

## **Examining on Technology Automation Towards Textiles With Special Reference To Tirupur District**

Dr. T.GAYATHRI<sup>1</sup>, D.RAJKUMAR<sup>2</sup>,

<sup>1</sup>Assistant professor Department of Commerce, Nehru Memorial College (Autonomous),  
Puthanampatti 621007, Tiruchirappalli (Dt)

---

**ABSTRACT:-** Weaving threads together into textile is an age old art. The mecanisation followed by the automatic control of the process resulted in an acceleration of production while the conception and design procedures became more complex. The conception of the weave and the fabric can hardly be put under automatic control because of their artistic nature. On the other hand a preparation realized under technical constraints has to follow certain rules and we have introduced these into a computer. We have adopted a conversational mode to realize such a tool to aid fabrication. The operator can dialogue with the computer and he has the possibility to modify the fabric and the weave without having to worry about the calculations involved. These programs allow the weaver to construct a weave directly on a display screen by successive dialogues with the computer. During this construction the operator can get all the necessary technical details regarding the weave characteristics. Based on these results, he can modify, if necessary, the initial motif. The weave can then either be used directly or be modified (symmetry, rotation or by superposition of several weaves) before use. The juxtaposition of several weaves helps create the fabric. The warp-drawing-in and perforated card plans necessary to realize the textile on a dobby-loom are then computed so as to minimise the number of dobby-jacks to be employed in Tirupurtextiles.

**Keywords:** *New technology, automation in textiles growth.*

---

### **I. INTRODUCTION**

#### **MEANING OF TECHNOLOGY**

The purposeful application of information in the design, production, and utilization of goods and services, and in the organization of human activities.

Technology is generally divided into five categories

1. Tangible: blueprints, models, operating manuals, prototypes.
2. Intangible: consultancy, problem-solving, and training methods.
3. High: entirely or almost entirely automated and intelligent technology that manipulates ever finer matter and ever powerful forces.
4. Intermediate: semiautomated partially intelligent technology that manipulates refined matter and medium level forces.
5. Low: labor-intensive technology that manipulates only coarse or gross matter and weaker forces.

### **II. DEFINITION OF TECHNOLOGY**

Technologies may seem like tools or implements, but they are more than mere extensions of human capacity -- as we now know, now that we live in an "Information Society." As Walter Ong puts it, "Technologies are not mere exterior aids but also interior transformations of consciousness" ("Writing is a Technology that Restructures Thought," 301). Another idea made salient in a society in which new media proliferate: the new technologies such as computer programs changes the structure of thought (see especially Edward Tufte, *The Cognitive Style of PowerPoint*). That shows us that more of the tools we have inherited are in fact technologies too: metaphors, sentences. Merriam-Webster says technology is: "Application of knowledge to the practical aims of human life or to changing and manipulating the human environment. Technology includes the use of materials, tools, techniques, and sources of power to make life easier or more pleasant and work more productive. Whereas science is concerned with how and why things happen, technology focuses on making things happen." That's a tidy definition, but there is nothing in it that could not also be construed to apply to the world of mining, for instance. The word technology is a combination of two Greek words, *techne* and *logos*. *Techne* means art, craft, or skill. *Logos* means "to speak of". Some have since taken the word *logos* to imply the practical application of *techne*, but others say that is stretching its etymological roots. Needless to say, neither of these bookish pursuits seem to help us nail down a definition that would be satisfying to a modern audience.

### **III. MEANING OF TECHNOLOGY MANAGEMENT**

Technology management is set of management disciplines that allows organizations to manage their technological fundamentals to create competitive advantage. Typical concepts used in technology management are:

- Technology strategy (a logic or role of technology in organization),
- Technology forecasting (identification of possible relevant technologies for the organization, possibly through technology scouting),
- Technology roadmap (mapping technologies to business and market needs), and
- Technology project portfolio ( a set of projects under development) and technology portfolio (a set of technologies in use).

The role of the technology management function in an organization is to understand the value of certain technology for the organization. Continuous development of technology is valuable as long as there is a value for the customer and therefore the technology management function in an organization should be able to argue when to invest on technology development and when to withdraw.

### **IV. DEFINITION OF TECHNOLOGY MANAGEMENT**

Technology management can also be defined as the integrated planning, design, optimization, operation and control of technological products, processes and services, a better definition would be the management of the use of technology for human advantage.

The Association of Technology, Management, and Applied Engineering defines technology management as the field concerned with the supervision of personnel across the technical spectrum and a wide variety of complex technological systems. Technology management programs typically include instruction in production and operations management, project management, computer applications, quality control, safety and health issues, statistics, and general management principles.

### **V. AUTOMATION TECHNOLOGY IN TEXTILE INDUSTRY**

This report covers the contribution of textile industry to Indian economy, status of textile production, production of textile machinery, components & accessories, export & import of textiles and textile machinery, growth in textile mill industry, expected growth of fibre consumption in 2005 with growing importance of markets. It also covers briefly the extent of automation in spinning, weaving, processing and dyeing machinery worldwide. The report discusses the select automation technologies & explains the relevance of these technologies from both qualitative and quantitative aspects ranging from the blow room line to the finishing line: Some important aspects of textile processing including economic factors. The survey can: help for future development and assimilation by the Indian textile industry.

