Imparting industry relevant skills through Skill Development Programmes for Select Job Roles in Apparel Industry: a LITERATURE REVIEW

Roopali Shukla*

ABSTRACT

The need to achieve sustainable economic growth has increased the demand for skilled human resource. India is a young country with a need for skill development as there exist a huge dichotomy between industry demands of skilled personnel and underemployment or unemployment. The lack of availability of human resource with appropriate skills including soft skills is one of the key reasons for this. Training programmes form the backbone of skill development in the apparel industry. The objective of these Skill Development initiatives is to enable the youth and women to take up industry-relevant skill trainings that will enable them to secure a better livelihood. Skill is defined to be an ability, tool or learning to gain employment that will lead to sustainable livelihoods and. By giving individuals greater confidence and self-esteem, skill becomes an end in itself. Apparel industry requires three types of key skills that make human resource employable. These are categorized as Domain (Technical) Skills (NSDC, 2017), Soft Skills and Basic Literacy Skills (Nisha, 2013). This paper is focused on identifying the industry relevant skills in the training programmes in the context of the three key skill categories for the job roles of Sewing Machine Operator (SMO) and Production Supervisor- Sewing (PSS) in the Apparel sector.

Key Words – Apparel industry, Sewing Machine Operator (SMO), Production Supervisor Sewing (PSS), Basic literacy skills, Soft skills, Technical Skills, skill intervention, operator efficiency.

INTRODUCTION

The Indian Apparel Industry is facing many challenges ranging from emerging technologies, global competition in terms of price, design, productivity and innovative techniques. To meet these challenges, there is an increasing reliance on the capabilities, knowledge and skills of the work force. Apparel industry being a labor intensive sector, the Skill Development trainings is playing a critical role in this context.

Skill Development is based on the Training programmes that form the backbone of the skill ecosystem. The three category of skills that play a pivotal role for employability are classified as Basic Literacy Skills Domain, Soft Skills and (Nisha, 2013) and (Technical) Skills (NSDC, 2017). Basic literacy skills are those skills that are essentially related to education like reading and numeracy (Nisha, 2013) that are required to strengthen professional advancements, these include skills like ability to perform basic mathematical operation, record output etc. The technical skills are the skills that impart the technical knowledge that enables one to perform the tasks that are in keeping with requirements of the assigned job role accurately.

SIGNIFICANCE OF SKILLS IN TEXTILE & APPAREL SECTOR

In the Indian economy the Textiles & Apparel sector play a very pivotal role as it is crucial contributor to exports of India and is the second largest sector in terms of employment generation. This sector is employing 12.3 million people across a spectrum of segments (Ministry of Textiles, 2018). One of the critical influencers of growth in the Apparel industry in India is the availability of labor. It is estimated in the coming decade almost 3.3 million new employment opportunities will be provided (Ministry of Textiles, 2018). Out of these while 18% of job opportunities will be for designers, managers, merchandisers etc, and 15% for supervisors and helpers, almost 67% will be for the base level sewing machine operators.

In view of the role of 'Skills' on economic impact, the Ministry of Skill Development and Entrepreneurship (n.d.) has defined 'skill' as having an intrinsic and instrumental value Implying that skill is an end in itself by giving individuals greater dignity and confidence and also it is a tool to obtain jobs for sustainable livelihood. Skill Gap (Ryan, 2016) is said to be a gap that exists between what the work force is capable of doing and the aspects that employers expect for their work force to possess to effectively and efficiently execute the tasks. The Skill Gaps become relevant because even though a large work force is employed in the Indian Apparel sector, Indian apparel exports have experienced a slower growth than Bangladesh, Vietnam etc. This challenge can be addressed only if there is an efficient value chain through skilled human resource, reducing lead times and building quick response systems.

