

**ANALYSIS OF TRADE PERFORMANCE OF INDIAN MEDITECH TEXTILE PRODUCTS:
WITH REFERENCE TO PRE AND POST COVID-19**

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Abstract

Meditech products are the engineered technical textile products mainly used in the medical field and by the general public in their day-to-day life with the purposes of Hygiene, Health care, safety, and specific functionality/performance purposes. The Corona pandemic influenced the people's perceptions and usage of the Meditech textile products at the domestic and international level. This study aims to assess the impact of corona pandemic on India's import and export of Meditech textile products. The growth rate of the products during pre and post corona was studied by using the percentage method. For this purpose, each two years' time period is divided into eight quarters, and to assess the changes in Meditech textile products exports and imports during pre and post corona pandemic, Paired t-test was used. From the study it was observed that there is a significant improvement in India's Overall Meditech textile products trade performance as there is a significant improvement in the exports of Meditech products after corona, and there is no change in imports pre and post corona, which led to decrease in India's trade deficit in Meditech textile products trade during the study period. And at the individual product level, there is a significant change in the export and import of certain products pre and post corona period.

Introduction

According to the Baseline survey report 2020, Technical or engineered textiles are defined as products, materials, and fibres that are used for their functional use rather than for aesthetic purposes. Based on the area of usage technical textiles are classified into 12 segments. They are Agrotech, Buildtech, Clothtech, Geotech, Hometech, Indutech, Meditech, Mobiltech, Oekotech, Packtech, Protech, sportstech.

All these technical textile products are useful in improving the quality of life of people and help in leading life in a better and more comfortable way as these products satisfy the specific requirements of people. Meditech textiles are one of the twelve technical textile segments. Meditech products improve quality of life, life expectancy, as these products ensure the safety, cleanliness, hygiene, and health purposes, at Individual and Medical Health care levels.

According to the baseline survey definition "The Meditech textiles are the medical application textiles made up of fibre, filament, yarn or fabric through the processes of extrusion, spinning, weaving, knitting, nonwoven, braiding and bonding."

Medical textiles are generally used for Cleanliness, human hygiene, healthcare, and other medical practice. Based on the purpose of usage Meditech textile products are broadly classified into Four categories. They are health and hygiene products, non-implantable materials, implantable materials, extra corporal devices. As per Baseline survey on technical textiles in India, there are 74 kinds of Meditech textile products. And these products are classified into 30 ITC-HSN codes by experts from IIT Delhi, which are used as Internationally accepted standard for monitoring the international trade of these Meditech textile products.

Table-1: List of identified Meditech textile Products

1) Adhesive gauge bandage	11) Yarn to clean between teeth (dental floss)	21) Graduated compression hosiery for example, (stockings for varicose veins)
2) Adhesive tape (medicinal)	12) Tubes, pipes, and hoses of vulcanised rubber reinforced/otherwise combined only with textile materials without fittings	22) Panty hose and tights of other fibres
3) Artificial Joints	13) Rubber apron	23) surgical gloves, mittens and mitts
4) Cotton wool medicated	14) Tissue paper for house hold/sanitary purpose in commercial size rolls of width ≥ 36 c.m.	24) Sanitary towels (pads) or sanitary napkins
5) Medicated lint	15) Other viscos rayon filament yarn, other deniers	25) Tampons
6) Bandages without adhesive layer	16) Absorbent cotton wool	26) Napkins and napkin liners for babies
7) Burn therapy dressing socked in protective gel	17) Wadding and articles of wadding n.e.s. of cotton	27) Clinical diapers
8) Micro pores surgical tapes	18) Wadding of man-made fibres	28) Other articles of hdg. 961900
10) Sterile laminaria and laminaria tents and sterile absorbable surgical or dental haemostatics	20) Adhesive tape of a width not exceeding 20 cm.	30) Other adhesive dressings and other articles having an adhesive layer

