Comparative Study of Weaving Units On The Basis Of Production And Quality

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(Signed)

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Contents

CHAPTER 1

Introduction:

Weaving Industry:

Today weaving ranks as a major industry in many countries. Weaving is often completed on high speed looms. But Weaving is not limited to cloth and textile products. Weaving plays an important part in the manufacture of screens, metal fences, and rubber tire cord. Craft workers also use varied fibers to weave baskets and hats. The weaving industry has 53 integrated units (composite units with spinning and weaving in one unit) with an installed capacity of 14,130 looms; 512 shuttle less weaving units with an installed capacity of 13,340 looms; and approximately 30,000 units in the power loom (shuttle loom) sector, with an estimated 225,253 looms . Weaving commenced in Pakistan mainly as an integrated operation and Mill Sector production dominated up to late 1960's. Thereafter the capacity in Mill Sector had been declining and increasing in Power Looms Sector to match the demand growth. It has now become so strong that it produces about 90% of total cloth production.

1.1.2) Textile weaving industry in Pakistan:

Textile industry has the largest potential for boosting exports from Pakistan. At present this sector contributes more than 60% share in the export of country. Apart from its basic contribution of clothing the nation and at the same time earning largest foreign exchange through exportable items, the textile industry holds the key to the growth and expansion of the country's cotton economy, which continues to be the main cash crop.

At the time of independence of Pakistan only two textile mills were in existence. After independence, the process of development of the textile industry started picking up gradually. The organized development of cotton textile mills started in the late fifties with the first five-Year Plan. PIDC came into being with its main objective of the industrializing the country in major fields as envisaged in the then plan. By mid sixties, there were about 180 units of textiles bleaching, printing and processing units, mostly situated in Karachi and small number in the Punjab. In 1968, in consequence of change in the basis of collection of excise duty from capacity to production, most of the mills closed their weaving section. The looms removed from the mills as their weaving sections were closed the looms were installed outside the mills premises in units of four, which has been exempted from excise duty. This fragmentation dealt a deadly blow to textile weaving, in so far as its future development was concerned.

Contrary to the declining trend in the production of cloth in the mill sector, the non-mill sector or power loom sector, maintained a rising tempo of expansion in capacity and production. It made a major contribution to exports of different types of fabrics, including grey cloth, bed spreads, tapestry cloth,

specialized cloth etc. In this way the power looms sector was also backed up by the mills sector. As results, as against the declining trend in the production of cloth in mill sector, the production in the power loom sector kept rising. Most of the idle looms have been removed from the mill-sector and installed in the power loom sector.

Independent Weaving Units: A new segment in the textile industry, known by the name of independent weaving units is in the process of creation. It is the setting up of shuttle less, width air jet or rapier looms, capable of producing better quality cloth with a width ranging from 70 to 140 inches.

In Pakistan shuttle less looms units may be divided into two broad categories. (a) The units using imported second-hand looms. (b) The units using imported new looms. The performance of the units using second-hand looms is unsatisfactory in respect of efficiency of production. However, the performance of the majority of units using new imported shuttle less looms of recent origin is satisfactory. There is sufficient market for the cloth produced by these looms both in the home and export market.

During the early 1990s there has been a rapid expansion in investment in new dyeing, printing and finishing technology and local readymade garments industry is emerging. But its penetration of export market depends upon the discipline it succeeds in imposing on suppliers of fabrics. Without a major improvement in fabric quality the new investment will not lead a surge in garments exports.

Much progress has been made with the induction of new technology based on shuttle less looms but still there is room for further expansion in this sector for the sake of balanced growth of downstream value-added products.

The mill sector cloth is used locally as well as export purposes on the ratio of 30:70. It fetches a premium over the power loom cloth. Over the years, domestic market has also become quality conscious and demand for cloth made on modern looms is rising.

Quality of Cloth: Preference for blended fabrics is increasing because of their appearance and durability. For production of blended cloth the quality of cotton yarn, in matter of counts need to be improved. Pakistani lint cotton, which has high trash content, is not suitable for producing blended yarn. Besides, the price of polyester fiber should be brought down. Some measures essentially needed for development of weaving are discussed here:

Modernization of Units: Automation should be introduced in power loom weaving plants either by fitting devices to the existing looms or by putting altogether high efficient looms. Existing looms be equipped with supplementary devices, as these are not already worn out.

Wider Width Fabrics: There is a growing trend of wider looms, both conventional as well as shuttles. Fabrics ranging from 50 to 80 inches one mostly demanded for garments. For bed sheets etc. the demand is to 90 to 100 inches width cloth. It will, therefore, be more economical to have multiple width looms than single width ones.

Export prices of fabrics low due to inability to standardize products, improve quality control, upgrade quality and meet demand schedules. Nevertheless, some integrated units are producing high quality fabric and they do not get good prices due to the negative image of Pakistan clothing industry in major international markets.
The introduction of CAD/CAM technology (which can contribute towards dealing with these problems) has progressed extremely slow and is limited to a small number of firms in central Punjab and Karachi.

Production Activities of Weaving Units:

As our project is mainly concern about the production study so we start it from the production departments of the weaving units.