There is a need to understand the Theories that are related to the area of research in 'skills and training' in this context. The Theories provide a framework that help in understanding the development and human behavior in that area. Skills Theory (Burkus, 2010) put things in perspective through the Mumford's skills leadership model and three skill Katz's approaches. The leadership model defines that as the leader raises in the organizational hierarchy the skills requirement changes focus from technical to human resource management and finally to conceptual abilities and these skills are the core competencies for effective execution. Milhem et al. (2014) have defined 'training' as structured process that enhances knowledge, skill or attitudes (KSA) through learning experience and thus making the person more effective which benefits the organization as well as the individual. Virkus (2009), Burkus (2010) and Pratap (2016) have also brought forth The Skills Theory model that Katz had proposed in 1955. The theory presented Technical (competency and knowledge), human (people centric skills) and conceptual skills (ideas that could help in growth) and emphasized that the skills were required in this sequence as the role of a person evolves within an organization.

EMERGENCE OF EMPHASIS ON SKILL DEVELOPMENT

United Nations Educational Scientific and Cultural Organization (UNESCO, 2012) identified that education, knowledge and skills were the key levers of sustainable development and focus should be given to employable skills with equitable social distribution. The development goals are said to be mutually dependent and a favorable change in any one of these such as poverty irradiation, gender equality, health, education, training etc. would impact the rest. It was highlighted that the youth were unable to develop the attitudes, knowledge and skills required to adapt to changing technologies and work expectations thus implying that focus must also be given to life skills. It was observed that since across the globe growing pressure was being placed for public financing of education and trainings, these trainings should be envisaged and implemented at national levels by countries, creating an ecosystem of measuring and assessing the outcomes of these trainings.

The UNESCO guidelines have been adapted for various Skill sectors in India, one of them being the Apparel sector. The scope and scale of the Apparel Sector in India has been presented by National Skill Development Corporation (NSDC, n.d.) stating that in the global context, India accounts for being the second-largest manufacturer and exporter of textiles and apparel. Its contribution to Indian exports being 11% and that to Gross Domestic Product (GDP) being 4 %.

Table 1 showcases that across various segments such as processing, technical textiles and ready to wear garments, Textile and Apparel sector employs 15.23 million and the work force requirement by 2022 is likely to rise to 21.54 million.

Sub Sector	Employment (in Million)		
	2013	2017	2022
Spinning Weaving and Finishing of Textiles	3.1	3.14	3.18
Manufacture of Other Textiles	8.04	10.64	13.78
Manufacture of Wearing Apparel	4.09	4.28	4.58
Overall Sector	**15.23**	**18.06**	**21.54**

Table 1: Reprinted from Human Resource and Skill requirements in the Textile and Clothing Sector (Executive Summary) by NSDC (n.d.)

In view of the enormous relevance of this sector due to its GDP contribution and potential for employment, Government of India has initiated many employment linked training programmes to bridge the gap of demand and supply of human resource. Glasmeier and Salant (2006) and Reymen et al. (2015) in their studies presented that the low skill work was being replaced by automation and knowledge and skill up gradation was required to combat ever increasing competition, product development and advent of new technologies. Further, the human resource shortages were due to of lack of mapping of skills between their demand and supply. Government of India is implementing the employment linked schemes such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) and National Urban Livelihoods Mission (NULM) to cater to the skilled human resource requirements of the Apparel Sector. To drive this initiative, National Skill Development Corporation (NSDC) was constituted in 2009 by the Ministry of Finance which is now under the Ministry of Skill Development and Entrepreneurship. This has been founded to address the requirement of providing skilled manpower across various industry sectors. Apparel Made-Ups & Home Furnishing Sector Skill Council (AMHSSC) is the Sector Skill Council for Apparel Sector under the NSDC. It was instituted in 2013, licensed under Sec 25 of the Companies act 1956. The mandate was to develop standards, evaluation criterion and

Accreditation systems for this sector. It has defined the structure and contents of training programmes through the Qualification Packs (QPs) and the National Occupation Standards (NOSs) for various job roles. QPs are a set of National Occupation Standards (NOSs), defined for every specific job role. National Occupational Standards (NOSs) identify the performance standards, knowledge and understanding of a specific activity at the place of work. India is a growing economy requiring a huge pool of skilled workers and since a huge population of workers is migrating from rural to urban sectors, skill interventions are being provided to make them employable.

