

A study of Problems Faced by Textile Industry in India

Sheelratan S. Bansode¹, Rahul B. Hiremath²

¹ Mechanical Engineering Department, Walchand Institute of Technology, Solapur, Maharashtra

² Symbiosis Centre for Management and Human, Resource Development, SCMHRD, Symbiosis International (Deemed University), SIU, Hinjewadi, Pune, Maharashtra, India

¹ssbansode@witsolapur.org, ²rahulhiremath@scmhrd.edu

ABSTRACT

The current work reviews the present situation of the powerloom industry and clearly states that the sector is under hold of several problems like health and safety, pollution etc. These problems cause trouble to the functioning of powerloom industry in sustainable manner.

Keywords

powerlooms, textiles, problems, sustainable

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Introduction

The textile industry is a facing risk and uncertainty at every stage of its process. Depending on the size of the unit the level of risk and uncertainty depends affecting the profitability. The manufacturers are trying their best to increase the profit and increase the share of export. Some of the researchers have worked in this context, where as a booster for economic growth Singh, R. K., & Garg, S. K. (2008) studied the problems faced and the growth of the SME's (including textile). Due to the shortage of resources and lack of development the export is less along with this product design, knowledge loss, training and connections are the few more problems faced by these industries. These industries do not follow any framework for developing the competitiveness

The study of powerloom industry was carried out by Chorghade S.V. (1976) where the work mentioned that the state plays a major role in the development and growth these units by undertaking the extensive study of the problems and the structure of these units in the state. Ansari R. R. (1984) explained the marketing problems of the powerloom units of Malegaon Further Goswami Omkar (1985) adds that power looms and the fully spinning units are doing well as far as demand and supply analysis is concerned. Shahidul and S.T. Syed Shazali (2011) have studied the productivity of labour intensive industries with due consideration of the favourable working environment (FEW) and research and development (R&D) in quantitative manner. Expenditure on FEW and the R&D are positively related to productivity.

Noweir, M. H.(1984) has studied the effect of noise exposure in relation with productivity of textile workers by studying a sample which concludes the association of the extreme experience to workplace noise with productivity problems, absenteeism, safety, and discipline. The socio economic problems of the Malegaon powerloom units was studied by Dolle B.M. (1992) and found out that the units had a bright future but has problems like lack of finance, marketing and labour problems. Mathur D. C. (1993) emphasized on the fact personnel management is important

for better economic results. Sabhoo B. (1993) highlighted the problems of these units and focused on the factor of productivity. Mohapatra B. C. (1998), discusses the factors like technological integration, Skilled labour, marketing innovations for product development and futuristic vision and also studied the effect of government policy changes on the marketing and financial condition of the powerloom industry. The current scenario of the Solapur powerloom industry was carried out by Teli M. D., (2003), and he also studied the market scenario with respect to the change in government policy. The work concluded that the potential for the growth and development exists but technology up gradation is required to get globally competent. Ahuja R. N. (2003) in his work mentions that the problem of technological obsolescence is of concern and further adds that modernization of the technology is the utmost need. Dev M. B. (2008), discusses about the higher power tariff as a challenge to the textile industries of Solapur, he further mentions that lack of skilled labour is also a threat for modernization. Kulkarni P. R. et. al (2010), discussed the current scenario of the power loom industry and its importance in the Indian economy but is deprived of modernization and lack of sufficient operational finance. Moore, S. B., & Ausley, L. W. (2004) have presented the case of productivity improvement through green production in U.S. textile industry. By developing low cost process for waste water treatment and used the same water for the process and mentioned the benefits of this technology. Chakrabarti, K. (1990) has studied innovation in association with growth in productivity of the textile units and introduced as major changes in spinning and weaving.

