

Analyzing the Cost Structure of Garments from Fiber to Fashion

Farhana Momotaz, Md. Rashedul Hasan, Maksuda Bintey Islam

Abstract: In garments manufacturing sector, a business is totally depends on garment costing. Costing is a very complex procedure, with set patterns and guidelines followed by the industry. Garment prices are mainly based on the fabric consumption. Hence we must pay more attention to find out the fabric consumption more accurately or closely. It needs sound knowledge and good practical experience to find out the fabric consumption. It is difficult to find out costs for every process as there are some inbuilt costs while costing. In order to do perfect garment costing, one must know about all the activities including purchase of fabrics, sewing, packing, transport, overheads, etc. and also about their costs, procedures, advantages and risk factors. Merchandiser must be aware that there are always fluctuations in the costs of raw materials and accessories, charges of knitting, processing, finishing, sewing and packing, charges of transport and conveyance, shipping, over heads, banking charges and commissions, etc. The method of making costing will vary from style to style, as there are many different styles in garments. In our study, we have analyzed the calculation process. To work on the prices exactly, we have worked on full measurements of the three knitted garments which are men's t-shirt, Ladies' t-shirt & pant, especially the measurements of Chest, Body Length and Sleeve Length and waist band. Different types of costing and their variances are also discussed in our study.

Keywords: Costing, Garments, Fiber, Fashion, Consumption.

I. INTRODUCTION

Cost typically can be defined as the economic value placed upon the resources consumed to make a product. Costing is the process of estimating and then determining the total cost of producing a garment, including the cost of materials, labor and transportation as well as the general expenses of operating the business.[1-2] Production merchandiser is normally required to do the costing of the product. The costing is done by keeping in mind the cost of the various raw materials, operating cost of the company, the competition and expected profit of the organization. At the same time, it is necessary to keep in mind the buyers costing expectations. The components on which cost of garment depend is fabric, trims, Cut Make & Trim charges, value added services: printing, embroidery, washing, appliqué, testing of the garment, quality, transportation and logistics cost, profit of the manufacturing organization.[3-4]

All these components of garment cost depend upon certain parameters which drastically affects above cost parameters. These parameters plays vital role for making costing of garment;

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as these parameters are very dynamic and keep fluctuating frequently.[5-6] The parameters that affect the garment cost mostly are; Unit of Measurement, Fabric minimum order quantity (MOQ), Incomer decided on raw material, vendor order quantity, and etc.[7]

There are mainly two types of cost i.e. direct cost and indirect cost. Direct cost includes Fabric Cost, Washing Cost, Accessories & Trimmings Cost and Labor Cost. Fabric cost includes Cotton Consumption Cost, Yarn Consumption Cost, Knitting Fabric Cost (S/J, Rib Fabric Cost), and Dyeing Cost. Indirect Cost includes Salaries, Rent, Utilities, Transport, Commercial Cost, and Depreciation Cost.[8-9]

So, Total Cost = Total Direct Cost + Total Indirect Cost

Profit should be 20% of Total Direct Cost

So, Selling Price = Total Cost + Profit. [5]

II. MATERIALS AND METHODS

The objective of this study is to find out the basic costing procedure of knitted garments from fiber processing to prepare them as fashion item. So Firstly we collected 3 fashion items i.e. men's t-shirt, Ladies' t-shirt & pant. Then we take the measurement of the Width, Sleeve Length, and Body Length of the t-shirt to calculate the body fabric consumption of the garment. To identify total fabric consumption we need to calculate the rib consumption of the garment. From total Fabric consumption we identified the required amount of yarn and cotton for making the garments. To identify the length and width of Ladies' pant, measurement of waist band, outside seam, Waist Circumference, height at crotch have been measured which finally help to determine the total fabric consumption. Then the consumption of yarn and cotton fiber are calculated from the total fabric consumption. Then the total amount of sewing thread required for producing the men's t-shirt, Ladies' t-shirt & pant are calculated.[10-11]

III. CONSUMPTION

A) Men's T-Shirt

Fabric consumption:

Body Length = CBL to Bottom Hem (73 cm) + Allowance (5 cm) = 78 cm

Sleeve Length = 25cm + 5cm (Allowance) = 30 cm

Total Length = 78 cm + 30cm = 108 cm

Width = 1/2 Chest (58cm) + Side seam Allowance (8 cm) = 64 cm

$$\begin{aligned} \text{So, Body fabric consumption} &= \frac{\text{Length} \times \text{width} \times 2 \times 12 \times G.S.M}{100 \times 100 \times 100} \\ &= \frac{108 \times 124 \times 2 \times 12 \times 180}{100 \times 100 \times 100} \\ &= 3\text{kg/DZ} \end{aligned}$$



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Rib Consumption:

Length= Neck Length (42 cm) + Allowance (6 cm) =48 cm

Width= Neck width (3 cm) + Allowance (6 cm) =9cm

$$\begin{aligned} \text{Rib consumption} &= \frac{\text{Length} \times \text{Width} \times 12 \times \text{GSM}}{100 \times 100 \times 100} \\ &= \frac{48 \times 9 \times 12 \times 220}{100 \times 100 \times 100} \\ &= 0.1 \text{ Kg/ DZ} \end{aligned}$$

Total Fabric Consumption = Body Fabric (S/J) (3Kg) + Rib (0.1Kg) = 3.1Kg/DZ

Yarn Consumption:

Total Fabric Consumption + Wastage
= 3.1Kg + 25%
= 3.875Kg

Cotton Consumption:

Total Yarn Consumption + Wastage
= 3.875Kg + 18%
= 4.57Kg/DZ

B) Ladies' T-Shirt

Similarly, fabric consumption, yarn consumption and cotton consumption of ladies' T-Shirt have been found out by taking measurement of Ladies' T-shirt and following formulations which have already used on T-shirt. We can get the following consumption of Ladies' T-shirt.