REVIEW OF LITERATURE

Literature Review Strategy

Prior to starting a research study, it is essential to conduct a review of the studies in the literature available to provide a background and direction for the various dimensions and factors of the study. The Review of Literature helped in understanding the various aspects of Skill Development in India and other Apparel Manufacturing countries. It covered the perspectives of the Industry, trainees, and the different Government and Non- Government organizations associated with Skill Development in Apparel Sector. The Review of Literature has been done from various sources such as journals, publications by government and other national and international agencies, research projects, research articles and websites. Some of the referred articles and papers are from databases and publications such as EBSCO, ProQuest, K-hub, and JSTOR. Emerald Group, Emerald Insight, Emerald Publishing, EconStor, Sage Publications. The national and international journals where these papers were published were Journal on Business Review, Journal of Fashion Marketing and Management, Journal of Social Science Research Institute at Duke University, International Journal of Science and Technology Research, The International Journal of Public Sector Management; International Journal of

Clothing Science and Technology, International Journal of Economics & Management Sciences, International Journal of Management Studies, International Journal of Business and Management, International Institute for Labour Studies, Directorate General for Internal Policies, Policy Department, Reports by KPMG Advisory Services for National Skill Development Corporation (NSDC), Report from United Nations Educational, Scientific and Cultural Organization (UNESCO), Education & Training; London, Research Gate and Google Scholar. Websites of Government of India and Skill Development Organizations were also referred to. Some of the key search words that were used in various permutations and combinations were : "skill intervention","", "Skills Theory", "apparel industry", "skill development", "skills shortages" "productivity", "trainings", "supervisor", "operator", "life skill", , "Global Value Chain", , "operator efficiency", "Ministry of Textiles (MoT)","National Skill Development Corporation (NSDC)", "Sector Skill Council", "India", "China", "Bangladesh", , "United Nations".

After screening, 70 studies had been identified out of which 57 (83%) were recent (in time frame of last ten years i.e. 2008-2018) while 13 were earlier from the years prior to 2008. These earlier studies unfolded some relevant aspects of skill deficiencies, issues related to low-skill workers, Global Value Chain etc. The relevant studies have been summarized in the section below.

Literature Review

Racine et al. (1992) studied the efficiency levels of sewing machine operator's and its impact on production scheduling and planning. They emphasized that the global competitiveness could be achieved through quick response and lower work in progress implying higher efficiencies. Totterdill (1995) explored the competitive advantage of Indian apparel industry in terms of technology, skills and market. The results focused on the multi-tasking capabilities of operators and role of supervisors who should be trained in line balancing, work allocation and knowledge

About garment construction. Also social skills were considered as relevant as technical skills. Lynch (1995) presented in her study that the larger economies like United States, Germany and Japan were concerned about declining real wages, stagnant productivity growth and widening wage gap between the skilled and unskilled workforce. Trainings were identified as one of the solutions to control this growing gap. Debapriya & Mustafizur (1999) studied the training requirements emerging due to changing use of technologies in the Apparel manufacturing sector of Bangladesh, conducted across workers and CEOs of leading organizations, the study revealed that skill development was required to make workers numerate, efficient on technically advanced operations and quality compliant especially for high value garments. Corbridge (2001) examined the requirements of qualifications of the employees being hired from the education providers and the employer's point of views. The study showcased the gaps between the two, for instance while educators put more emphasis on learning of advanced machines the employers sought people with deeper knowledge of basic sewing operations. Hogarth & Wilson (2001) conducted a research on skill deficiencies and it revealed that the main reasons for skill gaps were the lack of training of human resource in accordance with the new practices required at work, leading to difficulties in recruitment. The research identified the lack of hybrid skills which is combination of vocational and generic skills.