These products broadly serve various purposes like maintaining Cleanliness, Hygiene, and Safety. Few Meditech textile products are used as body implants such as Artificial Liver and Artificial lungs, Orthopaedic implants such as artificial bones, Tissues and surgical disposables are used to maintain hygiene and sterile operations, and vascular grafts are used to direct the blood flow, and products like Medical wipes are used as Anti-bacterial, antimicrobial, Disinfectants, and Disposable bedsheets, curtains and pillows are used for infection control, surgical sutures are used to join blood vessels or tissues and reduce the risk of bleeding and wound infection, enhance the wound healing and minimise tissue injury, Heart valves which control the blood flow, and prevent back flow of blood, under pads were used absorbing of fluids, surgical dressings were used to apply the compressed pressure to heal the wounded area, Compression stockings were used to manage the issues like venous hypertension, lymphedema, and venous ulcers, and sanitary napkins and baby napkins and adult diapers were used to maintain cleanliness and hygiene. (Baseline survey)¹

Meditech products usage, imports and exports is growing significantly due to the reasons like Increased awareness of people on health and hygiene factors, availability of Meditech products, spread of corona pandemic, and restrictions imposed by government on citizens to use certain Meditech products like Masks, PPE kits and gloves, increased disposable income of middle-class societies, increased pollution and environmental problems and health issues, and development of sophisticated technologies, and standards and various schemes of governments to promote technical textiles usage in various areas led to the growth and development of Meditech textile segment. Among all these factors,

corona pandemic influenced the people's perception and encouraged the usage of Meditech products at a domestic and global level.

India had a trade deficit in case of Meditech products trade before corona virus pandemic. After the pandemic, India's Meditech textile products production capabilities were strengthened and more units started producing less technology and R&D intensive technical textile products.

By 2019-20 Meditech products has a 3% share in total technical textile products exports from the country, and a 6% share in India's total technical textile imports.

Impact of the Covid 19 on Health care sector and Textile industry: Corona pandemic had a great impact on Health care sector, both at individual and institutional level. Hospitals and individuals have started taking more care about the health, hygiene, cleanliness, and safety. Meditech products which serve these purposes have witnessed a significant growth after the corona pandemic. Meditech products like masks, gloves and rubber aprons usage increased due to corona pandemic and such increase in usage led to growth in production and exports of India's Meditech textiles products.

Review of Literature

Kanupriya. (2022), This study is conducted to measure the Indian textile exports competitiveness with Relative framework using Trade complementarity index (TCI), and this study identified that there is a need to improve the export performance of textile industry, and this study recommended various steps like reducing manufacturing costs, reducing import obstacles, and technological upgradation to improve export performance of Indian textiles.

Saravanan. (2022), This study measured the effect of Global slowdown on Exports and Imports for India using time series data from 2001-16. This study analysed Indo-US trade patterns and identified that during pre-global slowdown Exports and imports have followed the consistent trends, whereas during post global slowdown period the exports and imports trend indicated the low volatility. The results indicated that there is a positive impact of Global slowdown on India's trade performance with USA.

Kate. (2022), This paper presented the overview on Indian textile industry and challenges of covid 19 pandemic on Indian Textile industry, descriptive method was used to analyse the data, and it was concluded that covid pandemic had adversely affected the Indian textile industry in terms of Revenue and Growth.

N. Anil. (2021), This paper presents an analysis of India current account balance of payments of India with reference to Foreign trade policy (2015-20) implementation. This paper made an attempt to know the impact of new foreign trade policy implementation on India's Current account trade balance. This paper analysed the Export and Import performance of Merchandise and invisible items pre and post FTP 2015 with the help of Paired sample t-test. It was observed that only Invisibles trade showed a change in its performance, and Merchandised goods doesn't have shown any significant change during the study period.

Kaur. (2021), This study made an attempt to explore the major problems faced by entrepreneurs of the Textile industry in Punjab, due to Covid-19 pandemic, this study also made an attempt to assess the stress levels of entrepreneurs and also the major factors which lead to that stress. Factor analysis was used to identify and summarise the problems faced by the entrepreneurs, and identified seven major problems faced by the entrepreneurs. Later stress levels, and the factors which are causing high level of stress among the employees is identified with the help of regression analysis. It was observed that Working capital factor is causing highest stress among entrepreneurs.