Kohinoor Weaving Mill (Riwind Division)

1.2.1) Warping:

The arrangement of threads in long parallel lengths ready for weaving
.

i. Direct Warping. (Creel capacity =1024)
ii. Number of machines = 03
iii. Creel type = V-Creel

1.2.2) Sizing:

"The purpose of Sizing is to make the yarn strong enough to withstand the stress of weaving"

- Double Nip
- Double Dip Sizing machines.
- Benninger Company.
- Creel Capacity 28 beams.
- Double Box Sizing machine.
- Tow sizing machines.

1.2.3) Drawing In:

Drawing In is done according to design and weave of the fabric .Quality department will prepare article change program and forward to article team and all relevant department after signing of General Manager .According to article program drawing in program is given by quality department seeing the design and weave of the fabric to be produced .Drawing in charge will forward the drawing program to Drawing In contractor and they do drawing.

1.2.4) Weaving Shed:

i. Total no of looms are 204
ii. 108 are running in shed 1 are OMNI PLUS 800
iii. 96 are running in shed 2 are OMNI PLUS
iv. In shed 1 there are 60 looms of 340 cm and 48 of 290 cm.
v. In shed 2 all the looms of 96 cm.

1.2.5) Folding Department:

Process flow of folding is said to be as follows:

- Inspection Process.
- Fabric Recording (Booking).
- Rechecking Process.
- Fabric transfer to packing.
- Fabric transfer to Godown department

1.2.6) Testing:

The purpose of testing is to maintain the quality of yarn to fabric. Furthermore, also to make quality reports of respective departments according to process flow.

1.2.7) Maintain the quality of yarn:

Following instruments are used for testing purposes:

- Lea maker.
- Fast count system.
- Twist tester.
- Yarn and fabric strength tester.
- Moisture tester.
- GSM cutter.
- Crimp tester.
- Humidifier.
- Light box.
- Pick glass.
- Nipper.

Be Be Jan Colors (LTD)

1.2.8) Warping:

The arrangement of threads in long parallel lengths ready for weaving
.

i. Direct Warping. (Creel capacity =1040)
ii. Number of machines = 02
iii. Creel type = V-Creel

1.2.9) Sizing:

"The purpose of Sizing is to make the yarn strong enough to withstand the stress of weaving"

- Double Nip
- Double Dip Sizing machines.
- Benninger Company.
- Creel Capacity 32 beams.
- Double Box Sizing machine.
- One sizing machines.

1.2.10) Drawing In:

Drawing In is done according to design and weave of the fabric .Quality department will prepare article change program and forward to article team and all relevant department after signing of General Manager .According to article program drawing in program is given by quality department seeing the design and weave of the fabric to be produced .Drawing in charge will forward the drawing program to Drawing In contractor and they do drawing.

1.2.11) Weaving Shed:

- Total no of looms are 132 are OMNI PLUS
- 24 looms are of 190cm
- 36 looms are of 280 cm

- 72 looms are of 340 cm

1.2.12) Folding Department:

Process flow of folding is said to be as follows:

- ❖ Inspection Process.
- ❖ Fabric Recording (Booking).
- ❖ Rechecking Process.
- ❖ Fabric transfer to packing.
- ❖ Fabric transfer to Godown department

1.2.13) Testing:

The purpose of testing is to maintain the quality of yarn to fabric. Furthermore, also to make quality reports of respective departments according to process flow.

1.2.14) Maintain the quality of yarn:

Following instruments are used for testing purposes:

- Lea maker.
- Fast count system.
- Twist tester.
- Yarn and fabric strength tester.
- Moisture tester.
- GSM cutter.
- Crimp tester.
- Humidifier.
- Light box.
- Pick glass.
- Nipper.

Chapter 2

Objective:

The purpose of our object is to investigate main factor that is directly responsible for lower production. The production of the mill mainly depends on following factors as given below:-

- Yarn quality
- Operator quality
- Machinery

Presently, I am investigating the effect of yarn quality on the production keeping the other two parameters constant.

CHAPTER 3:

3) LITERATURE REVIEW:

There are so many factors which affects the weaving production on two same units. Some of these factors are, Yarn Quality, Size%, Environment conditions, Loom settings, Mending, Time, Loom conditions, Loom type, yarn purchase policy, yarn testing parameters, warping and sizing machines models, sizing chemical used, weft feeder type, weavers training, maintenance schedule, humidity & temperature, technical staff qualification, cleanliness, speed & model of looms. These are the main factors which can effect the production,

The role of textile education and training to enhance the production of the industry is discussed earlier as the rapid technical growth of the textile industry is likely to continue at an increasing rate. The future supply of competent managers and technicians is an urgent problem that must be met by an active partnership of industry and education.

Sound fundamental technical training is essential. The proposals set out in the White Paper, Belter Opportunities in Technical Education (H.M.S.O.), are now being implemented. It is of note that the City and Guilds of London Institute's Mechanical Engineering Technicians* Course (Subject 293) includes 'Plant Maintenance and Works Services' as a special technology.

