Clothing manufacturing and exporting countries of the World: a review

Abstract

The aim of this paper is to discuss about the textiles and clothing manufacturing and exporting countries of the world. This paper has some objectives such as introducing the applications of spandex fabrics, discussing highest clothing importers, and detailing recent textile trade expansion countries etc. The textiles and clothing industries are categorized by changeable mandate, short product life sequences, rapid response time, enormous product diversity, and an unstable, unyielding, and intricate supply chain structure. The textile and clothing industries subsidize meaningfully towards the national budget of many countries. Although the clothing industry is worldwide in nature, the engineering facilities from established countries are flowing to developing countries to lessen the labor fees. Even in these developing countries, the clothing industries are fronting the greatest experiments in spite of the inexpensive labor cost, due to the petite production life-cycle, high instability, low unpredictability, high level of instinct purchase and the quick market reaction. To diminish the cost of manufacture, the clothing industries in developing countries are rather concentrating on sourcing of inexpensive raw materials and minimizing transfer cost than labor efficiency due to the obtainability of inexpensive labor.

Keywords: elastic clothing; textile exporters; annual revenue; highest export countries; clothing manufacturer; investments

Introduction

There is a great importance of this paper in the field of textiles and clothing business. The common spandex trade plants are situated in China. In the earlier, most of these cloths were created in the USA, but condensed labor charges have driven the production of many different types of fabrics to China over the last few periods. A new revitalization in the U.S. engineering frugality may control over a return of spandex manufacture to American coastlines, but whatsoever the case may be, market rumors plan to upcoming spandex manufacture. While many kinds of synthetic materials have lost admiration in recent years, there is no diminution of spandex that means this types of fabrics will endure to enjoy amplified growth until at least new coming decays.

As like as other polymer materials, spandex fibers are created from repeating chains of monomers those are alleged together in an acid. Initial of the spandex expansion procedure, it was predictable that, this product is extremely heat-resistant and it is particularly heat-sensitive fabrics as like as nylon and polyester, which are enhanced when joint with spandex cloths. Stretchiness of elastic cloths proximately made it desired everywhere the sphere, and the acceptance of this fabric perseveres to this day.

It is existing in so many kinds of clothing that virtually every customer owns at least one article of dress that covers spandex, and it’s doubtful that this fabric’s acceptance will reduction in the near prospect. Undesirably, elastane has a meaningfully negative environmental influence after it is announced into the customer market. Spandex cloth is made by many diverse international companies. Some of these companies, such as DuPont, have workshops in lots of different republics, but others may be contained to one country in individual. Figure 1 shows the textile importers of the world.

Figure 1 Textile importers of the World.

As spandex is a completely synthetic fiber, no organic constituents are used to create this substantial. In its place, all of the essential parts of this fiber are prepared in a laboratory setting, and they are then joined under precise inducements to generate spandex fabric. In the years since the creation of elastane, a number of diverse procedures for making this fabric have arisen. Some of these systems are more effective than others, and by the passage of times, methods like retort spinning, melt extrusion, and solution wet spinning processes have frequently been rejected.

Nearly 95 in a hundred of the world’s spandex are now prepared with a technique called solution dry spinning, and it is this engineering progression that we will scrutinize in aspect. For starting the spandex cloth manufacturing process, a constituent called macro glycol is assorted with a di-iso-cyanide monomer under definite temperature and compression. The heat and pressure settings must be meticulous.
Clothing manufacturing and exporting countries of the World: a review

28

25

21

34

32

17

24

15

31

20

much elastic, and spandex can also be applied to add elasticity to

Figure 2

Figure 2 shows the world's textile contributions.

communal to see spandex fabric woven into other kinds of fabrics.

exclusive, and these types of outfits are quite expensive to the

fully form decent costumes.