Health And Safety

According to Babel S. et al., (2014) occupational health of the person working in the industry is of utmost important for not only to have physical maintenance but also to be mentally and psychologically stable. The exposure to chemical, cotton dust, noise and organic dust are the causes of the health issues in textile workers. Praveen Kumar M et

al (2014) mentions that the risk and hazard like physical, chemical, ergonomically & physiologically is high in the textile industry which is given minimum importance. Lack of awareness is the reason for the accidents which is a result of uneducated workers. Also working hours, improper ventilation plays a role in the occupational hazards. Hiremath et al (2014) and Kolgiri S. et al (2017) mention the importance of textiles in country's economy. In their work they carried out the study by taking a sample from the textile unit workers of Solapur city were assessed on the health and safety, where it was found that the many of them were affected by the problems of respiration, eyes sight, musculoskeletal, and muscle tone increase making it as an immediate issue to take corrective measures. For textile process and product Ren X. (2000) developed environmental performance indicators (EPis). Due to the emphasis on the evaluation of the environmental performance requires specific indicators. The indicators are developed for the wet processing and cotton products with feasible values. The discussion on the problems occurred during the development of indicators and applying the same is carried out. Te points that needs to highlighted are for textile industries both process and product perspectives needs to be considered, in case of conflicts between environmental and health issues priorities must be set, criteria can be set up and a framework can be formulated, it is difficult to get the quantitative values for product dimensions due to variety of products thus for this the indicators are applied by comparison of the achievable values. Some Indian studies focus on the health risks of industry workers. Suryakar et al (2010) studied the oxidant and antioxidants status due to exposure to cotton dust resulting into related health issues. Further Agnihotram R. V. (2005) addresses the increasing need for research on evidence-based occupational health. Knutsson A. (2003) discusses about the sleep disorders and accident risk due to working in shifts and also describes the effect of same on the physiological function through disruption of circadian rhythms. The researcher also gives a model to review possible mechanisms of disease in shift workers. Metgud et al (2008) carried out the observational study of the women workers by taking a sample at the start, during and end of the work for the cardiorespiratory and musculo-skeletal profile.

Müezzino (1998), Spiro and Stigliani (1996) and Hendrickson et al (1995) discusses about the health issues of the textile workers due to effluents along with the hazards due to noise, harmful substances, manual loading and unloading of heavy objects, and machineries.

Nazia Malik et al (2010) reports that the workers are mostly uneducated and do not have an awareness regarding the importance of health and safety at the workplace and other facilities like training, accident prevention, hospital facility, safety symbols.

According to James M.G. et al (2009) noise is generated due to the improper design, overloading, and obsolete machineries. Hafiz D. A. et al (2009) talks about the effect of noise and suggest that necessary action must be taken to control the noise in and around the industry premises. Ahmad H. O. et al (2001) further adds that the health of the worker is important as to maintain the quality and

production, also the major problem in the textile is of the noise being generated and this needs to be regulated also Iqbal S M et al. (2007) states that the noise affects the workers mental peace and leads to stress development. Not only noise but according to Tiwari M. et al (2012) nonstop working, lifting of heavy objects, lack of training results into musculoskeletal disorders

Pollution

Mohamed A. H. and Ahmed El N. (2017) report the impact of dyes on the health and surrounding environment. Specifically the synthetic dyes create harmful effects on the environment as well as humans.

Jayanth S. N. et al (2011) through extensive data collection mentions that the much of the work is being carried out to reduce pollution of water bodies but limited work is being done for the policy formation and implementation. The current water utilization, treatment of the effluent and sludge disposal are not done in an sustainable manner which may result into severe damage to the natural system and also affects the work of farmers around the textile industries.

Senthil Kumar P. and Gunasundari E. (2018) discuss the impact of the sustainable wet processing techniques on the environment. Wet processing is a major part of these industries where the quality of the end product is controlled. This process consumes large amount of water, energy and chemicals. Water is used as major source for the dyes and chemicals and gets affected by them resulting into an harmful difficult to treat effluent. This can have a adverse effect on the humans as well as animals and can cause severe health issues. Thus sustainable means of wet processing are necessary to curb the harmful effects. More beneficial methods like the ultrasonic, Plasma, laser, biotechnology digital inkjet printing are now preferred over conventional methods for wet processing. These methods are free from the harmful chemical, waste water and hazards to the textiles.

