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EMPIRICAL ANALYSIS ON THE DECLINE OF PRODUCTION IN COTTON-BASED TEXTILE MILLS IN COIMBATORE

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Abstract

Textile industry in Coimbatore has a long history of being one of the main reasons to the growth of economy in Coimbatore in specific and the whole of India in general. This industry has been providing the country with numerous jobs and a strong contributor to the foreign exchange. But such industry which once was in great flourishment is not being faced with so many factors and there is a depletion in the cotton production. This paper is intending to analyse empirically the reasons for the depletion in the production of cotton in Coimbatore.

Keywords: *Coimbatore, Cotton and Production.*

Introduction

Study design:

Cross sectional study

Study setting:

This research was carried out at the cotton-based textile mills in Coimbatore.

Study duration:

April 20 to May 8, 2025

Study population:

The respondents are from the textile mills in Coimbatore. The respondents are categorised based on their designation ranging from owner, Manager, Supervisor and Consultant.

Sample size and sampling:

116 respondents working in the cotton-based textile mills were included in the research. Participants are chosen on the basis of purposive sampling.

Study Instruments:

A presented and structured questionnaire containing the details on 2 sections was used for the study was used in

the research. Section 1 included demographic characteristics such as age, designation, details relating to the duration of association of employees with the mills, size of the production facility. Section 2 consists of details on cost and scarcity of raw cotton, All the questions in section 2 have the options of responses in the form of 3-point Likert scale ranging from agree to disagree.

The degree of association between the critical factors such as availability of raw materials, production levels of textile units, imports and the level of awareness among the respondents regarding relevant government policies and trade regulations.

Data collection: After obtaining the consent, a presented semi structured questionnaire containing the details on demographic variables and the possible questions were administered through questionnaire method.

Operational definition

a. Mills with an annual production capacity of < 50, 000 kg were considered as small sized production facility.

b. Mills with an annual production capacity of 50,000 to 2,00,000 kg were considered as medium sized production facility.

c. Mills with an annual production capacity of > 2,00,000 kg were considered as large sized production facility.

Data analysis

The data obtained was entered in Microsoft Excel sheet and analysed using SPSS. Quantitative variable like age was summarised as mean and standard deviation. Qualitative variables like designation, size of production facility were summarised as percentage / proportions. To find the association between the categorical variables such as the availability of raw materials, production levels of textile units, Imports and the level of awareness among the respondents regarding government policies and trade regulations, Chi square test was used.

Demographic characteristics of study participants

This study was conducted with 116 participants. Majority of participants 58 (50.43%) belong to the age category of 40-49 years.

Table 1.1: Age (N=116)

Variables	Frequency (Percentage)
Age (years)	
20-39	31 (26.7)
40 - 49	59 (50.9)
>60	26 (22.4)

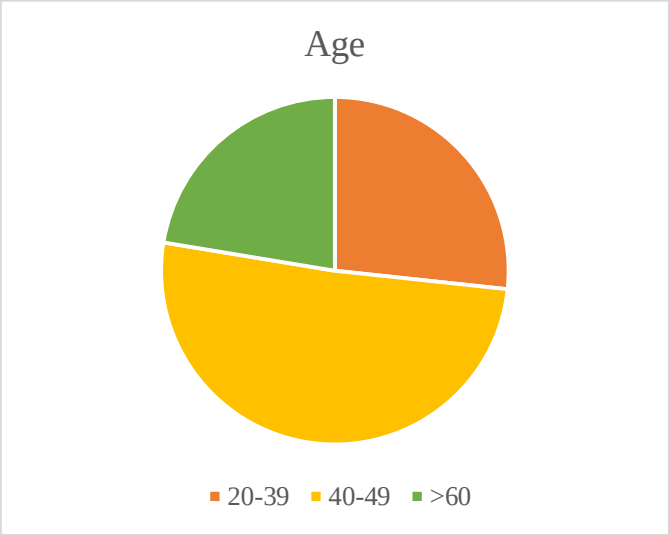


Table 1.2: Designation (N=116)

Variables	Frequency (Percentage)
Designation	
Owner	24 (20.7)
Manager	27 (23.3)
Supervisor	39 (33.6)
Consultant	26 (22.4)