areas, spandex fabric may be applied to create extremely flexible or

manufacturing application in which springiness is preferred. As,

its commencement this type of cloths have become more and more

magnesium stearate or a parallel substance. Once it is laden onto a

this type called a spinneret, which has

the spandex fiber is absorbed in a finishing agent containing the

The resultant material is highly viscid, and it must be thinned with

a solvent before it can transfer on to the following stage. When it

is thin enough to react with, the pre-polymer is laden into a machine

called a fiber manufacturing cell or a tubular spinning cell. Inner side

of this machine there is an expedient called a spinneret, which has

lots of tiny piggens. As the fiber manufacturing cell rotates, the pre-
polymer solution is enforced through these holes, and it receipts on

the form of threads of fabric.

These threads are tranquil in a fluid state when they arise from

the spinneret, and they are then supposed to frenzied solvent gas and

nitrogen to condense them into a dense stage.20 These hard fibers

are then stripped out of the tubular spinning cell, and when they

are exposed to pressed air, they procedure into warped strands.21

This compacted air can form threads of many diverse sizes. Finally,

the spandex fiber is absorbed in a finishing agent containing the

magnesium stearate or a parallel substance. Once it is laden onto a

reel, it is set to weave a cloth.22

Application of spandex fabrics

Elastic fabrics or spandex fabrics are used in any customer or

manufacturing application in which springiness is preferred. As,

its commencement this type of cloths have become more and more

prevailant, and these days, it is available in hundreds of various kinds

of clothing, and it is applied by clients all over the world. In some

areas, spandex fabric may be applied to create extremely flexible or

fully form decent costumes.23 Conversely, this fabric is comparatively

exclusive, and these types of outfits are quite expensive to the

customers of experts who use them. In its place, it’s much more

communal to see spandex fabric woven into other kinds of fabrics.24

Figure 2 shows the world’s textile contributions.

| Export (%) |
|------------|
| USA | 32.1 |
| China | 29.8 |
| India | 23 |
| Korea | 15 |
| Japan | 9 |
| Pakistan | 5 |
| UAE | 4.1 |
| Indonesia | 4.1 |

Figure 2 World’s textile contribution.

If spandex fabrics are used with cotton fibers, they become

much elastic, and spandex can also be applied to add elasticity to

conventionally inflexible fabrics such as polyester.25 Although small

types of this fabric are further to mingled with other textile products,

these fabrics become much stretcher; as spandex can bounce up to

eight times than its original measurement.26 Elasticity conveyed to this

fabric to other fabrics can be resolve by dividing this stretching latent

by the percentage in which it is comprised in clothing.27

Usual use of spandex in fabrics is particularly for body fitting
garments used in sportswear. For example, it is involved in many kinds

of underclothing for men and women, and even if it isn’t existent in

the shell fabric of an underclothing garment; it is almost constantly

exist in the waistband.28 Actually, spandex fabric is initiate in the

waistbands of almost each type of stretch clothing. Spandex is

also recycled in comparatively high percentages in cotton and wool

smacks.29 Consuming this fabric in smacks helps these clothes to keep

on your bases, and it also eases the exhausting and elimination of

socks.

This fabric is extremely common in casualwear. In most kinds of

muscular pursuits, wearing garments that gallop adjacent to the skin.30

Spandex fabric is applied in beachwear, bicycling apparel, and kinds

of fashion those are applied in modest team sporting. Spandex cloths

are also used in industrial applications.31 For example, it is used in

the movie industry to make gesture capture outfits, which are unusual

kinds of bodysuits that performers attire in front of green monitors.32

Spandex creates it informal to make realistic 3D letterings by creating

ensembles ride close to the figures of performers.33

Because of its innovation and the comparatively protracted

production procedure used to create it, spandex fabric demands a

comparatively high market charges.34 It is more exclusive than

polyester and nylon, and it is also typically more costly than organic

cloths like wool and cotton.