Baseline survey on Technical textiles. (2020), Technical textile Industry in India, Opportunities and challenges Baseline study 2020 is a report on Technical textile industry and it is a comprehensive study report on this industry, this report presented a detailed overview on this Industry, its growth, Trade

performance, Employment potential, Market conditions and future demand for various technical textiles at Domestic and state level, etc. This report helps in Identifying the Meditech textile products and the potential of the Meditech textile sector.

Puneet kumar arora.(2019), This study analysed the relationship between the Financial development and trade performance of the Indian economy with the help of econometrics tools like unit root tests in the presence of endogenous structural breaks and auto regressive-distributed lag bounds test for analysis. It was identified that level of Financial development has significant positive impact on the Exports and Imports and Trade balance of manufactured goods in the economy.

Dr.M.Nirmala. (2019), This paper evaluated the performance of Exports, Imports and GDP on Indian economic growth. This paper used descriptive method to analyse the performance and concluded that Economic growth is depends on Exports and Imports performance of a particular country.

Bhavana Ramachandra Sharma. (2015), In a paper titled “Need of development in Medical textile market in India.” described about the Meditech textiles, uses of Meditech textile products, types of Meditech products, types of raw material used. This paper also justifies and provide the basis for classifying certain item as a technical textile product, and it also presented the analysis on Meditech textiles trade at a global level.

Research Gap

There are few studies available regarding India’s overall trade performance, and importance of Health care sector and implications of Technical textiles in health-care sector. However, no-specific study available on Meditech products Trade performance and the impact of covid pandemic on Export and Import of Meditech textile products. Hence this present study was undertaken to fill this gap by analysing the Indian Meditech products Exports and Imports pre and post Covid pandemic.

Need for the study

The technical textile industry is potential and an emerging segment in the Indian textile market and the Meditech segment was one of the important technical textile segments with a market size of US \$25214mn in 2019-20, and expected to reach US\$ 34736 with the estimated growth rate of 11.58% in 2024-2025ⁱ. It is one of the fast-growing technical segments and this segment’s growth was influenced by Corona pandemic, as corona pandemic have shown a significant impact on People’s perception regarding hygiene, safety factors. It had also shown a significant impact on the institutional health-care sector.

Objectives of the Study

The following objectives were framed to study the India’s Meditech textile products trade trends pre and post corona pandemic.

- 1) To study the Exports of overall Meditech textile products during pre and post corona pandemic.
- 2) To study the Imports of overall Meditech textile products during pre and post corona pandemic.
- 3) To study the Exports of select individual ITC-HSNⁱⁱ code Meditech during pre and post corona pandemic.
- 4) To study the Imports of select individual ITC-HSN code Meditech textile products during pre and post corona pandemic.

Hypotheses of the Study

The following Null hypotheses were framed to test the above objectives:

- 1) **H₀₁**: There is no significant change in the Exports of overall Meditech textile products during pre and post corona pandemic.
- 2) **H₀₂**: There is no significant change in the Imports of overall Meditech textile products during pre and post corona pandemic.

- 3) **H03:** There is no significant change in the exports of individual Meditech products during pre and post corona pandemic.
- 4) **H04:** There is no significant change in the imports of the individual Meditech products during pre and post corona pandemic.

Research Methodology

The following methodology has been adopted for the present study.

Sources of Data: This study is based on secondary data collected from the data base of Directorate General of Foreign Trade, Baseline survey report on Technical textiles and Ministry of Textile annual reports.

Sample type: Total population sampling (a purposive sampling method) was chosen for the present study and all the Thirty Meditech products which are identified as a Meditech products by the Baseline survey on technical textiles by IIT Delhi (2020) are taken as a sample for the present study.

Statistical Tools: Descriptive statistics and Percentage analysis is used to present the Export and Import of Meditech textile products and to test the above hypotheses a Paired sample t-test is used.