Ramesh Babu B. (2007) gives a review of cotton textile processing and advanced methods of treating effluent such as bio-treatment, electro-oxidation, membrane processes, and photochemical in the textile industry. Along with many countries in the world India has adopted severe ecological standards for textile units. To reduce the effluents problem necessary measure needs to be implemented with increasing severity in future. The processes carried out in the textile industry like pre-treatment, dyeing, printing and finishing operation consume large quantity of water and energy and generates considerable amount of waste products.

Chavan R. B. (2001) presents the structure, problems of textile industry and also discusses about the impact on the environment and necessary strategies for pollution control.

Sharma D. K. (2015) Textile industry uses large amount of water for the production processes and also in manufacturing of raw materials. Water is used consecutively in every process of textile production. In textile manufacturing use of water is in combination with a number of chemicals and the water used in washing cycles of fabric or yarn carry these chemicals in the waste water. Comparatively use of water is very small with respect to total water used and a big amount of water is discharged as

waste water. Similar is the case of chemicals used. Contents of chemicals used in textile production eventually are discharged as wastewater have substantial environmental impact and cause pollution of the water bodies where these effluents get disposed. This study aims at evaluation of quantity of water consumed and wastewater discharged from every process of textile industry. Study has been conducted in an industrial set up for a period of one year. Data of water consumption and wastewater in textile is of enormous use for benchmark in planning and prioritizing the pollution prevention and wastewater treatment strategies and plan for water use.

Little A. H. (1975) discuss about the processes like scouring, bleaching, dyeing which consume large quantities of water at every stage and their effect. Reuse of 'clean' rinses and purification of effluent are some methods of water conservation and their implication including the variations in the processing, and the effects of cloth weight and batch size.

Sugosh Madhav et al (2018) focuses the processes carried out in the textile and pollution problems due to these with suitable eco friendly alternatives with special focus on the dyeing process which is the important process and generates large amount of pollutants in textiles. The effects of effluents from these processes on the environment along with its effect on water soil, plant and animal health is discussed. Different methods of effluent treatment like the physical, biological chemical, advanced technologies are discussed.

Toprak T, Pervin Anis (2017) highlights the environmental effects of textiles in and add to cleaner production along with sustainability in these units by putting forward a discussion on the opportunities for change in textile processes in agreement with the laws.

Emrah Ozturk et al (2016) Cleaner production assessment was carried out according and data for process evaluation, environmental performance, material flow and the energy consumption was collected and calculation of the input and output values and energy balance was in the textile mill of Denizli, Turkey. Benchmarking of the mill for environmental performance was done against similar textile mill. A list of 92 best available techniques is presented and discussed with the managers for its technical and economic applicability and implementation of these techniques and decisions were made by using Multi-criteria Decision-Making Methods like Simple Ranking Method, Weighting Criteria Method, and Weighted Sum Method. From this 22 BAT such as, water and energy consumption, good management practices, chemical consumption optimization and substitution, optimization-minimization techniques by considering the technical, environmental performances their potential advantages and related savings are discussed. From the implementation of these identified techniques it could be summarized that reduction of 43-51% water consumption, 11-26% energy consumption, 16-39% chemical consumption, 42-52% wastewater flowrate, 26-48% chemical oxygen demand load, 12-32% waste flue gas emissions, and 8-18% solid waste generation can be achieved with a payback period of around 26 months.

