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ISSN (Online) : 2455 - 3662
SJIF Impact Factor :5.148

EPRA International Journal of **Multidisciplinary Research**

Monthly Peer Reviewed & Indexed
International Online Journal

Volume: 4 Issue:11 November 2018



Published By :
EPRA Journals

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**EPRA International Journal of
Multidisciplinary Research (IJMR)**

**INDUSTRIAL WASTE EMISSION AND
ENVIRONMENTAL ISSUES -A STUDY WITH SPECIAL
REFERENCE TO TEXTILE INDUSTRY IN TIRUPUR
DISTRICT**

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ABSTRACT

The purpose of this paper is to examine the industrial waste emission and environmental issues in textile industry in Tirupur. The pollution of water, air, noise and health issues is probably a more acute problem. The textile industry process like, bleaching and dyeing units utilize excess amount of water, yet a large portion of the water utilized by these units is released as effluents containing a variety of dye and chemical. These units release almost 90 mld of effluents on land or into the Noyyal River, prompting pollution of the ground and surface water and soil in and around Tirupur and downstream. The dyeing\ bleaching units were extremely polluted so, the government of Tamil Nadu issued an order for the commission effluent treatment plant. To achieve the objective of the study, the researcher used the descriptive analytical method and a convenience sample consisting of 132 public respondents nearest in textile industry in Tirupur. The results of the study prove that there is no significant difference between the environmental pollution and income of the respondents. Based on the findings various suggestions are provided by the researcher.

KEYWORDS: *Environmental issues, Pollution, Textile Industry.*

INTRODUCTION

Tirupur is the biggest and quickest developing city in Tamil Nadu. It is the biggest city in Tamil Nadu. It has developed as a 'Municipal Corporation' and is the Headquarter for the recently framed Tirupur District. It is the 32nd District of Tamil Nadu and one among the ten well industrialized and financially created regions of Tamil Nadu. It had pulled in the consideration of both the arrangement creators and businessmen at the national and universal levels, principally in light of the fact that of its constant business development and its outstanding execution. It is prevalently known as "Banian City" of the South India. The knitwear Industry which is the spirit of Tirupur has made thousands of occupations for all classes of individuals. Tirupur, 50kms from Coimbatore district of Tamil Nadu has developed as a leading cotton knitwear industrial group in South India both in an overseas market and the residential showcase, primarily on the grounds that the climatic conditions (high temperature and low rainfall) encourage simple processing of yarn. In addition, accessibility of raw material and cheap labor force has guaranteed that the textile industry exercises here experienced quick development over the most recent two decades. Today, almost 80 percent of India's cotton knitwear exports happening from

Tirupur. There are 6,250 units associated with different tasks of the textile industry here and has 4900 knitting and sewing units, around 736 dyeing and bleaching units, 300 printing units, 100 embroidery units and 200 units taking into account compacting, raising and calendaring. Purchasers from around 35 nations visit Tirupur as often as possible. This residential community every year contributes

about INR.11000 crores (Rs. 110 billion) in foreign exchange income in our nation, other than a procuring, coordinating or surpassing the above figure to provide the residential market. In brief, the economy thriving of Tirupur depends exceptionally on this industry and the majority poor people of this neighborhood are in one way or another involved in the knitwear business. In 1991, the Orathupalayam dam was constructed on the Noyyal River. But instead of serving its purpose, it became a storage tank for wastewater as the textile units started releasing their effluent into the dam's reservoir. This effluent could neither be discharged of groundwater aquifers. The effect of pollution was noticed when there was a great economic loss for farmers in the downstream areas of Erode and Karur districts, in addition to contaminating the river Cauvery.



The environmental parameters are liable to be influenced by industrial activities. Today the issue of pollution is no more a regional or national issue; it is to be sure a world issue. The waste minimization applies to hazardous materials, non-hazardous materials, water, energy, raw materials, all waste emissions, and other resources. It is not a one-off activity, but an on-going program. The Vellore Citizens Welfare Forum (VCWF) has opposed the move by the Central government to set up a textile park in Tamil Nadu, particularly in Tirupur on the grounds that the cluster would aggravate the already serious problem of pollution caused by the dyeing units in Tirupur. Referring to the news item titled, 'Centre to set up 15 more textile parks' which appeared in *The Hindu* dated January 10, 2015, P.S. Subramanian, honorary secretary of the forum said in a statement that Tirupur. Even though

textile industry is part and parcel of Tirupur district and also various problems related to this industry like water pollution, air pollution, noise pollution and some of the other health issues. This paper deals with the issues of textile industry in Tirupur district.

REVIEW OF LITERATURE

Dr.Ajeet Jaiswal (2015)¹ in this study investigated to industrial health management and safety in the textile industry.the main objectives of occupational safety and health programs include to foster a safe and healthy work environment.thus the researcher found that the conceivable solution for these issues depicting the major safety and health issues in textiles industry like workplace hazards, exposure to cotton dust, exposure to chemicals, exposure to noise, ergonomic issue and healthcare and social assistance.