Miranda Pye (2002) compiled a skills requirement summary in the Clothing, Textiles, Accessory and Home furnishing in UK. The research focused on issues like demand for skills, change and development in qualifications, skills supply, skills needs, employment trends etc. The key findings were that Skills shortages reported by the industries comprised of problem solving, technical skills and communication skills. It was also observed that Sectors and respective Sector Skills Councils should collaborate to assess the applicability of qualifications to the industry so as to address and solve skills deficiencies.

Diwase (2002) studied about the women empowerment in the Indian handicraft sector through purposive sampling. The study revealed that those women handicraft artisans who had come under the institutional fold had been more empowered in comparison to those who were functioning on their own. They received integrated support services such as credit, healthcare, childcare, and training in procurement, markets and technology. This resulted in entrepreneurship development, generated self-employment and enhanced literacy levels. Frazier and Johnson (2004) examined the perceptions regarding the challenges and barriers faced by the apparel industry in Bolivia in participating in the global textile and apparel trade. This exploratory study, using snowball sampling, identified that the slow domestic market and the trade policies were the prime barriers. Also trainings were required in manufacturing, management and marketing techniques, to build existing skills to produce products for international markets while promoting their rich artisan handwork and hand knitted garments. Glasmeier and Salant (2006) studied the reasons for low or lesser skilled workforce facing job losses in rural America. The focus of this study was on displaced workers since the low-skill work had largely been automated and new products were replacing the older less sophisticated ones, the low-skill workers were more vulnerable to displacement due to international competition, low education levels and increases in productivity requirements in manufacturing. Cammett (2006) studied the Global value chains in Apparel manufacturing across United States, Europe and North Africa. The study revealed that the developing countries instead of focusing on labour intensive activities and processes should invest in devising ways to minimize lead times and enhance quality and productivity.

Chandra (2006) conducted a study on Indian textile and Apparel industry identifying that the three main hindrances to this sector were lack of technical manpower, less investment on training of workforce and acute shortage of skilled supervisors and operators to almost the extent of 112,000 supervisors and 2.8mn operators in the apparel sector in 2010.

Varukolu and Park (2008) examined the level of technology adopted by 500 Indian apparel manufacturing firms in Tirupur, Tamil Nadu, and India. The level of technology adopted was positively dependent on size of the firm and negatively on its exports status. The technologies were adopted more by large sized and less export-orientated firms than smaller, higher export-oriented firms. The negative effect of export orientation implied that firms did not adopt technologies due to intense price competition in the Global trade. Virkus (2009) presented the Skill Model that had been proposed by Mumford et al. in 2000. This skill model showed the 5 components of effective leadership i.e. competencies, leadership outcomes, individual attributes, environmental influences and individual attributes.

Aziz (2010) carried out an exploratory research to study the impact on apparel Industry in India in the post quota regime. She highlighted that India was facing a scarcity in availability of skilled labour and therefore losing its cost competitiveness to Vietnam, Sri Lanka, Bangladesh and China. This shortage had propelled the Government to launch skill development initiatives on a large scale with focus on Textile & apparel sector. Alliance Sector Skills Council (2010) studied the skills assessment for Textiles and apparel sector in Scotland. It identified that the skill gaps were resulting in difficulties in product development, increased costs, unsatisfactory quality and loss of business as customers' needs could not be met. Sewing operators and production managers were reported to have maximum skill shortages. Fernandez-Stark et al. (2011) examined the global value chains and workforce development in the apparel industry in five developing countries i.e. Sri Lanka, Bangladesh, Turkey, Nicaragua and Lesotho. Their key finding was that the countries were forced that their supervisors provide on job trainings to labor force as the formal trainings provided in the vocational institutes did not address the mismatch between the skills imparted by them and the industry requirements. They also highlighted that apparel industry faced acute shortage of skilled operators and trained supervisors. Small Industries Development bank of India (2011) compiled a report on skill

Gaps in the Micro Small and Medium Enterprises (MSMEs) and emphasized on knowledge transfer mechanism wherein the skill development is done based on skill gaps and the modules are administered to the cluster. It also studied the Implementation Framework encompassing duration of courses, fees charged, infrastructure and teaching pedagogy.