Bashar A. K. (2012) Categorization of textile process effluent streams is necessary to build up strategies for water

treatment and its reuse. For treatment optimization and reuse possibilities, waste streams must be considered separately. Pollution due to the chemical processing is 70 %. Waste stream generated in this industry is depends on water-based effluent generated in the different activities of wet processing. The various processes such as sizing, desizing, and scouring, bleaching, mercerization, dyeing, printing, finishing and ultimately washing are the wet processing which consume large volume of water. It has been practically observed that, that 45% material in preparatory processing, 33% in dyeing and 22% are re-processed in finishing. But the real problem is that the effluent generated during various steps is beyond the standard and is highly polluted and dangerous.

Status Of Workers In The Textile Industry

Lucy Norris (2013) argues that the manufacturers from the developing countries must upgrade the strategies which are affected at the local level by the power in horizontal network to have a better deal rather than working hard for increasing the value in global production chain. The examination performance of the local marketing strategies of the handloom industry of the northern Kerala was carried out to capitalize the brand value of the states achievements in social development along with ethical utilization in end market. Cooperatives intend to get more of the labour value of the goods produced by them whereas the merchants work upon aesthetic qualities and maintain regional authenticity. Arif Anjum, D.V Thakor (2011) investigated the performance of the power loom industry and problem faced by the industry workers in Malegaon along with their socio economic development. Recommendation of modernization in terms of the technology up gradation and better marketing was provided along with appropriate measure for the industry and related stake holders.

Uttam Paul (2013), discusses the socio economic development of the powerloom workers of West Bengal along with the nature of employment. Using statistical tools and survey of around 500 workers it is found that the workers in the powerloom industry are illiterate and are not aware of the different schemes and government policies leading to the poor conditions of the workers.

Das S. R. (2015), studied the socio economic condition of the weavers through a interviews of the weavers from Bargarh in Odessa. It was found that the weavers are facing social as well as financial problems and don not have government support.

Chaudhary M. et al suggest that the hand loom and powerloom industry is on the verge of decline after industrialization. The problems of these industries are continuous by nature and to maintain the importance of the industry in terms of the culture and economy necessary actions needs to be taken to study the problems and provide necessary solution to it. The problems found out are the low wages, rise of the raw material price, lack of new technology.

Discussion

At the end it can be mentioned that the textiles do possess the problems that are hindering its progress towards the goal of sustainable manufacturing in form of safe and healthy working environment for the workers and the proper management of the waste being generated by the various processes. Thus proper attentions in the form of new and improved solutions are required to develop the powerloom sector and head it towards a sustainable future. In doing this nature inspired solutions can play a vital role to develop more sustainable solutions. As the researchers have an optimistic approach towards using nature as an motivation to develop living, social and likewise organizational systems which can be explored along with product development.