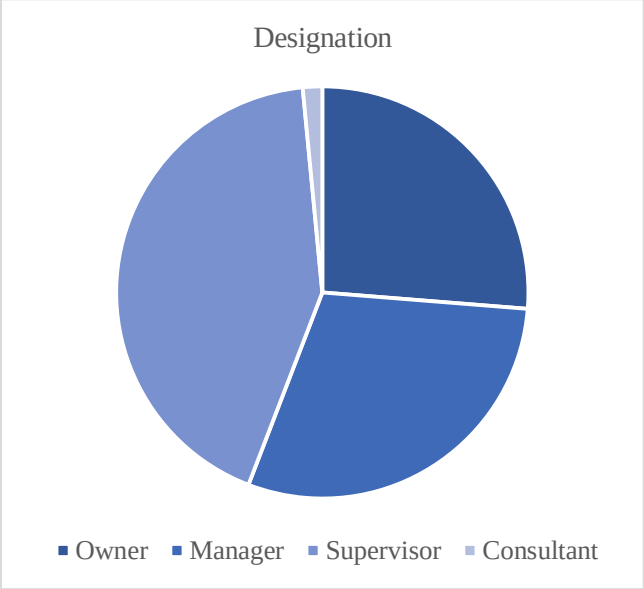


Table 1. 3: Operational period of mills (N=116)

Variables	Frequency (Percentage)
How long has your mill been in operation (years)	
<1 year	22 (19)
1-5	21 (18.1)
6-10	24 (20.7)
>10 years	49 (42.2)



Table 1.4: Size of Production facility (N=116)

Variables	Frequency (Percentage)
Size of the production facility	
Small (<50,000 kg/year)	31 (26.7)
Medium (50,000 to 2,00,000 kg/year)	26 (22.4)
Large (>2,00,000 kg/year)	59 (50.9)

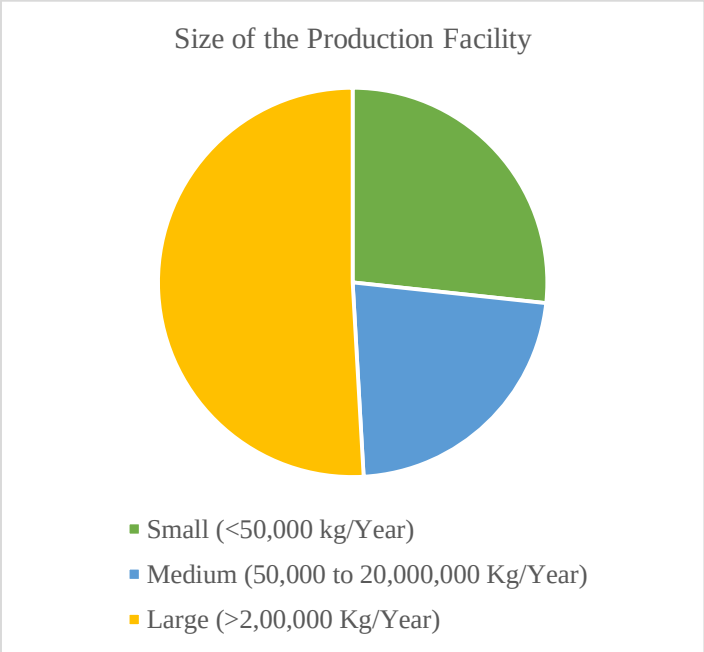


Table: 1.5

Association between size of facility production and the impact of rising cost on yarn production capacity

Variables	The rising cost of raw cotton has impacted our mill's ability to continue yarn production in Coimbatore. n (%)				Chi square (sig)
Size of production facility	Agree	Neutral	Disagree	Total	34.384 (0.000)*
Small	7 (6)	11 (9.6)	13 (11.2)	31 (26.7)	

Medium	11 (9.5)	8 (6.9)	7 (6)	26 (22.4)	
Large	49 (42.2)	6 (5.2)	4 (3.4)	59 (50.9)	

From the above table, it is observed that 49(42.2%) of respondents from large facilities agreed that rising cotton prices have affected their production. On the other hand, only 7(6%) from small facilities agreed and this difference is statistically significant (Chi square: 34.384, significance: 0.000).

Table: 1.6

Association between size of facility production and the unavailability of adequate quantity of raw cotton

Variables	Raw cotton is currently difficult to procure in adequate quantity. n (%)				Chi square (sig)
Size of production facility	Agree	Neutral	Disagree	Total	
Small	14(12.1)	6 (5.2)	11 (9.5)	31 (26.7)	8.767 (0.067)
Medium	18 (15.5)	3 (2.6)	5 (4.3)	26 (22.4)	
Large	38 (32.8)	14(12.1)	7 (6)	59 (50.9)	

From the above table, it is observed that 38(32.8%) of respondents from large facilities agreed that raw cotton is currently difficult to procure, while 14(12%) and 18(15%) of respondents from small and medium facilities respectively agreed that raw cotton is currently difficult to procure. However, this difference is not statistically significant.

Table: 1.7

Association between size of facility production and the impact of unavailability of raw cotton on yarn production

Variables	We have reduced or stopped yarn production specifically due to unavailability of raw cotton. n (%)				Chi square (sig)
Size of production facility	Agree	Neutral	Disagree	Total	
Small	16(13.8)	9 (7.8)	6 (5.2)	31 (26.7)	12.435[a] (0.014)*
Medium	10 (8.6)	6 (5.2)	10 (8.6)	26 (22.4)	
Large	43 (37.1)	9(7.8)	7 (6)	59 (50.9)	

From the above table, it is observed that 43(37.1%) of respondents from large facilities agreed that they reduced or stopped yarn production due to raw cotton unavailability, while 16(13.8%) and 10(8.6%) small and medium sized facilities agreed that they reduced or stopped yarn production due to raw cotton unavailability. This difference is statistically significant (Chi sq: 12.435, significance: 0.014).