Fernandez et al (2012) examined the Skills Challenge in Upgrading the Global Value Chains (GVCs) in Apparel Industry in developing Countries. They identified three level of skill interventions – 'Early reactive interventions' that help to respond to immediate needs of the industry participants; 'Ongoing proactive interventions' that are develop a workforce for the emerging requirements in the industry and 'Future-oriented interventions' made to create the work force to react to future new demands expected to arise in the industry. The variables included - formal education, workforce development and training including "soft" The Exploratory research revealed that Technical and Vocational Education and Training (TVET) systems of many developing-countries did not provide demand-driven trainings leading to lack of coherence between skills required by the industry and skills trainings imparted. A lack of prestige associated with vocational education gave it a low status and low income potential thus further impacted the quality of workforce. National Skill Development Corporation (2013) conducted a study on mapping the districts-wise skilling requirements from 2012 to 2022 in Punjab. This in-depth study included feedback from Industry, youth, training providers and Government officers. It covered 20 districts and highlighted that in certain districts the training infrastructure needed to be upgraded, trained teachers were required and wage placements were low. According to the study, Punjab has a huge demographic dividend of working age population which would be 23.2 lakh during 2017-222. The creation of new jobs were likely to increase requirement for work force to 7.9 lakh people whereas supply is expected to be 3.6 lakh implying a gap of 4.3 lakh people.

Nisha (2013) deliberated on the Skill Gaps in the Vocational Education and Training in the Tirupur Knitwear Industry. The study was conducted on 1065 operators comparing technical qualifications, experience, salary and training against skill dimensions. The results showed that the soft skills, language skills were considered as important as technical kills**. Das & Brookshire (2013) studied the resources that India possessed to become the next China in the context of apparel industry. The study indicated that though flexibility in production, skilled human resource and ability to design were the Indian strengths, labour productivity and managerial capabilities needed to be enhanced to achieve competitive advantage as China. Ernst and Young (2013) in their report on Skill Development in India have explained how State Skill Development Missions are focusing and synergizing efforts in the respective States with the support of National Skill Development Corporation that implementing initiatives to make the skills ecosystem robust and employment oriented. Veeranjaneyulu et al (2014) conducted a study, based on three batches of women trained at Centre from 30 villages, on the enhanced livelihood opportunities through Skill Development trainings in Apparel Making & Embroidery in Telangana, India, A needs assessment of employers and employees for training and development programs was conducted. The results indicated that there was a 151.6% gain in knowledge which was calculated through the responses of candidates to questions before training and after training. Post the training the women also gained employment in the Apparel Park. Milhem et al. (2014) defined 'Training and Development' as the process of imparting or acquiring knowledge, skills and abilities (KSA) that are related to a particular function and would benefit both the employer and employee. They defined 'Theory' to be a set of fundamental statements that have been put together and have been and verified and validated by specific testing. They also identified Scientific methods and Human Capital Theory as the Training Theories that need to be considered while developing the training programmes..

National Skill Development Corporation NSDC (n.d.) conducted a research on the Skill and Human Resource requirements of the textile and apparel sector in India to identify and quantify the number of personnel required across the sector. The study provides the guidelines that show the overall Skill gaps in certain Job Roles. Some include: Operators having limited knowledge of machines handling; Supervisors lacking the ability to manage people and allocating work and machines in terms of managing productivity. The report also provides recommendations regarding implementation of skill trainings. AMHSSC (n.d) have formed the Qualifications Packs (QP) and National Occupational Standards which provide the eligibility criteria, course details and performance criteria for respective job roles for the training programmes being conducted in the Apparel sector. They have enlisted the expected knowledge and skills that a trainee should possess by undertaking the programme.