Scope of the Study: The present study is confined to analysing the performance of Export and Import of Meditech textile products during Pre and Post covid pandemic periods.

Period of the study: The study was conducted on four years data two years Pre corona and two years post corona data. i.e., financial years starting from 2018 to 2022.

Statistical software: For the purpose of analysis of the data various software has been utilized such as Ms-excel and SPSS (statistical packages for social sciences).

Analysis and Interpretation of Results

Table-2: Exports Growth Pre and Post Corona(Quarterly)

Time period in Quarters	Post-Corona Exports (Value in Lakhs)	Growth rate(%)	Total Growth rate(%)
Apr-June 2020	50126.43		
July-Sept 2020	77834.48	55.28%	55.28%
Oct-Dec2020	82979.88	6.61%	65.54%
Jan-Mar 2021	83815.18	1.01%	67.21%
Apr-June2021	77340.43	-7.73%	54.29%
July-Sept 2021	98123.7	26.87%	95.75%
Oct-Dec 2021	99059.52	0.95%	97.62%
Jan-March 2022	100997.22	1.96%	101.48%
Time period in Quarters	Pre-Corona Exports (Value in Lakhs)	Growth rate(%)	Total Growth rate(%)
Apr-June 2018	56183.26		
July-Sept 2018	60205.51	7.16%	7.16%
Oct-Dec2018	67735.51	12.51%	20.56%
Jan-Mar 2019	66399.69	-1.97%	18.18%
Apr-June2019	62190.96	-6.34%	10.69%
July-Sept 2019	61392.36	-1.28%	9.27%
Oct-Dec 2019	64913.62	5.74%	15.54%
Jan-March 2020	64077.34	-1.29%	14.05%

Source: Author's Calculations from Monthly Exports data (Ministry of Commerce, GOI)

From the above table-2, it was observed that during the pre-corona time period the overall growth rate of Meditech products for twenty four months (for 8 quarters) is 14.05%, and during post corona time period it was significantly improved by 101.48%

During the pre-corona time period overall growth rate in exports showed a positive trend during the first two quarters and reached to 20.56% then the growth rate was reduced to 18.18%, 10.69% and 9.27%, later it was improved to 15.54% and 14.05% respectively in the next subsequent quarters.

During the post-corona time period overall growth rate was steadily improved in the first three quarters and reached to 67.21% and then it was reduced in the fourth quarter and then during the subsequent quarters, it had showed a tremendous positive growth.

During pre-corona time period the growth rate is fluctuating, and in the initial period it is positive growth rate, and from the third quarter onwards it showed a negative growth rate, in all quarters except the seventh quarter.

During post-corona time period there is a tremendous positive growth rate in the second quarter i.e:55.28%, and the growth rate was reduced to 6.61% and 1.01%. Then it had shown a negative growth in the fourth quarter with -7.73%, however in the next quarter it had shown a more positive growth rate of 26.87% during the fifth quarter, this can be due to the revival of corona second phase. The growth rate was significantly reduced to 0.95% and 1.96% during the next two quarters which was due to decrease in the corona pandemic effect after second wave.

TABLE-3:Overall Meditech textile products Exports Growth Rate.

Particulars	Post- Corona	Pre- Corona
Average Growth rate for 8 quarters (Exports)	12.14%	2.07%

From above table-3, it is observed that during pre-corona period the Meditech products exports average growth rate for eight quarters time period is 2.07% and Post-corona the average growth rate for eight quarters time period is increased to 12.14%.

Table-4: Results of Paired t-test for Overall Meditech textile products Exports:

Particulars	Mean	S.D	S.Error	t	df	p
Total export pre & post covid	-6965.8	5302.23	1082.31	-6.436	23	0

The above table-4, presents the paired sample t-test for the data of overall exports of Meditech textile products pre and post corona. The p-value arrived is 0.000 which is less than 0.05($p < 0.05$), thus null hypothesis is rejected. Hence, the results shows that there is a significant difference in the overall Meditech textile products exports during pre and post corona, indicating higher exports during the post corona compared to pre corona time period.