Table: 1.8

Association between size of facility production and the role of inadequate government price regulation on cotton price fluctuation.

Variables	Cotton price fluctuations are influenced by a lack of government price regulation. n (%)				Chi square (sig)
Size of production facility	Agree	Neutral	Disagree	Total	
Small	19(16.4)	6 (5.2)	6 (5.2)	31 (26.7)	12.954[a] (0.012)*
Medium	8 (6.9)	7 (6)	11 (9.5)	26 (22.4)	
Large	40 (34.5)	12(10.3)	7 (6)	59 (50.9)	

From the above table, it is observed that 40 (34.5%) of respondents from large facilities agreed that cotton price fluctuations are influenced by a lack of government price regulation, while 8 (6.9%) of medium and 19 (16.4%) small sized facilities agreed that cotton price fluctuations are influenced by a lack of government price regulation. This difference is statistically significant. (Chi square: 12.954, p value: 0.012)

Table: 1.9

Association between size of facility production and domestic scarcity or high prices.

Variables	Our mill has considered importing cotton due to domestic scarcity or high prices. n (%)				Chi square (sig)
Size of production facility	Agree	Neutral	Disagree	Total	
Small	19(16.4)	6(5.2)	6(5.2)	31(26.7)	18.319[a] (0.001)
Medium	8(6.9)	7(6.0)	11(9.5)	26(22.4)	
Large	40(34.5)	12(10.3)	7(6.0)	59(50.9)	

From the above table, it is observed that 40 (34.5%) of respondents from large facilities agreed about considering importing cotton due to domestic scarcity or high price , while 8 (6.9%) of medium and 19 (16.4%) small sized facilities agreed about considering importing cotton due to domestic scarcity or high price. This difference is statistically significant. (Chi-square = 18.319, p = 0.001).

Table: 1.10

Association between size of facility production and a decline in domestic demand for cotton yarn.

Variables	Our mill has experienced a decline in domestic demand for cotton yarn. n (%)	Chi square (sig)

Size of production facility	Agree	Neutral	Disagree	Total	
Small	11(9.5)	13(11.2)	7(6.0)	31(26.7)	10.197a (0.037)
Medium	17(14.7)	2(1.7)	7(6.0)	26(22.4)	
Large	34(29.3)	13(11.2)	12(10.3)	59(50.9)	

From the above table, it is observed that 34(29.3%) of respondents from large facilities agreed about having experienced a decline in domestic demand for cotton yarn., while 17(14.7%) of medium and 11(9.5%) small sized facilities experienced a decline in domestic demand for cotton yarn. This difference is statistically significant. (Chi-square = 10.197, p = 0.037, which is < 0.05).

Conclusion

It is concluded that the majority of the significant findings are aligned with the core issues affecting loom operations such as material shortages. Therefore, the null hypothesis (H_0), which proposed no significant relationship, is rejected. The alternative hypothesis (H_1) is accepted, affirming that there is a statistically significant relationship between the disruptions in loom operations and the decline in cotton-based textile production in Coimbatore.

QUESTIONNAIRE

1. Name:
2. Age
   a) 20 -39
   b) 40 -59
   c) More than 60
3. Designation:
   a) Owner
   b) Manager
   c) Supervisor
   d) Consultant
4. How long has your company/mill been in operation?
   a) Less than 1 year
   b) 1-5 years
   c) 6-10 years
   d) More than 10 years

5. What is the size of your production facility?

a) Small (less than 50,000 kg/year)

b) Medium (50,000–200,000 kg/year)

c) Large (more than 200,000 kg/year)

High Cost and Scarcity of Raw Cotton

1. The rising cost of raw cotton has impacted our mill's ability to continue yarn production in Coimbatore.
   a) Agree
   b) Neutral
   c) Disagree
2. Raw cotton is currently difficult to procure in adequate quantity for our mill's needs.
   a) Agree
   b) Neutral
   c) Disagree
3. We have reduced or stopped yarn production specifically due to unavailability of raw cotton.
   a) Agree
   b) Neutral
   c) Disagree
4. Cotton price fluctuations are influenced by a lack of government price regulation.
   a) Agree
   b) Neutral
   c) Disagree
5. Our mill has considered importing cotton due to domestic scarcity or high prices.
   a) Agree
   b) Neutral
   c) Disagree
6. Our mill has experienced a decline in domestic demand for cotton yarn.
   a) Agree
   b) Neutral
   c) Disagree