Misra (2015) studied the initiatives in skill development in India to analyse the ways to produce globally competitive skilled human resource through the Government of India skill development schemes. The variables included demographic dividend, educated, trained workforce, skill gaps, suitable job roles and employability. The study recommended that for smooth implementation of Government initiatives the schemes should be heterogeneous, training centers to have good infrastructure, focus to be on quality and curriculum and better coordination between State and Central Governments. The challenges identified were that the employers did not recognize the skills acquired by workers, there were no course credits transfer for higher studies or training, lack of qualified trainers and systematic third party assessments. Patwary (2015) studied the Skill gaps in Textile and Apparel industry in Bangladesh and presented a vision till 2021. He identified that the challenge was to bridge the gap between the requirements of the buyers' capabilities of the suppliers. His study revealed that approximately 1.5 million employees will be required by 2021 in manufacturing jobs from

Sewing machine operators, quality checker, production managers who should be trained in technical knowhow to remain globally relevant.

Koshy (2016) addressed the apparel industry as the 'sunrise industry' and emphasized that by simply training at the lowest level and continuing to follow the earlier defined curriculum will not radically modify the vocational education. The geographical mismatch between training and jobs, requirement of multi skilling and modifying the National occupational Standards (NOS) to encompass more job roles, needs to be addressed. Hearle (2016) conducted a study on skills, employment and productivity in the Garments sectors in Bangladesh and Cambodia with specific focus on supervisory skills. From a study of supervisors in factories in Cambodia it was found that the trainings led to moderate improvements in firms' productivity and made the supervisors more adept at problem solving, decision makes techniques, human resource management, production efficiency and quality management thereby improving their financial status. Jayawardhana (2016) studied the apparel sector in Sri Lanka and presented that the ethical and eco-friendly practices were being followed that were resulting in lesser attrition rate leading to skilled and productive human resource thereby making the factories more globally competitive. Federation of Indian Chambers of Commerce and Industry (FICCI, 2016) presented that the wage cost in India is 150-160 US$/ month which is lower than China at 550-600 US$/ month but despite this China remains competitive because it has developed robust training infrastructure as per the industry requirements. National Skill Development Corporation NSDC (n.d.) conducted a study to map the skill gaps in apparel sector and identified that the operators do not possess the requisite knowledge of multiple machines and shop floor discipline. The supervisors do not possess sufficient knowledge of quality parameters nor can they manage shop floor human resource. These gaps need to be addressed through skill trainings.

Textile Today (2017) presented those 5.98 million workers was required in the Apparel industry in Bangladesh out of which there was a dearth of 1.2 million skilled workers. Allsop (2017) examined the gap arising in the Fashion Education with respect to academic teaching and industry requirements. Through mixed research it was brought forth that the industry perceives the trained personnel lack the requisite technical and life skills. Also students find it difficult to translate and adapt the skills taught at training centers to skills required for employment and this needs to be addressed.

Foundation Hewlett (2017) conducted a study to investigate the barriers to Economic Empowerment of women in the Sub-Saharan African Apparel Industry. The variables studied were remuneration and pay scales for women, health awareness, and access to knowledge, skill levels and labor law compliance. The Research revealed that the key challenges to Women's Economic Empowerment were poor remuneration to women, limited job security due to industry instability, low education and poor skill levels, unsupportive supervisors, and unwarranted sexual advances at the workplaces for women. It highlighted that female factory workers had significant skill gaps and these gaps needed to be bridged with effective programs on enhancing skills along with strengthening harassment policies.

CONCLUSION

The above literature emphasizes the need and relevance of imparting Skill trainings in the Apparel Sector both in the Indian and global context. These are particularly imperative for the export – oriented Apparel sector to enhance productivity, efficiency and quality in terms of global requirements. The above review shows that substantial gaps exist between the trainings provided by training providers and those desired by the Industry from the employability perspective. The trainings need to be adapted to the aptitude of the trainees and credits of Skill training need to be aligned with higher education and also this need to be integrated for recognition at global level. There should also be structured modules on bottle neck operations.

The qualitative mismatch needs to be addressed between the demand and supply. This will then develop effective demand driven employable human resource for apparel industry. The review also highlights that Government can be a very important catalyst for this process by performing three critical functions: Financial support, Facilitation, and regulatory action.

