South Asian Textile and Clothing Trade and Advances in Digitalization, Industry 4.0; A Review

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South Asian Textile and Clothing Trade

It will be useful to mention at the very outset about China before embarking on South Asian textile and Clothing trade. China is still dominating the textile and clothing trade world over and by far, the largest producer and exporter of this sector during 2017. China increased their textile and clothing exports by 1.5%, from US$254,948mn in 2016 to US$258,867mn in 2017 [1]. Their share of world textile and clothing exports have remained unchanged during the year 2017. The production of textiles in China grew in 2017. Further, Chinese retail sales of clothing and footwear have shown a remarkable increase in 2017. Chinese major market is EU with an estimated 16.3% share whilst USA was second largest export market with an estimate of 15% in 2017.

South Asian countries such as India, Pakistan, Bangladesh and Sri Lanka have shown a significant export growth in textile and clothing in the recent years. As such, this region is becoming an important place for buyers to source clothing products. This can cause a threat to other exporting nations who are exporting to major markets.

Textile and clothing exports from India accounted for a 13.2% share of the country's total exports during 2016/17 [2]. The total textile and clothing exports of India were US$36,4777.5mn in 2016/17. Textile exports alone from India was US$19,089.1mn and clothing exports were US$17,388.4mn during 2016/17. India has a better textile and clothing export record with EU and had 25.4% share whilst with USA a 20.8% share followed by the United Arab Emirates (UAE) with 13.0%, Bangladesh with a 5.8% share and China with a 4.6% share.

Bangladesh's economy relies on their textile and clothing industries. The exports from textile and clothing accounted for 87.3% of the country's total export earnings during 2016/17. However, in 2016/17 their textile and clothing export growth was 0.5% from US$30,108.5mn to US$30,244.9mn. This growth was possible due to a 3.3% increase in textile and clothing exports to the EU. There is a decline in the growth pattern of textile and clothing of Bangladesh and this needs to be arrested soon. The sales to USA on textile and clothing fell by 4.0% in 2017. Bangladesh no longer enjoy the duty-free preferential treatment under the USA Generalized Systems of Preferences (GSP) since June 2013. In the meantime, the Bangladesh government has been requested by the countries in the major markets to improve building safety standards and overall labor standards in the country. If the government fails to respond to these requests, they will be denied of the preferential duty-free access to the EU market. EU is their biggest export market for textile and clothing with a 60.1% share of the country's exports to all destinations. The next export market for Bangladesh is USA with an 18% share followed by Canada with a 3.4% share and Japan with a 2.1% share [3,4].

Pakistan's textile and clothing exports increased by 4.4% in 2017 from US$12,464mn to US$13,015.40mn. The textile exports alone were at US$8,072 whilst clothing exports rose from US$4,555.50mn to US$4,943.5mn. Pakistan's biggest market was EU for textile and clothing with an estimated 45.5% share of its total exports to all destinations. The next is USA with an estimated 21.2% share in 2017.

Textile and clothing export industry in Sri Lanka is a major contributor to its national economy. The textile and clothing exports increased by 2.83% in 2017 from US$4,687mn to US$4,820mn. Textile and clothing exports accounted for 58.8% of Sri Lanka's total industrial exports and for 44% of its total exports. The largest market for Sri Lanka's textile and clothing is USA with an estimated 40% share whilst for EU at 37% [3]. However, Sri Lankan Textile and clothing exports declined by 0.6% to USA in 2017 and a 3.5% fall in 2016. The most favored product was man-made fiber clothing with 50.3% of total clothing exports to USA in 2017.

Textiles and clothing exports from Sri Lanka to the EU rose by 4.3% in 2017 (TOI, 2018. No.191). Out of this, sales of textiles grew by 0.9% and clothing up by 4.5% in 2017. A modest growth was shown in woven clothing (up by 5.2%), knitted clothing (up by 4.0%) and woven fabrics up by 1.8%.

The drastic drop in value of the Sri Lankan currency against the American dollar has brought a significant difference in earnings and imports. Since, Sri Lanka has no raw material manufacturing base they pay huge amount of money for import of fabrics and accessories. If the country needs to improve upon value addition they would need to reduce the gap between earnings and imports. Sri Lanka would need to think of producing woven fabrics for their export-oriented clothing industry. All efforts would be needed to improve the economic situation, if not the clothing industry will meet tough challenges in executing their export orders.