As elastane is normally recycled in small amounts in apparel,

however, this amplified price does not habitually make itself

ostensibly at the customer level.35 The more the spandex fibers are

used in garments the more the cost of the fabrics are. For example,

definite types of riding gear and expert dance clothes that comprise

high levels of spandex are pretty expensive.36

Textiles and clothing manufacturing countries

The worldwide trade of clothing and textile products is no longer

administered by shares, when the contract on textiles and fashion was

ended.37 Presently, the international trade has been administered by

lawmaking within the polygonal trading scheme, which assisted in the

stable increase of importations from countries with low employment

expenses.38 When client fulfillment is painstaking, the speed of

replacement comes into play. Thus, the countries with propinquity are

more reasonable for those goods where replacement is significant, and

these financial factors will deepen.39 Figure 3 shows the global textiles

market for clothing, fashion and sportswear.

Hence, cost and positions are the two drivers supporting the

sourcing choices. Advanced countries like the US, Australia and

the UK are facing a firm deterioration of native textile and clothing

production.40 The states in Asia are the foremost producers of fashion

items everywhere in the world. Amongst the Asian nations, China

endures to be the foremost exporter of textiles and fashion items.41 Its

segment in world spreads amplified to 30% for cloths and to 40% for

textiles. The European Union and the USA continue the chief markets

for apparel, accounting for 35% and 22%, correspondingly, of world

Citation: Alam SMM, Islam S. Clothing manufacturing and exporting countries of the World: a review. J Textile Eng Fashion Technol. 2020;6(5):179–184.
DOI: 10.15406/jteft.2020.06.00248
Clothing manufacturing and exporting countries of the World: a review

ingresses in 2012. Besides, a mainstream of the Asian nations are among the prominent exporters of dress items.42

Sustainability is a expression often used in relative to environmental matters. Defeat of biodiversity, releases of greenhouse gases, and water contamination are all issues usually known as sustainability contests.43 Though, issues nearby the environment establish a very significant feature of sustainability. Consequently, when thoughtful about how to extent and communicate clothing sustainability, we must be cautious not to focus exclusively on sustainability as it narrates to environmental matters.44

Reliable sustainability within the clothing industry is only conceivable when one deliberates how economic welfares to the industry can be justifiably shared through a society and how the business can manner production while meeting the basic requirements, empowering, and guaranteeing the well-being of all investors.45 On typical, apparel industrial labors are paid two-thirds of the hourly salary earned by workers in other manufacturing productions.46

As part of the literature lecturing these subjects, academics note an amplified need for checking factories for acquiescence with social standards, counting better methods for journalism and deciding issues of exploitation, allowing workers, and allowing employees the right to cooperative negotiating.47 Additionally, environmental misuses in the production, distribution, and ingesting of AT goods are of swelling apprehension in the supply chain.48

From the engineering of fibers to the customer care and disposal of clothes, all actions damage the environment. Procedures within the supply chain necessitate large water and energy inputs and comprise the use of toxic substances in the production of properties.49 The removal of these harmful substances and other wildernesses are also environmental anxieties relevant to the diligence. Textile industry is booming and increasing at high speed expertise.49 Figure 4 shows the destination of Bangladeshi clothing materials to the world.

The textile or Clothing industry’s main aim is to create up-to-date and fashionable design and production of textile materials including Yarn, cloths and fashion wear.50 Parallel to all other nations’ Indian and Chinese clothing markets shown vigorous development whereas Bangladesh is also evolving as foremost manufactures of textile in the world.51 Four Asian countries such as China, Bangladesh, Vietnam and India are the largest clothing exporters in the world.52

China relieves the most prevalent part of 21%, Bangladesh and India both are second position at 14%, where Vietnam arises right in arrears at 12%. Though all four countries have a well improved clothing industry, each has an exclusive business weather that may be more or less appropriate for our manufacturing requirements.53 Low-cost employment is surely a key factor in selecting a supplier for industrial apparels. But don’t markdown other worries that can disturb your quality and deliverability, like employment output and substructure progress.54

Figure 3 Global textiles market for clothing, fashion and sports wear.