References

- [1] Singh R. K., and Garg, S.K. (2008). Strategy development by SMEs for competitiveness: a review. *Benchmarking: An International Journal*, 15(5), 525–547.
- [2] Chorghade S.V. (1976). Powerloom Industry in Maharashtra (Unpublished Ph.D. thesis). Nagpur University, Nagpur.
- [3] Ansari R.R. (1984). A Study of Marketing problems of Powerloom Industry in Malegaon City of Nasik District (Unpublished M.Phil dissertation). Nagpur University, Nagpur.
- [4] Goswami Omkar. (1985). Indian Textile Industry 1970-1984: An Analysis of Demand and supply. *Economic and Political Weekly*, XX, No.38, Sept. 21 1985, 1610-1612
- [5] Shahidul M. I., and Shazali, S. T. S. (2011). Dynamics of manufacturing productivity: lesson learnt from labor intensive industries, *Journal of Manufacturing Technology Management*, 22(5), 664-678.
- [6] Noweir M. H. (1984). Noise exposure as related to productivity, disciplinary actions, absenteeism, and accidents among textile workers. *Journal of Safety Research*, 15(4), 163–174.
- [7] Dolle. B.M. (1992). A study of Socio Economic Problems of Powerloom industry in Malegaon (Unpublished Ph.D. thesis) University of Pune, Pune
- [8] Mathur. D. C. (1993). *Personnel Problems and Labour Welfare: A study of cotton textile industry*. New Delhi: Mittal Publications. p.145
- [9] Sahoo B. (1993). *Problems and Prospects of Textile Industry*. New Delhi: Mittal Publications, p.154
- [10] Mohapatra B. C., “Indian Textile Industry”, Vidya Publications, New Delhi, 1998.
- [11] Teli M. D., (2003) *Integrating Indian Textile Industry in to world Economy*, Penquin publication, New Delhi.
- [12] Ahuja R. N., (2003) *Loopholes in Power loom Sector*, New India Publications, Bhopal, (M.P), 2003.
- [13] Dev M.B., (2008), “Indian Power loom Industry”: Challenges and Adversities, *Business World Quarterly*, Vol.12, No.7.
- [14] Kulkarni P. R. and Panse V. C., (2010) “Protective Textile”, *Quarterly Magazine of Wool Research Association*, Jan-March, 2010; Thane
- [15] Moore S. B., and Ausley L. W. (2004). Systems thinking and green chemistry in the textile industry: concepts, technologies and benefits. *Journal of Cleaner Production*, 12(6), 585–601.
- [16] Chakrabarti, K. (1990). Innovation and productivity: An analysis of the chemical, textiles and machine tool industries in the U. S. *Journal of Research Policy*, 19, 257–269.
- [17] Babel S. and Tiwari M., (2014) Occupational health hazards in textiles industry, *Hind Institute of Science and Technology*, Volume 9, Issue 1
- [18] Praveen Kumar M, Mugundhan. K, Visagavel.K (2014). Occupational Health & Safety in Textile Industry. *International Journal of Research in Engineering and Technology*. 03. 168-172. 10.15623/ijret.2014.0323037.
- [19] Hiremath R, Kattumuri R, Kumar B, Hiremath G. (2014) Health and safety aspects of textile workers from Solapur

- (India) textile industries. *Ind J Comm Health*;26(4):364–369.
- [20] Ren, X. (2000). Development of environmental performance indicators for textile process and product. *Journal of Cleaner Production*, 8, 473–481.
- [21] Suryakar AN, Katkan RV, Dhadke VN, Bhogade R. B. (2010) A study of oxidative stress in cotton industry workers from Solapur city. *Biomedical Research*;21:260-264.
- [22] Agnihotram R V. (2005), An overview of occupational health research in India. *Indian J Occup Environ Med*;9 (1):10-4
- [23] Knutsson A. (2003), Health disorders of shift workers. *Occupational Medicine*;53 (2): 103-108.
- [24] Metgud D. C., Khatri S., Mokashi M.G., Saha P.N. (2008), An ergonomic study of women workers in a woolen textile factory for identification of health-related problems. *Indian J Occup Environ Med*. Apr; 12
- [25] Muezzino A. (1998), Air pollutant emission potentials of cotton textile manufacturing industry. *Journal of Cleaner Production*,; 6:339–347.
- [26] Nazia M, (2010) Role of hazard control measure in occupational health and safety in the textile industry of Pakistan, *pak j.agri sci* vol 47(1), 72-76.
- [27] James M. G., Juliana M. M., Wilson K.B., Zachary N. (2009) Noise induced hearing loss among textile industry workers in Eldoret, KENYA
- [28] Hafiz D. A., Frequency of hearing loss among textile workers of wearing units in Karachi, Pakistan.
- [29] Ahmad H O. , Dennis J. H., Badran O., Ismail M., Ballal S. G., Ashoor A., (2001), Occupational noise exposure and hearing loss of workers in two plants in eastern Saudi Arabia. *Ann Occup Hyg*; 45: 371-80.
- [30] Iqbal S.M., Khan I.A., Ishtiaq A.K. (2007), Occupational noise induced hearing Loss. *Pak J Otolaryngol*; 23: 12-6.
- [31] Tiwari M.. (2012), Causes of musco-skeletal disorders in textile industry”, *Issn* 2329-3563.vol 1(4), 48-50,December.
- [32] Mohamed A. H., Ahmed El N., (2017), Health and Environmental Impacts of Dyes: Mini Review. *American Journal of Environmental Science and Engineering*. Vol. 1, No. 3, pp. 64-67. doi: 10.11648/j.ajese.20170103.11
- [33] Jayanth S. N., Karthik R, Logesh S, Srinivas Rao K, Vijayanand K (2011), Environmental issues and its impacts associated with the textile processing units in Tiruppur, Tamilnadu, 2011 2nd International Conference on Environmental Science and Development, IPCBEE vol.4 (2011) © (2011) IACSIT Press, Singapore
- [34] Senthil Kumar P. and E. Gunasundari (2018), Sustainable Wet Processing—An Alternative Source for Detoxifying Supply Chain in Textiles, *Detox Fashion, Textile Science and Clothing Technology*, DOI 10.1007/978-981-10-4876-0_2
- [35] Ramesh Babu B, Parande AK et al (2007) An Overview of Wastes Produced During Cotton Textile Processing and Effluent Treatment Methods, *The Journal of Cotton Science* 11:110–??? (2007)
- [36] Chavan R. B. (2001), Indian Textile Industry-Environmental Issues, *Indian Journal of Textile and Fibre Research*, Volume 26, pp 11-21
- [37] Sharma D.K. (2015), Water and Wastewater Quantification in a Cotton Textile Industry, *International Journal of Innovative Science, Engineering & Technology*, Vol. 2 Issue 6, June 2015.
- [38] Little A. H. (1971), Use and Conservation of Water in Textile Processing, *Journal Of The Society of Dyers And Colourists*, Volume 87
- [39] Sughosh M., Arif A., Pardeep S., Pradeepkumar M., (2018), A review of