### **VI. STATEMENT OF PROBLEM**

At present, India is the leading textile manufacturing nation in the world. It provides employment opportunities for millions of people across the globe. Many advanced technologies are being sourced and utilized by the textile firms based on their need in order to sustain in the market and to compete aggressively with the global players. As the textile sector is modernized with the adoption of new technologies, the way of working of the labours has changed in the recent years. In this present highly mechanized scenario, much importance is not given for training and development needs of the labours, neither by the textile firms nor by the government. Since textile firms feel that if more time is spent for training, the productivity of the firm is bound to decrease.

### **VII. OBJECTIVES**

1. To study the conceptual frame work of automatic technology in general and in particular to textile machineries automation.
2. To study the impact of automation technology in maximizing the productivity with high quality in textile industry.
3. To identify the skill requirements for the labourers to manage technology automated in textile industries.
4. To provide suitable suggestions based on this study.

### **VIII. REVIEW OF LITERATURE**

**Lamar T.A.M (2011)**<sup>1</sup>examines the role of digital technology in enabling a design and development process integrating the functions of both textile and apparel creation. First, digitally enabled processes integrating design of textile and design of apparel simultaneously are discussed, including examples of garments developed through integrated processes. The focus of the study, shifts specifically to the role of technology automation design and visualization technologies in enabling an integrated digital process, and concludes with discussion of future directions.

**F.Noor- Evanset al.,(2012)**<sup>2</sup>has concluded that the process of ‘de-maturity’ of the European textile industry, moving away from its traditional roots in an attempt to revive the fortunes of this mature industry, through the adoption of novel technologies, such as nanotechnology, microelectronics and/or biotechnology. The process requires a paradigm shift involving every aspect of the firm that includes its technical capabilities, research and development (R&D) and business strategy. In particular, this study chapter discusses a new product development strategy that permits the incorporation of the novel technologies into current business activities, which is consistent with the Open Innovation paradigm. This is illustrated through a case study of Freudenberg, a German textile firm.

**Langereis G.R. et al., (2013)**<sup>3</sup>has explained in his study, the Electronic systems with sensors and actuators are enablers for increasing the protection level of textile appliances. Apparel and many other textiles are close to the human body and are part of numerous professional and home routines and tasks. This means that textiles are positioned in our daily life in locations where they can act extremely well for protective purposes by means of monitoring and being responsive. Intelligence created by electronics starts with sensors and actuators integrated into the textile to make it responsive. In addition, a power system, interconnect and processing logic are needed. Some characteristic problems encountered with sensing human parameters can be solved by smart topologies and sensor arrangements.

## **IX. RESEARCH METHODOLOGY OF THE STUDY**

### **Meaning**

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods techniques but also the methodology.

## **X. DEFINITION**

According to industrial research institute in research methodology, research always tries to search the given question systematically in our own way and find out all the answers till conclusion. If research does not work systematically on problem, there would be less possibility to find out the final result. For finding or exploring research questions, a researcher faces lot of problems that can be effectively resolved with using correct research methodology.

## **XI. RESEARCH DESIGN**

The formidable problem that follows the task of defining the research problem is the preparation of the design of the research, popularly known as the “research design”. A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. As such the design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of data.

### **Sampling**

---

<sup>1</sup>Lamar T.A.M. (2011) – “ Integrated digital process for design & development of apparel” Computer technology for textile and apparel, A volume in woodhead publishing series in textiles 2011, Pages 326-350. Available online 31 Jan 2014.

<sup>2</sup>**F.Noor- EvansS.peters, N.Stingelin(2012)** – “Nano technology innovation for future development in the textile industry” New product development in textiles, innovation and production, *A volume in woodhead publishing series in textiles* 2012, Pages 109-131. Available online 29 Jan 2014.

<sup>3</sup>**Langereis G.R., Bouwstra S., Chen W. (2013)** - Smart Textiles for Protection, “Sensors, actuators and computing systems for smart textiles for protection, A volume in Woodhead Publishing *Series in Textiles* 2013, Page 190-213.

Sampling may be defined as the selection of some part of an aggregate or totality on the basis of which a convenience or inference about the aggregate or totality is made. In other words, it is the process of obtaining information about an entire population by examining only a part of it.

**Sample design:**

The nature of the study is descriptive where by it includes survey and fact finding enquiries and describe the state of affairs, as if exists at present an extensive literature survey can be used that might be relevant to the behavioral dimensions of investors in gold investment.

To empirically test the hypotheses framed based on the objectives of the study a well structured question the questionnaire if was made clear to commercial academic study and that under no circumstances their individual date would be made available to anyone it was moreover possible for respondents to complete the questionnaire anonymously.

**Descriptive research design**

To make the research systemized the researcher has to adopted certain method. The method adopted by the researcher for completing the project is called research methodology. Research is a process in which the researcher wishes to find out the end result for a given problem and thus the solution helps in future course action. The research has been defined as “A careful investigation or enquire especially through search for new facts in any branch of knowledge”. To give more additional to the old research new ones are conducted.