Based on the above literature it is evident that there is an imperative need of imparting Skill trainings in the Apparel Sector particularly because the Apparel sector in India is of high significance in terms of contributing to the GDP and generating employment. Further, the Indian apparel sector is export – oriented which implies that the quality and price are of prime significance to remain globally competitive. These can be achieved through higher productivity and better workmanship, which implies effective skills trainings. The above reviews ascertain that gaps exist between the trainings being provided by training providers and those desired by the Industry from the employability perspective. The trainings need to be mapped with the aptitude of the trainees and the relevance of skills in the global context. The mismatch between the demand and supply needs to be addressed in terms of increasing competition, evolving customer needs, advent of new technologies and need for becoming cost competitive with special focus on technical and managerial skills.

Higher skills imply higher productivity thereby profitability for the organization and economic gains for the individual which in turns reflects in the economic growth.

REFERENCES

1. Anjum. Asim. Shahid. Rahman. (2015). *Sector Skills Study – Garments Sector.* Retrieved from https://psdf.org.pk/wp-content/uploads/2015/11/Garments-Sector-Skill-Study-.pdf

2. Alhassan, A.N.I., & Goededeburre, R. (2015). *The value of skills training in the improvement of the socio-economic status of microfinance beneficiaries - a case study a Grameen Ghana. Special Issue - UMM Master awards*. Retrieved from https://aisberg.unibg.it//handle/10446/79074#.WoB7zCVubIU

3. Arasinah, K. (2014). Technical Skills, Knowledge competencies and expected changes in clothing industry. *BEST: International Journal of Humanities, Arts, Medicine and Sciences* (BEST: IJHAMS) Vol. 2, Issue 1, 1-12.

4. Burkus, D. (2010). Skills Theory. Retrieved from https://davidburkus.com/2010/02/skills-theory/

5. Chandra, P. (2006). The textile and apparel industry in India. *Research Gate*. Retrieved from

    https://www.researchgate.net/publication/228588739_The_Textile_and_Apparel_Indu stry_in_India

6. Diwase, S. S. (2002). *Empowerment of women in the handicraft sector a study on participatory approach to development efficacy of interventions and identification of* appropriate *development partners*. (Doctoral Dissertation), Retrieved from .http://shodhganga.inflibnet.ac.in/handle/10603/150636.

7. Hearle, C. (2016). Skills, employment and productivity in the Garments and Construction sectors in Bangladesh and elsewhere. *Economic and Private Sector Professional Evidence and Knowledge Services*. Retrieved from https://assets.publishing.service.gov.uk/media/5977616f40f0b649a7000022/Skills_pro ductivity_and_employment.pdf

8. Hogarth, T., & Wilson, R. (2001). Skills Matter : A synthesis of research, extent, causes and implications of skill deficiencies. *Institute of Employment Research*

9. *University of Warwick, Department for Education and Skills DfES Publications.* Retrieved from https://warwick.ac.uk/fac/soc/ier/publications/2001/hogarth_and_wilson_2001_synthe sis.pdf

10. Lynch,. L.M, (1995). The Growing Wage Gap: Is Training the Answer? *Frbny Economic Policy Review*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1029724

11. Ministry of Skill Development & Entrepreneurship. (n.d.). *Why Skill Development*? Retrieved from http://www.skilldevelopment.gov.in/skilldevelopment.html

12. Ministry of Skill Development & Entrepreneurship. (n.d.). *Skill Development Initiatives under Various Central and State Government Schemes*. Retrieved from http://wazir.in/skill-development/training/skill_development_initiatives/

13. Ministry of Skill Development & Entrepreneurship. (n.d.). *Qualification Packs and National Occupational Standards.* Retrieved from http://www.skilldevelopment.gov.in/qp&nos.html

14. Ministry of Housing and Urban Poverty Alleviation, Government of India. (n.d.). *National Urban Livelihoods Mission* . Retrieved from http://www.sscnasscom.com/efficacy/national-urban-livelihood-mission-nulm/

15. Ministry of Textiles, GOI. (2013). *Guidelines Booklet for Scheme Integrated skill Developmen of India*. Retrieved from http://www.ministryoftextiles.gov.in/sites/default/files/ISDSguidelines-July2013.pdf.