Figure 4 Destination of Bangladeshi clothing materials to the World.

Highest exporting countries of the world

China is one of the largest manufacturer and exporter of textiles and clothing items in the world with an export income of 260 billion USD.56 China is a country that is manufacturing every type of textiles and clothing items including fibers, yarns, fabrics, apparel, sportswear, fashion wear etc. This country is also exporting textile machine and machineries including spinning, weaving, knitting, dyeing, printing, finishing, testing equipment and apparel sewing machineries.57 The production capacity of China textile trade is more than half of the global market.

Textile and clothing manufacturing of Germany has an extended history of manufacturing, novelty, and elasticity. Germany is one of the main exporters of knitted clothing, manmade fiber, artificial yarn, and equipment with the export sum of 40 billion USD.58 The nation is world’s 2nd biggest textile exporter and well recognized for high excellence products and decorations of textile and clothing products in the world.59 In the present time, it has distorted its production for low-cost high volume to high superiority goods.

Bangladesh is the 3rd largest textiles and clothing manufacturer and exporter in the world among all the countries of the world with the annual turnover of 40 billion USD.60 This country exports woven, knit items and also yarns, fibers and all other textile facilities. The country’s assets are low employment charge and vast workers.61 Improvement expertise and good superiorities are of many major universal selling marques to Bangladesh.62 The upright abilities of Bangladesh that aids to make sure more limpidity and direction in their team work. The textiles and clothing factories of Bangladesh are expanding very fast with the production order of value added materials of renowned international brands.63 Figure 5 shows the textiles and clothing manufacturing countries of the world.

Vietnam is an expanding textile manufacturer of recent time with an annual turnover of 38 billion USD.64 The country’s chief attention is manufacturing substances with high attractiveness in the overall market and refining its garment and textile networking system.65 Vietnam’s textile and apparel ingesting in the both national and international market create profounder inroads into the clothing bazaar.

Citation: Alam SMM, Islam S. Clothing manufacturing and exporting countries of the World: a review. J Textile Eng Fashion Technol. 2020;6(5):179–184. DOI: 10.15406/jteft.2020.06.00248
Clothing manufacturing and exporting countries of the World: a review

India is one of the biggest textiles and clothing manufacturers and exporters with an annual turnover of 38 billion USD. India has huge production capabilities of every type of items like formal wear, casual, sportswear, fashion wear etc. the county is in 5th position for its wonderful manufacturing and exporting capability.

Italy is next to India, which is also a big textile and clothing manufacturer and exporter with the annual turnover of 36 billion USD. This country has strength for the production of textiles, clothing, machines etc.

Textile and clothing industry of Turkey has a significant character in world textile profession with the competence to come across with the extraordinary standard and a comprehensive range of merchandises. Turkey has an annual turnover of 27 billion USD.

USA is the 8th largest textiles and clothing manufacturer and exporter in the world amongst all the countries with the annual turnover of 27 billion USD. Hong Kong is the 9th largest textiles and clothing manufacturer and exporter in the world among all the countries of the world with the annual turnover of 20 billion USD. This country exports woven, knit items and also yarns, fibers and all other textile facilities.

Spain is the 10th renowned manufacturer and exporter in the world with its quality clothing items. The annual turnover of this country is 20 billion USD. This country has a well reputed goodwill to exports the sophisticated quality products. Presently, these countries are in the driving seats for the textiles and clothing markets across the world.

Conclusion

Recently the world has seen the rise of textile and clothing industry with the increased demand for daily clothing items all over the universe. Although some of the clothing producers still persist in the developed countries, they are belligerent for existence due to low productivity. It is seen from the paper that, European Union is the highest textile importers of the world with a turnover of 83 billion of USD where Korea was the lowest with 5 billion of USD. It is also seen that in world’s textile contribution Indonesia holds the highest position with 29.8% of textile’s export goods. In the world’s textile market women’s apparel holds the highest position with 625 billion of USD. Bangladesh exports the highest amount that is 28% of textile’s market women’s apparel holds the highest position with 625 billion of USD. Indonesia holds the highest position with 29.8% of textile’s export goods.

