifting of warp with Jala (Nylon/ Cotton threads) are popularly referred as Banaras design. The designs produced are simple or complicated that are perfect in appearance with less/no distortion which catches the heart of the viewer. The major benefits of loom are as follows:

1. Cost of loom is less compared to power and shuttleless looms which is the major factor.

2. More complicated and precise designs such as animal, plants, historical monuments, own creation of designs or thoughts can be produced.
3. Less space is required.
4. Loom height required is 8 to 10 feet which is low and easier for weavers to operate jacquard.
5. The humidity in the pit which contains sand is maintained by sprinkling water on it.
6. Access for weavers to sit during work is comfortable and they can operate the loom easily.
7. Removal and placement of punch cards on the jacquards is easier.
8. No vibration in loom frames.
9. Working environment is good because there is no noise generated.

### Powerloom



Normally, Pick-n-pick loom (1x4 shuttle box) is used as the fabrics contain different weft colours and at some places powerloom (4x4 shuttle) are also used. Varieties of popular designs, similar to handloom can be produced. The products produced are dress materials, curtains, Silk sarees, Chandrei, home furnishing etc.

### Shuttleless loom

#### (Flexible Rapier weaving Machine)

At present, Rapier looms (Chinese) made are largely used as it is cheaper than made in India. Though shuttleless looms are popular for very high production and quality, designs made from these specially Varanasi (Banaras) are less compared to



handloom made. The products produced are dress materials, curtains, Silk sarees, Chandrei, home furnishing etc.

### Comparative Analysis

Sl. No	Parameter	Handloom	Power loom	Shuttlelessloom [Flexible Rapier]
1	Production	0.075-0.1 m/hr	2.5 to 3 m/hr.	6 to 8 m/hr.
2	Quality	Good	Better	Best
3	Electricity	Not required	Upto 15kw [depends on no. of looms]	Upto 25kw [depends on no. of looms]
4	Wages	Rs. 50 to 80/day	Rs. 150 to 200/day	Rs. 200 to 500/day [Rs. 8/metre]
5	Weaver's Skill required	Very high	moderate	less
6	Utility	Unique and non duplicable designs are produced.	Normal and duplicable designs are produced.	Normal and duplicable designs are produced.
7	Managing Labour [in terms of absent]	High	low	Very low
8	Throughput time	Very high	moderate	less
9	Investment [per loom]	Rs. 20000 to 30000	Rs. 40000 to 50000	Rs. 200000 to 500000 [Chinese loom to Indian loom]
10	Production cost	High	Medium	Low
11	Infrastructure [Space/loom]	12' x 12'	18' x 12'[Depends on loom width]	20' x 14'[Depends on loom width]
12	Total no. of looms Available at Varanasi-Mubarakpur for silk	30000-34000	Appx. 50000	<200
	Future trend for More looms installation	Low	High	Very high

### Conclusion

It is clear from the above table that shuttleless looms (Flexible Rapier) exist low in numbers compared to handloom and Powerloom. The Production and quality of the fabric produced are better; throughput time is low, lesser problems such as labour management, machine maintenance, and break down. Weavers inform that they can deliver their product in specified time to the customers. Based on these various technological parameters assessed and also awareness about

Government Subsidy for rapier machines under CDP-XI Plan from Central silk Board Flexible Rapier Weaving Machines are gaining popularity and have high market demand.

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