textile industry: Wet processing, environmental impacts, and effluent treatment methods, *Environment Quality Management* 2018;27:31–41, wileyonlinelibrary.com/journal/tqem

Int. J. of Trade and Commerce- IIARTC, Vol. 4, No. 1, pp. 92-105

- [40] Toprak T, Anis P. (2017) Textile industry's environmental effects and approaching cleaner production and sustainability, an overview. *J Textile Eng Fashion Technol.*;2(4):429–442. DOI:10.15406/jteft.2017.02.00066
- [41] Emrah O., Hasan K., Mustafa K., Nevzat O. Yigit, Ulku Y., Mehmet K. (2016), Sustainable textile production: cleaner production assessment/eco-efficiency analysis study in a textile mill, *Journal of Cleaner Production*, doi: 10.1016/j.jclepro.2016.02.071.
- [42] Bashar A. K. (2012), A report on Textile Manufacturing Process, Pollution and Pollution Control, submitted to Department of Environmental Sciences, Jahangirnagar University, Dhaka
- [43] Lucy N., (2013), Aesthetics and ethics: Upgrading textile production in northern Kerala, *Geoforum* 50 (2013) 221–231
- [44] Arif A, Thakor D. V., (2011), An Analytical Study of the Functioning and the Problems of the Powerloom Industry in Maharashtra with Special Reference to Malegaon Dist. Nashik, *International Journal of Trade, Economics and Finance*, Vol. 2, No. 3,
- [45] Paul U. (2013), A study of socio economic status of workers in the unorganized powerloom sector of West Bengal, *Global Advanced Research Journal of Agricultural Science*, Vol. 2(2) pp. 065-073,
- [46] Das S. R. (2015). Dissertation on Socio-Economic Profile of Handloom Weaving Community: A Case study of Bargarh District Odisha. pp. 1-45.
- [47] Chaudhary M, Saini A, Solanki R (2015), "Problems Faced by Handloom & powerloom Industries in Uttar Pradesh",