Industry Revolution-Digitalization

The world is at the beginning of the fourth industrial revolution in the form of a digital transformation and called as Industry 4.0. It is that the production machinery are no longer manufactures product, but the product communicates with the machinery to tell it exactly what to do [2]. In short, the Industry 4.0 is the connection together of all the digital information and automation which is available to a company. It is not about manufacturing or design but incorporates the entire life cycle of production.

Kumar RA [5] says that the digitization enables the design or the shape of the textile product to be stored in computer and retrieved over networks and or the world wide web. Digitizing involves the process of spatial data acquisition, geometry modelling, digital archiving and web-based representation [5].

Germany's Textile industry has started to strengthen their market position. The efforts have been taken to implement digital operations technologies and digital transformation processes. But their companies have shown backward approach to implement such advanced technologies. Therefore, Germany has set-Up a Textile Learning Factory 4.0 in Aachen. This factory shall offer help and services to companies to overcome the challenges and drive the implementation programme [6].

The use of technology and computer applications are not new to the textile and clothing industry. In fact, the first digitalization in the clothing industry was the marker making which came in 1970s and it stored graded pattern pieces digitally. With the advent of computerized marker making, the industry moved forwards into production and backwards into design. Whilst these were successfully implemented, the digitalization was introduced in the way of electronic point of sale at the retail outlets. Therefore, the whole range of applications in the form of digital management information systems came into being, such as, enterprise resource planning, connections with supply chain, manufacturing, warehousing, dispatch, after-sales service etc. was improved with digital management information systems [2]. Sewing floor has always been labor intensive. Efforts have been taken to automate the process but, yet it has not been successful. It is the skill of the operator that is difficult to replace because the skilled operator knows how to deal with the drape, handle and other characteristics of different fabrics. Therefore, to deal with more diverse, personalized and intricate garments, the current production methods may need to replace by multi-skilled, process improvement and fast reacting teams. Most of the functions in the sewing machine are being changed over to electronics thus improvement in quality and efficiency and their consistencies will bring new dimension to the sewing floor.

Amongst many goals that clothing industry would like to set, one important goal that most industrialists want a solution is to reduce the lead time and more particularly in sample making. Average time taken to have an approved red tag sample is 16 to 20 days depending on the design. Many technologists and engineers have been studying how fashion industry use 3-dimensional technology? So far, industry has been achieved is the first fit approval and not the pre-production and pilot production samples. What is required is a computer assisted sample to be approved by the buyers. With technology available the movement to and from, buyer and factory has been reduced thus no. of samples making is reduced but sample making has not been stopped. The buyers still want to see the real sample on the body, feel the texture of the fabric and the test performance. Also, it is of paramount importance to establish a good fit standard to feed to the technology [1].

In the clothing industry technologies and advanced software have been integrated to bring out smart cohesive systems. But the fashion industry is slow, and it might take a long time to bring a range of fashion articles to market [2]. Therefore, the consumers are forcing the industry to respond quickly and instantaneously to their fashion demands and this is the background to digitalize and transform production. It is interesting note that clothing retail business has already been transformed into digitalization due to huge growth in e-commerce.

Let us see Industry 4.0 may do in the future. At the fabric factory mill, the raw fabric can be called automatically from the fabric stores and feed in to a digital printer and then to an automatic cutter. All the cut components can be moved between operations using automated handling and monitoring, through to the dispatch of the garment. Companies can use RFID to see how many times a garment has been selected, tried on, bought and returned and this enable us to know about the status of the style. The entire production history of the garment, starting from supplier to fabric and operation status of that garment and follow it until forwarders take charge of the cargo. The colour is also another problem area. Colour change under different light sources and on different surface types. Colour can appear different in one direction and, people can have different physical perception of colour. There can have many different such reasons which create difficulties when trying to match colour. Colour is one of the reasons for online returns because actual colour don't match what people see on screen [1]. Digital colour management overcome most of these obstacles. Colour can be measured accurately and communicate its results clearly through digital formats.

The digital technology is coming of age and its usage is also growing and digital information are being shaped into a digitally

holistic entity. Like any other industry, clothing industry will follow the digital transformation in the future. In today's context the world is changing very fast and you need to be quick otherwise you're gone!

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Conflict of Interest

No Conflict of Interest.

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