In the worldwide economic situation, the benefit of USD. Bangladesh exports the highest amount that is 28% of textile market women’s apparel holds the highest position with 625 billion of USD. In the world’s textile market Indonesia holds the highest position with 29.8% of textile’s export goods. Bangladesh exports the highest amount that is 28% of textile’s market women’s apparel holds the highest position with 625 billion of USD. Indonesia holds the highest position with 29.8% of textile’s export goods.

With the increasing demand caused by the widespread applications in the downstream productions, the non-woven section is predictable to observe a faster development rate among the worldwide textile business concluded by the next several years.

Acknowledgments

None.

Funding

None.

Conflicts of interest

The authors have no conflicts of interest regarding the publication of this paper.

References

1. Haseeb M, Haouas I, Nash M, et al. Asymmetric impact of textile and clothing manufacturing on carbon-dioxide emissions: Evidence from top Asian economies. Energy. 2020;196:117094.
2. Chan EMH, Ho CKD, Yip TL, et al. The belt and road initiative’s impact on textile and clothing supply chains in Asia: Views from Hong Kong industrial stakeholders. Belt and Road Initiative–Collaboration for Success. 2020:51–61.
3. Islam S, Haque Md, Arifuzzaman Md, et al. Identifying the causes of the spandex breakage of woven garments and its solutions. Advance Research in Textile Engineering. 2020;1(1):1–24.
4. Sondhi S. Sustainable approaches in effluent treatment: Recent developments in the fashion manufacturing. Sustainable Technologies for Fashion and Textiles. 2020:327–341.
5. Islam S, Parvin F, Urmy Z, et al. A study on the human health benefits, human comfort properties and ecological influences of natural sustainable textile fibers. European Journal of Physiotherapy and Rehabilitation Studies. 2020;1(1):1–24.
6. Setyorini D, Budiono B. The impact of tariff and imported raw materials on textile and clothing export: evidence from the United States market (No. 202004). Department of Economics, Padjadjaran University; 2020.
7. Parvin F, Islam S, Urmy Z, et al. A study on the textile materials applied in human medical treatment. European Journal of Physiotherapy and Rehabilitation Studies. 2020;1(1):26–51.
8. Chae Y, Hinestroza J. Building circular economy for smart textiles, smart clothing, and future wearables. Materials Circular Economy. 2020;2:1–4.
9. Shariful Islam, Shahria Ahmed. Attaining optimum values of the colorfastness properties of sustainable dyes on cotton fabrics. FIBRES & TEXTILES in Eastern Europe. 2020;144(6):1–8.
10. Bischoff C, Wood G. Survival and outsourcing in the South African clothing and textiles industry: The changing fortunes of ClothTran. Case Studies in Work, Employment and Human Resource Management; 2020.
11. Shariful Islam SM, Alam M, Akter S. Detecting the color strength, color intensity, chromophore extent and colorfastness properties of dyed cotton fabrics. International Journal on Emerging Technologies. 2020.
12. Hack-Polay D, Rahman M, Billah M, et al. Big data analytics and sustainable textile manufacturing: Decision-making about the applications of biotechnologies in developing countries. Management Decision; 2020.

13. Shariful Islam SM, Alam M. The significance of medical textiles in COVID-19 treatment. Biomedical Journal of Scientific and Technical Research. 2020.

14. Morgan L, Matthews J, Shen J, et al. Laser peri-dyeing for agile textile design: implementing laser processing research within the textile industry. 2020.

15. Islam S, Parvin F, Urmy Z, et al. A study on the solutions of environment pollution and worker’s health problems caused by textile manufacturing operations. Biomedical Journal of Scientific and Technical Research. 2020.