Table-5: Imports growth Pre and Post corona (Quarterly)

Quarters	Post corona Imports(Value in Lakhs)	Growth rate (%)	Total Growth Rate (%)
Apr-June 2020	48993.57		
July-sept 2020	38044.91	-22.35%	-22.35%
oct-Dec2020	68869.78	81.02%	40.57%
Jan mar 2021	103130.04	49.75%	110.50%
Apr-june2021	89149.02	-13.56%	81.96%
July-sept 2021	93291.68	4.65%	90.42%
oct-Dec 2021	119504.98	28.10%	143.92%
Jan-March 2022	112219.2	-6.10%	129.05%
Quarters	Pre corona Imports(Value in Lakhs)	Growth rate (%)	Total Growth Rate (%)
Apr-June 2018	82549.28		
July-sept 2018	86314.69	4.56%	4.56%
oct-Dec2018	79732.96	-7.63%	-3.41%
Jan mar 2019	81972.35	2.81%	-0.70%
Apr-june2019	89124.06	8.72%	7.96%
July-sept 2019	81196.31	-8.90%	-1.64%
oct-Dec 2019	90482.74	11.44%	9.61%
Jan-March 2020	70577.39	-22.00%	-14.50%

Source: Author's Calculations from Monthly Imports data (Ministry of Commerce, GOI)

From the above table-5 it was observed that during pre-corona time period the Overall growth rate of Meditech textile products for twenty-four months (for 8 quarters) is -14.50%, and during post corona time period it was significantly improved by 129.05%.

During pre-corona time period overall growth rate in imports have shown a fluctuating trend during all quarters with 4.56%, -3.41%, -0.70%, 7.96%, -1.64%, 9.61%, -14.50% respectively in the next subsequent quarters. Which indicate fluctuating over entire time period of study.

During post corona time period overall growth rate shown negative growth rate in the first quarter and then it had shown positive growth rate during the subsequent quarters, with 40.57%, 110.50%, 81.96%, 90.42%, 143.92%, 129.05% respectively.

During pre-corona time period the growth rate fluctuates between negative and positive growth rates.

During post corona time period, initially there is a negative growth rate in the first quarter i.e., 22.35%. The growth rate was turned positive and showed a tremendous growth rate of 81% and 49% respectively in subsequent quarters. Then it had shown a negative growth in the next quarter with -13.56%, then it was turned positive with 4.65% and then the growth rate was increased to 28.10% however in the next quarter it had shown a negative growth rate of -6.10%. This indicates that our imports have been reduced in the last quarter compared to the previous quarter, and there are heavy fluctuation in the growth rate.

The reduction in Imports can be attributed to various factors, in the initial days it was due to the shortage of Meditech textile products in the global market, and then improvement in the production capacities in India and it also indicate the reduction in covid 19 cases, and increase in the imports is mainly because of the spreading of the pandemic and also due to increased awareness of the people about the Meditech textile products.

TABLE-6:Overall Imports Growth Rate

Particulars	Post corona	Pre corona
Average growth rate for 8 quarters (Imports)	17.36%	-1.57%

Source: Author's Calculations from Monthly Imports data (Ministry of Commerce, GOI)

From the above table-6 it is found that, during pre-corona period the Meditech products imports average growth rate for 8 quarters time period is -1.57% and post-corona the average growth rate for eight quarters time period is increased to 17.36%.

Table-7: Results of Paired t-test for Overall Meditech textile products Imports

Particulars	Mean	S.D	S.Error	t	df	p
Total import pre & post covid	-468.89	11056.87	2256.974	-0.208	23	0.837

Source: Secondary data analysis

The above table-7 presents the paired sample t-test for the data of Overall Imports of Meditech products pre and post corona. The p-value arrived is 0.837 which is greater than 0.05($p > 0.05$), thus null hypothesis is accepted. Hence, results show that there is no significant difference in the Overall Meditech products Imports Pre and post corona.