The new courses should increase the flow of technicians, but it is important that their training is continued within industry. That this will be encouraged by legislation is indicated in the White Paper, Industrial Training: Government Proposals (H.M.S.O.).

At top-management level, high academic achievement is of real value only if it is coupled with positive training in management practice. (1)

It is also discussed that how the batter planning can have a great effect on the production. Change is continuous throughout the whole of industry, so it is pertinent to ask what the textile industry should be planning in the personnel aspects of management for the next 25 years. What are the positive contributions that personnel management can make tomthej industry's future development? As was said at the beginning of the chapter, personnel management is concerned with people at work, and it seems certain that changes will occur in both people and work.

Industrial workers are increasingly better-educated and more articulate. They are Jikdy to expect ever-higher standards in the working environment and to be more knowledgeable about, and more concerned with, all matters that affect themselves.

The textile industry has undergone many profound changes, and it seems clear that processes and methods in textile technology will continue to change, with far-reaching effects on administrative procedures. (2)

Further one more complement for the better production is the research and development, the emphasis in this chapter is on the essential point that research is one method of obtaining information and development is the

means of applying this information to production. It is hard to believe that there is any firm with the will to survive and make profits that can do without development capacity. Only the management of the firm can decide whether, in addition, it requires research facilities, and it can do this only by examining its own requirements and not by copying other firms in its own or any other industry.

Neither development nor analysis of the requirements for new information can be carried out without competent technical staff. Such staff must have time to think and thus cannot be immersed in day-to-day production problems. If such staff is provided, the means for assimilating and evaluating new information are immediately available and provide the nucleus for research if the company's requirements necessitate it. (3)

The wages and the prosperity of the workers also have an unbelievable effect on the production, If both employers' organizations and trade unions try to co-operate rather than to engage in a tug-of-war, the field of argument will be greatly narrowed and final settlement will be made easier. With a fair and considerate approach on both sides, the only really difficult argument that should arise concerns the general level of earnings in a t industry at a particular point of time. It could be argued ideally that" the earnings of work-people in an industry should not suffer merely because difficult trading conditions are being experienced and that the laborer is always worthy of his hire. It is also true, that no industry in an active economy can survive for long if it tries to do so by paying its operatives below the odds, since it will then obtain only the poorer types of worker or no workers at all.

On the other hand, temporary setbacks in the economic situation of an industry may be met by the unions and workers with some degree of restraint. Employers may profit by good trading conditions to improve working conditions or otherwise benefit their workers. In the case of what appear to be irreconcilable disputes, resort can be had to conciliation | or to an outside arbitrator. This is not the ideal, since it almost inevitably. (4)

3.1) BIBLOGRAPHY:

Following are the Mill Resource Person who gives us the literature which will helpful for our project completion.

Kohinoor Textile **Mills** (Raiwind Division)

Farooq Saqib	(General Manager)
Muhammad Shahbaz	(Sizing Manager)
Muhammad Zahid Bhati	(Weaving Manager)
Rizwan Ullah	(Assistant weaving manager)

Be Be Jan Colors LTD

Muhammad Shkeel	(General Manager)
Muhammad. Irfan	(DPM)
Saqib But	(Sizing Manager)

Ch#4 Materials and Methods

Following cotton yarns of counts 30/ 40/ 60/ are use for the stud, there characteristic are as under.

Warp yarn characteristics

Kohinoor Textile Mills												
YARN TESTING REPORT										DATE:21/04/2010		
Bags	100		IGP#		19-04-010*0549				P.O NO.=	0		
BHIMRA TEXTILE MILLS 30/1 CRD(PAK)												
	1	2	3	4	5	6	7	8	9	Average	STD. DEV	C.V
Weight(gms)	2.146	2.052	2.162	2.152	2.19	2.07	2.134	2.157	2.132	2.133	.04	2.08
Count	30.2	31.58	29.97	30.11	29.59	31.30	30.37	30.04	30.39	30.39	.64	2.11
Strength	34.9	35.4	31.4	33.2	34.4	36.7	29.8	34.2	33.4	33.71	2.09	6.2
Cone WT (KG)	1.935		1.934		1.972		1.940			1.95	.02	.93
Cone WT (lbs)	4.134		4.131		4.215		4.145			4.156	0.04	0.96
Moisture%	7.1		7.1		7.3		7.5			7.25	0.19	2.64
C.L.S.P										2259		
Yarn Appearance												

Weight	Kgs	Lbs	Summary Report			
Empty bag	.13	.29	Description	Standards	Plus	Less
Empty cone	1.440	3.17	count	30	.39	.00
Polythene bag	.075	.17	Yarn weight	100	.13	.00
Stopper	.088	.19	Moisture	8.5	.00	1.25
Total tare	1.733	3.82	C.L.S.P	2350	.00	91.07
Bag (gross)	47.15	103.95	Count C.V	1.2	.91	.00
Yarn	45.417	100.13	Strength C.V	3	3.2	.00
Weight of yarn w/o moisture	92.88		Cone weight	4.17	.00	.01
Standard length (mtrs) 96020	Actual length (mtrs)	97032	Length (mtrs)	96020	1012	.00