**SAMPLING TECHNIQUES**

Convenient sampling techniques have been used in sampling due to the following reasons:

- It provides information about parts of the all the area of Tirupur.
- It provides help in gaining precision through satisfaction

**XII. TYPE OF RESEARCH:**

This is descriptive research where survey method is adapted to collect primary information from the investors using different scales as required and the required secondary information for the analysis.

**XIII. PRIMARY DATA**

The questionnaire was distributed to collect the primary data from 715 respondents from Tirupur district. A total of about 715 questionnaires were sent to the respondents located in Tirupur district mainly through broker’s office in the district. The responses of 700 valid questionnaires were selected after omitting the incomplete questionnaires.

The questionnaire had two sections in the first section, the demographic educational qualification, age, and income details, gender, occupation marital status were recorded primarily for the classification of investors.

The second section of the questionnaire was related to the behavioral details of the investors.

**XIV. SECONDARY DATA:**

The secondary data were collected from reports, seminar papers books, journals gold market RBI Bulletins, and government publication. The general information required has been obtained from secondary sources. Detailed information pertaining to the development of gold market also has been collected from published materials.

The population of the study consists of all those giving in Tirupur district, As per census 2014 there are people in Tirupur district.

**XV. PERIOD OF THE STUDY:**

The present study covers a period of latest years from 2015-2016. The selection of the recent year would be more meaningful in evaluating the growth and performance of Textile market.

**PILOT STUDY:**

Before the field survey was conducted the consistency of the information to had become essential to be tested for this purpose pilot study was conducted. This helped greatly to fine-tune the questionnaire.

**XVI. FRAME WORK ANALYSIS:**

After the data were collected diverse statistical tools and techniques were used to get an insight into the behavioral aspect of investors. Data were analyzed using the Software package for social science (spss). The collected data from you respondent (investors) had been analyzed with descriptive and Inferential statistical analysis.

The statistical techniques used are.

**Mean:**

The most popular and widely used measure for representing the entire data by one value is, what most lay me call an average and what the statistical call the arithmetic mean. It's value is obtained by assign to gather all the observations and by dividing this total by the number of observations.

The arithmetic often simply referred to as mean is the total of the values of a set of observations divided by their to two number of observations it is calculated by applying his FORMULA

$X = \frac{\sum Ex}{N}$

Where X = Arithmetic mean. Its

**Ex** = Value of observation

**N** = Number of observation

To measure the extent of dispersion in service quality dimension and individual items, standard deviation has been employed.

To identify the extent of dispersion of each of the dimensions and individual scores the standard deviation is calculated this tools is applied in all the analysis chapters.

For the purpose of comparison of the service quality variables a relative measure of dispersion namely, the co-efficient of variation has been used.

To identify the extent of dispersion of each of the dimensions and individual scores, the co-efficient of variation is obtained. This calculation is based on the standard deviation and it is relative measure of standard deviation. This tool applied in all the analysis chapters.

## XVII. CONCLUSION

Automation has continued to influence on the textile industry in many ways. Now a day's innovation and technological upgradation is such a vital component for every textile company to survive due to the increased competition that is observed within industries.

Technological developments are continuing to enhance the range of fabrics produced by the textile industry and to increase its productivity. It is most important, however, that these developments be guided also by the imperative of enhancing the health, safety and well-being of the workers. But even then, there is the problem of implementing these developments in older enterprises that are marginally financially viable and unable to make the necessary investments, as well as in developing areas eager to have new industries even at the expense of the health and safety of the workers in Tirupur. Even under these circumstances, however, much can be achieved by education and training of the workers to minimize the risks to which they may be exposed.

## REFERENCE

- [1] **Ammayappan, L. (2013)**, "Eco-friendly Surface Modifications of Wool Fiber for its Improved Functionality: An Overview" Asian Journal of Textile, 3(1), pp.15-28.
- [2] **Brenton. (2007)**, "Training Effectiveness in Clothing Industry", Training and Development Journal, (25), pp.401- 410.
- [3] **Chandra, P. (1998)**, "Technology Practices and Competitiveness: the Primary Textiles Industry in Canada, China, and India", P. Chandra, Himalaya Publishing House, Mumbai, pp.2-3.
- [4] **Hergeth, H. H. (2012)**, "The Global Textile and Clothing Industry, Technological Advances and Future Challenges", A Volume in Woodhead Publishing Series in Textiles, pp.77-88. Available online 28 Jan 2014.
- [5] **Howard Pack. (1984)**, "Productive & Technical Choice: Applications to the Textile Industry" Journal of Development Economics, 16(2), pp.153-176.
- [6] **Nicholas Bilalis, Nicholas Alatsas, Franco Soppera, Alexandros Xanthas, (1999)**, "Technical and Qualitative Information Sharing between Fabric Finishing and Garment Manufacturer", 38(2), pp.201–206.
- [7] Website
  1. [www.tifac.org.in](http://www.tifac.org.in)
  2. [www.texmin.nic.in](http://www.texmin.nic.in)