16. Misra, S. M. (2015). Skill development: a way to leverage the demographic dividend in India. *Journal on Business Review (GBR)* Vol.4 No.2, doi: 10.5176/2010-4804_4.2.367.

17. National Skill Development Corporation. (2013). *District wise skill gap study for the State of Punjab (2012-2017), (2017-2022)*. Retrieved from http://psdm.gov.in/pdf/reports/punjab-sg-report.pdf

18. National Skill Development Corporation. (n.d.). *Human Resource and Skill requirements in the Textile and Clothing Sector (Executive Summary)*. Retrieved from http://msde.gov.in/Executive_Summary/Textile_and_Clothing.pdf

19. National Skill Development Corporation. (n.d.). *Human Resource and Skill requirements in the Textile Sector*. Retrieved from http://nqr.gov.in/sites/default/files/Skill%20Gap%20Analysis%20Report_2.pdf

20. National Skill Development Corporation. (n.d.). *Human Resource and Skill requirements in the Textiles and Clothing Sector(2013-17,2017-22)*. Retrieved from https://www.ugc.ac.in/skill/SectorReport/Textile%20and%20Clothing.pdf

21. Nisha, P. V. (2013). *Envisage skill gap to evolve skill development strategies through vocational education and training vet model with reference to Tirupur knitwear industry*. (Doctoral Dissertation), Retrieved from http://shodhganga.inflibnet.ac.in:8080/jspui/handle/10603/93294

22. Pye, M. (2002). A comprehensive summary of skills requirements in the Clothing, Textiles, Footwear and Leather and Furniture, Furnishings and Interiors industries. *Skills Dialogues: Listening to employers*. from https://core.ac.uk/download/pdf/4154530.pdf

23. Reymen, D., Gerard, M., & DeBeer, P. (2015). Labour market shortages in the European Union. *Directorate General For Internal Policies, Policy Department. Retrieved from* http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542202/IPOL_STU(2015)542202_EN.pdf

24. Ryan, L. (2016). *The Most Serious Skill Gap of All*. Retrieved from https://www.forbes.com/sites/lizryan/2016/08/18/the-most-dangerous-skills-gap-of-all/2/#1456492ea64c

25. Sharma, R.K. (2011). *Knowledge Management in textile industry of Punjab*. (Doctoral Dissertation). Retrieved from Shodhganga http://shodhganga.inflibnet.ac.in:8080/jspui/handle/10603/3675

26. Srivastava, N.A. (2013). *Analysis of skills of sewing operators in ready-made garment Industry*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2953896

27. Textile Today. (2017). *Garments industry requires 3.6 million skilled workers by 2021*. Retrieved from https://www.textiletoday.com.bd/garments-industry-requires-3-6-million-skilled-workers-2021/

28. The Federation of Indian Chambers of Commerce and Industry (2016). *Global Shifts in Textile Industry & India's Position*. Retrieved from http://ficci.in/spdocument/20817/3-

FICCI-TAG-2016-Whitepaper.pdf

29. Varukolu, V., & Park- Poaps, H. (2008). Technology adoption by apparel manufacturers in Tirupur town, *Journal of Fashion Marketing and Management:* Vol. 13 No. 2, 2009 pp. 201-214. doi: 10.1108/13612020910957716.

30. Virkus, S. (2009). Skills Approach: Robert Katz. *Tallinn University.* Retrieved from http://www.tlu.ee/~sirvir/IKM/Leadership%20Models/skills_approach_robert_katz.ht ml

31. Virkus, S. (2009). Mumford et al Skills Model. *Tallinn University.* Retrieved from http://www.tlu.ee/~sirvir/IKM/Leadership%20Models/mumford_et_al_skills_model.ht ml

32. What is impact? *Economic and Social Research Council.* Retrieved from http://www.esrc.ac.uk/research/impact-toolkit/what-is-impact/

33. What is an intervention? Retrieved from http://health.mo.gov/data/interventionmica/index_4.html