Dr.Ajeet Jaiswal (2015) Industrial health management and safety in the textile industry.International journal

of business intelligence and innovations ISSN 23484705.special volume issue October 2015.

Dr.Md.Abdus Shahid¹,Salma Katun Sela² et al (2017)² in this study examines the waste minimization is the application of a systematic approach to reducing the generation of waste at source. The main goal in this paper are focus point was the general waste minimization suggestions for reducing water,chemical and energy consumption, reducing solid waste and minimizing the emission of toxic substances.

Dr.Md.Abdus Shahid¹,Salma Katun Sela² et al (2017) Waste minimization in textile industry.Textile today driving business with knowledge.

Tiwari, Meenaxi and Babel, Sudha (2013)³ In this study, the researcher identifies textile industry is plagued by air pollution problems which must be resolved. Specifically,smoke and smell emerging in the process require decrease. Air pollution is the introduction of chemicals, particulate,or biological material that causes harm or discomfort to humans or other living organisms, or harms the natural environment into the atmosphere. Oil mist and organic emissions produced when textile materials containing lubricating oils, platicizers, and different materials that can volatilize or be thermally degraded into volatile substances, are subjected to heat. Exhaust gases emanate from polycondensation of melt spinning fibre lines. Dust and lint are produced by the processing of natural fibres and synthetic staple prior to and during spinning, as well as by napping and cover shearing.

Tiwari, Meenaxi and Babel, Sudha (2013) Air Pollution in Textile Industry.Asian J. Environ.Sci.,8(1): 64-66

Statement of problems

Tirupur is a fast growing hosiery 'industrial city' in Tirupur district of Tamil Nadu. It is located on the bank of the Noyyal River, a tributary of the Cauvery. At present 9000 knitting, processing, dyeing, Manufacturing, etc., the bleaching and dyeing units are utilizing large quantities of water, and however a large portion of the water used by these units is released as effluents containing a variety of dyes and chemical substances. These units release almost 90 m/d of the effluent land or into the Noyyal River, prompting sullyng of the ground and surface water and soil in and around Tirupur and downstream. There has been an altering weakening in the environmental quality and living conditions of the residents. The Tirupur city has been polluted by transfer of sewage, sullage, hospital and chemical industrial effluents into the Noyyal River. Little and large industries like cotton, spinning and wearing mills, Transport types of gear, chemical industrial, tannories, Rice mills, Biting the dust factories. Manufacturing industries and so forth are polluting Noyyal River day by day. Hence the study

focuses on the pollution issues related to the water, air, noise, and health issues in textile industry in Tirupur.

Objective of the study

1. To analyze the environmental issues in Tirupur district because of textile industry.
2. To determine the causes of environmental issues because of textile industry in Tirupur District.
3. To measure the perception of the general public regarding the environmental issues in Tirupur district.

HYPOTHESIS

H₀:there is no significant difference between environmental pollution (causes by industries) and income of the respondents.

RESEARCH DESIGN

In this research, quantitative research methodology was utilized. Since quantitative research incorporates overview and questionnaire. Quantitative research is tied in with approaching people for this opinion in a structured way so research can create hard actualities and statistics to guide you. To get reliable statistical results, it's important to survey people in fairly substantial numbers and to ensure they are a representative sample of the target. This was done with the objective to discover the industrial waste emission and environmental in textile industry in Tirupur district.

DATA SOURCES

The data collected for the study are for the most part through the distribution of questionnaires; to be exact the data collection for the study was both primary and secondary sources.

The principle source of data is the primary source by using a questionnaire method. A questionnaire comprises of a number of questions printed in a definite order on a shape or set of structures. The researcher distributed 132 questionnaires to the selected sample and gathered the filled questionnaires from the respondents. Among the 132 distributed 107 questionnaires were collected and utilized for the purpose of analysis.

RESEARCH INSTRUMENT

In this study, the primary data were collected by the survey strategy of distributing the questionnaires to the respondents. The researcher structured the questionnaire in the form of Multiple Choice Questions.

SAMPLING DESIGN

Sampling design is to clearly define the set of objectives, actually called the universe to be examined. Sampling strategy utilized is Convenience sampling method.

SAMPLE SIZE

This refers to the number of items to be chosen from the universe to constitute a sample. The sample size for this study was taken as 107.

Environmental Issues in Tirupur district
Water Issue

Environmental issues related to the textile industry are regularly associated with water pollution caused by the release of untreated gushing. Gushing is by and large hot, antacid, and strong smelling, and colored by chemical substances utilized as a part of colored process.

A portion of the chemicals, including dyes and shades, are toxic or can bring down the disintegrated oxygen substance of getting waters, undermine the seagoing life and harm general water quality downstream. Tamil Nadu pollution Control Board, expected that 8, 33,365 tons of risky waste is created each year in Tirupur. It releases almost 90 million liters of effluent water containing bleaching powder, Sulphonic dyes, chemical and other inorganic impetuses. These are dumped into the Noyyal River or in the open waste land. The whole Tirupur relies upon Bhavani River, which is a little more than 60 kilometers from the textile city. The city's ground water has been defiled by the dangerous waste and quickly should discover a solution to tackle this issue, generally Tirupur as well as this pollution will spread over to close-by territories. The release of untreated gushing has as of already harm more than 80,000 sections of land of farmland along the Noyyal Waterway. It has additionally acquired a decrease the yield of products like turmeric and bananas.