16. Majumdar A, Sinha SK, Shaw M, et al. Analysing the vulnerability of green clothing supply chains in South and Southeast Asia using fuzzy analytic hierarchy process. International Journal of Production Research. 2020;1-20.

17. Islam S, Parvin F, Urmy Z, et al. The symptoms, contagious process, prevention and post treatment of covid-19. European Journal of Physiotherapy and Rehabilitation Studies. 2020.

18. Belso-Martinez JA, Tomás-Miquel JV, Exposito-Langa M, et al. Delving into the technical textile phenomenon: networking strategies and innovation in mature clusters. The Journal of The Textile Institute. 2020;111(2):266–272.

19. Shariful Islam SM, Alam M, et al. Achieving optimal shrinkage of cotton spandex woven fabrics by apposite heat setting temperature. Advance Research in Textile Engineering. 2020.

20. Kalayci S. The role of trade liberalization and gdpl on textile & clothing export: the case of Japan. Academic Studies in Social, Human and Administrative Sciences. 2020. 271 p.

21. Shariful Islam SM, Alam M, Akter S. Reviewing the sustainability of natural dyes. Advance Research in Textile Engineering. 2020.

22. Morita AM, Moore CCS, Nogueira AR, et al. Assessment of potential alternatives for improving environmental trouser jeans manufacturing performance in Brazil. Journal of Cleaner Production. 2020;247:119156.

23. Shariful Islam SM, Alam M, Akter S. Investigation of the colorfastness properties of natural dyes on cotton fabrics. Fibers and Textiles. 2020;27(2):96–109.

24. Wazna ME, Oualihi S, Gounni A, et al. Experimental and numerical study on the thermal performance of alternative insulation materials based on textile waste: A finite-difference approach. Journal of Industrial Textiles. 2020;49(10):1281–1303.

25. Shariful Islam SM, Alam M, Akter S. Identifying the values of whiteness index, strength and weight of cotton spandex woven fabric in peroxide bleaching of different concentration. Fibers and Textiles. 2019;26(4):96–109.

26. Haseeb M, Haouas I, Nasih M, et al. Asymmetric impact of textile and clothing manufacturing on carbon-dioxide emissions: Evidence from top Asian economies. Energy. 2020;196:117094.

27. Islam S. Attaining optimum strength of cotton-spandex woven fabric by apposite heat-setting temperature. Journal of The Institution of Engineers (India): Series C. Springer; 2019;100(4):601–606.

28. Chan EMH, Ho CKD, Yip TL, et al. The belt and road initiative’s impact on textile and clothing supply chains in Asia: Views from Hong Kong industrial stakeholders. Belt and Road Initiative–Collaboration for Success Springer. Singapore. 2020:51–61.

29. Islam S, Mominul Alam SM, Akter S. The consequences of temperature on the shrinkage properties of cotton spandex woven fabric. Journal of Textiles and Polymers. 2019;7(1):25–29.

30. Chan MHE, Hob CKD, Yipc TL, et al. Evaluating the impact of the belt and road initiative for textile and clothing companies in Asia. Journal of International Conference Proceedings. 2019;2(1):20.

31. Islam S, Ahmed S. Investigation of the mechanical properties of thermal bonded nonwoven composite produced of blends with sustainable fibers. Advance Research in Textile Engineering. 2019;4(2):1039.

32. Guan Z, Xu Y, Jiang H, et al. International competitiveness of Chinese textile and clothing industry--a diamond model approach. Journal of Chinese Economic and Foreign Trade Studies. 2019.

33. Islam S, Nasif Choudhury JY, Arifuzzaman FI, et al. Detecting the physical properties of thermal bonded nonwoven fabrics. Trends in Textile Engineering and Fashion Technology. 2019;5(2):1–18.

34. Sondhi S. Sustainable approaches in effluent treatment: Recent developments in the fashion manufacturing. Sustainable technologies for fashion and textiles. 2020:327–341.