Fabric consumption: 2.3 Kg/DZ

Yarn Consumption: 2.875 Kg/DZ

Cotton Consumption: 3.3925Kg/DZ

C) Ladies' Pant

For taking measurement of Ladies' pant following formula should be used to find out length & width of the pant. Then others formulations of T-shirt will be used similarly to find out fabric consumption, yarn consumption and cotton

consumption, we can get the following consumption of Ladies' T-shirt.

Length :

(Waist band height*2) + Allowance = (3*2) + 1.5 = 7.5 inch
(Outside Seam – Waist band height) + Allowance = (26.25 – 3) + 1 = 24.25 inch

So, Total Length = (24.25 * 4) + 7.5 = 104.5 inch = 261.25 cm

Width:

(Waist Circ. + Thight at crotch) / 2 = (31 + 23) / 2 = 27inch = 67.5 cm

We also get the following consumption of Ladies' Pant.

Fabric consumption: 2.75 Kg/DZ

Yarn Consumption: 3.4Kg / DZ

Cotton Consumption=4Kg / DZ

Sewing Thread Consumption

To sew the products, sewing thread is an inevitable element. To measure the sewing thread consumption, we have measured seam lengths by measurement tape and then calculated how much length has been used.

Table1: Thread Consumption of three different garments

Items	Thread Consumption
Men's T-Shirt	102.5 meter/piece
Ladies' T-Shirt	105.568 meter/piece
Ladies' Pant	94,14 meter/piece

Costing

We have collected cost list from DBL Group, a renowned knit factory. Then the cost list is converted according to consumptions.

Table2: Different types of costing to produce three different garments

Cost Sectors	Men's T-Shirt	Ladies' T-Shirt	Ladies' Pant
Cotton Consumption Cost/DZ	\$2.3	\$1.7	\$2
Yarn Consumption Cost/DZ	\$14	\$10.49	\$12.24
Fabric Knitting Cost/DZ	\$.39	\$.29	\$.34
Dyeing Cost/DZ	\$2.418	\$2	\$2.145
Washing Cost/DZ	\$4	\$1	\$1
Accessories Trimmings Cost/DZ	\$8	\$8.4	\$8.09
Printing Cost/DZ	\$2	\$2	\$1
Making Cost/DZ	\$6	\$5	\$6
Total Direct Cost/DZ	\$39	\$30.88	\$32.815
Indirect Cost/DZ	\$.975	\$.975	\$.975
Total Cost/DZ	\$39.975	\$39.975	\$33.79
Selling Price	\$47.97	\$38.22	\$40.248

Price of Men's T-Shirt = \$4/piece

Price of Ladies T-Shirt = \$3.2/piece

Price of Ladies Pant = \$3.354/piece

IV. RESULT AND DISCUSSION

The costing is very dynamic process; at international level negotiation is done only on cost of production or most popularly known FOB of the garment. Hence, merchandiser should be very careful while negotiating the cost of garment with the buyer. [7] In our study it is found that in case of Men's T-Shirt, Fabric consumption is higher than that of Ladies' T-Shirt and Pant. Therefore, Yarn and Cotton consumption used in Men's T-Shirt is more compared to other two items. But, considering thread consumption, in Ladies' T-shirt, comparatively more thread has been used. However, considering all things, selling price of Men's T-Shirt is higher compared to the remaining two items. There are less dissimilarity between Ladies' T-Shirt and Pant regarding to all factors. Ladies' Pant has domination over Ladies' T-Shirt regarding to consumptions, costs and selling price except printing cost. Printing cost of Ladies' T-Shirt is higher than that of Ladies' Pants.

V. CONCLUSION

Garment prices are mainly based on the fabric consumption. It needs sound knowledge and good practical experience to find out the fabric consumption. The cost of the fiber will depend largely on its generic type - cotton, linen, wool, silk, rayon, nylon, polyester, polyester cotton blend etc, and also its quality. The Yarn cost will depend on the count of the yarn -- finer the yarn, more expensive it will be. Number of fine filaments used in making the yarn will also affect the cost. Quality is also so much related with costing. When buyer want more soft feeling, smooth, brightness and other requirement then cost will be increased. Due to quality various type of processes, equipment and raw materials are added. So, cost must be increased. Here all the calculation is done in F.O.B. order. When it will be done in C. &F, and C.I.F. order the cost will be increased as the cost of insurance and freight will be added.

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