Solid waste pollution:

The primary residual wastes generated from the textile industry are non-perilous. These incorporate pieces of fabric and yarn, off-particular yarn and fabric and bundling waste. There are likewise squanders related to the capacity and generation of yarns and textile, such as, chemical stockpiling drums, cardboard reels for putting away fabric and cones used to hold yarn for dye and knitting. The cutting room waste

creates a high volume of fabric scraps, which can frequently be lessened by expanding fabric usage proficiency in cutting and sewing.

Noise issue

Noise is the environmental pollutant created by any industry and spinning and weaving textile industries has no special exception to this. The noise level coming about because of the machines utilized as a part of the textile industry, particularly from the dry procedures, may damage the point of confinement permitted by the law and cause hearing issues. The ring spinning machines, knitting machines, the winding machines, the loom, sewing machines and so forth work at high speeds, along these lines surpass the permitted level of commotion (90 decibels) and cause hearing inconveniences the creation workers.

Air Issue

The textile and apparel industries, additionally discharge waste as air outflows. Be that as it may, the measure of polluted air created is moderately little in contrast with other manufacturing industries. Little measures of waste are discharged at different phases of production, each stage releasing an alternate type emission. Because of the high number of manufacturing stages, there is a wide range of kinds of air pollution/ toxins created by these industries, it is normally hard to control and measure air contamination.

Health issues

The worker engaged in the process and spinning of cotton are exposed to cotton dust and other particles which lead to a respiratory disorder called byssinosis, commonly known as brownlung.

Exposure to chemicals affected diseases by the way of cancer of the nose, lung, brain and blood, which fetal in the long run. Other than cancer, which are notably high in textile worker are of the oral cavity, throat etc.

ANALYSIS AND INTERPRETATION

Reliability Statistics	
Cronbach's Alpha	N of Items
.886	12

The above table shows the Cronbach's Alpha of .886 which indicates a high level of internal consistency of the scale which is used. The minimum acceptable value for Cronbach's Alpha is 0.70. Also, the data are normally distributed.

ANOVA

TABLE 1. Salary of the respondents

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.286	4	1.822	2.717	.031
Within Groups	130.714	195	.670		
Total	138.000	199			

Source: primary data

Interpretation:

Table 1. reveals that the ANOVA for income and environmental pollution in textile industry in Tirupur. the calculated value is 0.031 is less than the

table value . Hence the hypothesis is accepted at 5 percent level and it is concluded that there is no significant between environmental pollution and salary.

TABLE 2. RANKING FOR THE ENVIRONMENTAL POLLUTION CAUSES.

S.NO	FACTOR	TOTAL SCORE (Frequency X Garrett's Score)	RANK
1	Unfiltered water efficient discharge	6458	1
2	Increased usage of toxic chemicals.	6186	2
3	Lack of proper guidelines and regulations by the govt / lack of effective measures taken by the govt.	6173	3
4	The mechanical, thermal and chemical process involved in textile industry	6112	4
5	Lack of awareness among the textile industrialists.	6055	5
6	Difficult to control and measure air pollutants.	6015	6
7	Bleaching and dyeing units use large quantities of water	5767	7

Source: Primary Data

Table 2. Shows that the by using Garrtte's Ranking method ,it is found that the factors unfiltered water efficient discharge is ranked first, followed by Bleaching and dyeing units use large quantities of water is ranked last in this causes.

SUGGESTION

Textile industry directly or indirectly contributes 60 per cent of pollution. Essentially, textile industries utilize the most extreme of water compared to other industries and that is used in wet processing of textiles. In textile, water is the medium for utilization of dyes, chemicals and different finishes on the textile substrate that is quite abundant and inexpensively accessible in nature. After processing, the unit release effluents contain a huge measure of impurities. Direct draining of contaminated water to the environment influence surface water sources, ground water and soils, Which ultimately affects the livelihood of human beings. Sometimes, low financial and the absence of new technological method generates waste water after textile processing.

CONCLUSION

The aim of this paper was to investigate the industrial waste emission and environmental issues in Triupur District. The results of the study found out that these types of environmental issues such as water pollution, air pollution, noise pollution, solid pollution, and health related issues are there in Triupur District due to the operation of textile industries and these problems are the main causes of environmental pollutions in Triupur District, and the main cause of environmental pollution according to the perception of general public is Unfiltered water efficient discharge. The hypothesis is tested that there is no significant relationship between environmental pollution and income of the respondents. Hence the null hypothesis is accepted.. The study concluded that the textile industry is plagued with by air pollution problems which must be resolved. In particular, smoke and odor arising in the process require abatement. The contamination of ground and surface waste of spoils the Noyyal river, the government should take necessary steps in protecting and conserving the natural resources of the society.