35. Islam S, Tasnim N, Islam T. Investigation of the change of the shrinkage properties in contradiction to the change of the composition of cotton polyester spandex denim fabrics. Journal of Textile Engineering and Fashion Technology. 2019;5(3):163–168.

36. Sondhi S. Sustainable approaches in effluent treatment: Recent developments in the fashion manufacturing. Sustainable technologies for fashion and textiles. 2020:327–341.

37. Islam S, Yasmin J, Kanon R. Detecting the spandex injuries and therapies of stretched garments. Journal of Textile Engineering and Fashion Technology. 2019;5(3):170–175.

38. Cueto G, Caldas Y, Vaceva G, et al. August. Waste reduction model in a small clothing company-umbrella model. International Conference on Human Interaction and Emerging Technologies. 2019:994–1000.

39. Shariful Islam, Shaharia Ahmed, Md Arifuzzaman, et al. Relationship in between Strength and polyester content percentage of cotton polyester blended woven fabrics. International Journal of Clothing Science. 2019;6(1):1–6.

40. Agrawal TK, Pal R. Traceability in textile and clothing supply chains: Classifying implementation factors and information sets via Delphi study. Sustainability. 2019;11(6):1698.

41. Islam Shariful, Yasmin Jinan, Alam Syed Toufiqul, et al. Identifying the strength properties of cotton polyester blended woven fabrics of different fiber content. Research Journal of Material Sciences. 2019;7(2):1–6.

42. Lin TA, Chuang YC, Lin JY, et al. Weaving carbon fiber/recycled polypropylene selvages to reinforce the polymer-based protective composite fabrics: Manufacturing techniques and electromagnetic shielding effectiveness. Polymer Composites. 2019;40(S2):E1910–E1917.

43. Islam S, Choudhury S, Akter S. The experiential analysis of woven fabric for reproduction. Journal of Textile Science and Technology. 2018;4(01):18.

44. Nyoni AB, Niwane LC, Gonde P. The impact of imported new and second-hand clothing on the Zimbabwe textile and clothing industry. Ethiopian Journal of Textile and Apparel. 2019;1(1).

45. Islam S, Alam SMM, Akter S. Identifying a suitable heat setting temperature to optimize the elastic performances of cotton spandex woven fabric. Research Journal of Textile and Apparel. 2018;28(2):1–28.

46. Kumar PS, Yaashikaa PR. Recycled fibres. Sustainable Innovations in Recycled Textiles. 2018:1–17.

47. Islam S, Alam SMM. Investigation of the acoustic properties of needle punched nonwoven produced of blend with sustainable fibers. International Journal of Clothing Science and Technology. 2018;52(4):1–34.

Citation: Alam SMM, Islam S. Clothing manufacturing and exporting countries of the World: a review. J Textile Eng Fashion Technol. 2020;6(5):179–184. DOI: 10.15406/jteft.2020.06.00248
48. Pal R, Harper S, Vellesalu A. Competitive manufacturing for reshoring textile and clothing supply chains to high-cost environment. The International Journal of Logistics Management. 2018.

49. Shariful Islam, Shilpi Akter, Sutapa Chowdhury. The experiential analysis of woven fabric for reproduction. Journal of Textile Science and Technology. 2018.

50. Kukreja P. Skill mismatch and returns to education in manufacturing: A case of India’s textile and clothing industry. 2018.

51. Shariful Islam, Zakia Urmy, Amirul I, et al. A comparative study on different dimensions of CAD. Trends Textile Eng Fashion Technol. 2018;1(1).

52. Gwangwava E. Enhancing corporate performance of the textile and clothing manufacturing sector through strategic cost management accounting techniques. Doctoral dissertation, Chinhoyi University of Technology; 2018.

53. Islam S. Textile CAD analysis for warp and weft patterning. J Textile Sci Eng. 2018;8:332.

54. Fu B, Shu Z, Liu X. Blockchain enhanced emission trading framework in fashion apparel manufacturing industry. Sustainability. 2018;10(4):1105.

55. Iacobucci D, Perugini F. Changing models of innovation in the EU textile and clothing industry. L'industria. 2018;39(2):173–194.

56. Bullón J, González Arrieta A, Hernández Encinas A, et al. Manufacturing processes in the textile industry. Expert Systems for fabrics production. 2017.

57. Lau YY, Chan MH, Nguyen HO. Assessing the displacement effect of exports with gravity trade model: China’s textile and clothing case and OBOR implications. Journal of International Logistics and Trade. 2017;15(1):19.

58. Costa Maia L, Alves AC, Leão CP, et al. Validation of a methodology to implement lean production in textile and clothing industry. ASME 2017 International Mechanical Engineering Congress and Exposition. American Society of Mechanical Engineers Digital Collection. 2017.

59. Sanatgar RH, Cayla A, Campagne C, et al. Manufacturing of polymeric acid nanocomposite 3D printer filaments for smart textile applications. IOP Conference Series: Materials Science and Engineering. 2017;254(7):072011.

60. Debnath SR, Islam M. A study on current perspective of supply chain management of textile & clothing industry of Bangladesh. Relevant To Future Demand. International Journal of Scientific & Engineering Research. 2017;8(9):430–439.

61. Resta B, Gaiardelli P, Pinto R, et al. Enhancing environmental management in the textile sector: an organisational-life cycle assessment approach. Journal of Cleaner Production. 2016;135:620–632.

62. Hasan KF, Mia MS, Rahman MM, et al. Role of textile and clothing industries in the growth and development of trade & business strategies of Bangladesh in the global economy. International Journal of Textile Science. 2016;5(3):39–48.

63. Debnath S. Natural fibres for sustainable development in fashion industry. Sustainable Fibres for Fashion Industry. Singapore: Springer; 2016:89–108.

64. Mehra B, Bhattachar J, Saxena S, et al. Garden swing hanging dream chair lounger chaise arc stand air porch swing hammock chair-50webs.com. Journal of Laboratory Physicians. 2016;8(1):36.

65. Top 10 exporting countries of textile and apparel industry. Fiber2Fashion; 2019.

66. Howard, E.K., 2016. The External Bottlenecks of the Ghana Textile Industry. Ghana Journal of Science, Technology and Development, 4(2), pp.11-28.

67. Drake EL. An investigation of bloodstains on dark surfaces and under paint with the Foster and Freeman Crime-Lite 825 Infrared and camera. Doctoral dissertation, Los Angeles: California State University; 2016.

68. Chakrabarti S, Banerjee P. Preparation and characterization of multifunctional cotton fabric by coating with sonochemically synthesized zinc oxide nanoparticle-flakes and a novel approach to monitor its self-cleaning property. The Journal of The Textile Institute. 2015;106(9):963–969.

69. Khan ZR, Rodrigues G. Human before the garment: Bangladesh tragedy revisited. Ethical manufacturing or lack thereof in garment manufacturing industry. World. 2015;5(1):22–35.

70. Trensadi C, Sachari A. Identification of values of ornaments in Indonesian batik in visual content of Nitiki game. Journal of Arts and Humanities. 2015;4(6):25–39.

71. Eryuruk SH. Life cycle assessment method for environmental impact evaluation and certification systems for textiles and clothing. Handbook of Life Cycle Assessment (LCA) of Textiles and Clothing. Woodhead Publishing; 2015:125–148.

72. Kapelko M, Lansink AO. An international comparison of productivity change in the textile and clothing industry: a bootstrapped Malmquist index approach. Empirical Economics. 2015;48(4):1499–1523.

73. Shih WYC, Agrafiotis K. Competitive strategies of new product development in textile and clothing manufacturing. The Journal of the Textile Institute. 2015;106(10):1027–1037.