Table 8: Trade balance of Select Meditech products during Pre and Post covid-19

Before Corona				After corona			
Month	Exports	Imports	Tradebalance of Meditech products	Month	Exports	Imports	Trade balance of Meditech products
Apr-18	18032.77	26128.44	-8095.67	Apr-20	9811.75	14785.41	-4973.66
May-18	19197.51	30038.22	-10840.7	May-20	17151.13	18881.5	-1730.37
Jun-18	18952.98	26382.62	-7429.64	Jun-20	23163.55	15326.66	7836.89
Jul-18	19414.55	23528.23	-4113.68	Jul-20	25422.93	13765.61	11657.32
Aug-18	20922.57	34101.6	-13179	Aug-20	24526.32	12198.54	12327.78
Sep-18	19868.39	28684.86	-8816.47	Sep-20	27885.23	12080.76	15804.47
Oct-18	22450.88	28546.18	-6095.3	Oct-20	27321.64	16447.93	10873.71
Nov-18	22065.28	27271.83	-5206.55	Nov-20	28019.61	22992.55	5027.06
Dec-18	23219.35	23914.95	-695.6	Dec-20	27638.63	29429.3	-1790.67
Jan-19	21222.19	25646.15	-4423.96	Jan-21	28377.82	28336.87	40.95
Feb-19	21311.91	26661.73	-5349.82	Feb-21	26779.4	29667.85	-2888.45
Mar-19	23865.59	29664.47	-5798.88	Mar-21	28657.96	45125.32	-16467.4
Apr-19	18568.65	26498.48	-7929.83	Apr-21	25747.83	37821.03	-12073.2
May-19	22186.03	33077.52	-10891.5	May-21	24740.2	26816.07	-2075.87
Jun-19	21436.28	29548.06	-8111.78	Jun-21	26852.4	24511.92	2340.48
Jul-19	21821.12	27166.74	-5345.62	Jul-21	32591.47	27903.09	4688.38
Aug-19	19687.18	24866.73	-5179.55	Aug-21	30977.61	29381.8	1595.81
Sep-19	19884.06	29162.84	-9278.78	Sep-21	34554.62	36006.79	-1452.17
Oct-19	20697.93	34240.17	-13542.2	Oct-21	31798.7	41647.43	-9848.73
Nov-19	20651.19	29430.28	-8779.09	Nov-21	31591.5	39965.54	-8374.04
Dec-19	23564.5	26812.29	-3247.79	Dec-21	35669.32	37892.01	-2222.69
Jan-20	22229.48	27367.97	-5138.49	Jan-22	30736.36	38885.24	-8148.88
Feb-20	22292.38	21787.8	504.58	Feb-22	33857.58	35259.85	-1402.27
Mar-20	19555.48	21421.62	-1866.14	Mar-22	36403.28	38074.11	-1670.83

Total	503098.3	661949.8	-158852	Total	670276.8	673203.2	-2926.34
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Source: Ministry of Commerce, GOI(NOTE: Value in Lakhs)

From the above table-8 it was observed that the Overall trade deficit for pre and post period is 158852 (-31.57%), and 2926 (-0.45%) respectively. The overall trade deficit has reduced drastically during this time period, is a result of improved performance of Domestic industry and exports. Indian Meditech textile product exports are 503098.3 during pre-covid, which increased to 670276.8 during the post covid, indicating a 33.23% growth in Indian Meditech textile exports. Similarly, Indian Meditech textile products imports are 661949.8 during pre-covid, which increased to 673203.2 during post covid, indicating only 1.70% growth in the select Meditech textile products imports. The growth rate in Meditech textiles imports (1.70%) is a very less compared to exports (33.23%). Hence the above results indicate that there is a significant improvement in the Production and export of Meditech textile products and imports remained constant during the study period.

From the study it is observed that there is an improvement in Indian Meditech products exports which are used for safety and hygiene purposes and these products are also less technology intensive, and fluctuations in Trade indicate that the usage patterns are influenced by waves of corona pandemic. India needs to improve its performance in Technology intensive products production as it is more profitable compared to less technology intensive where there is less profitability and more competition.

Table9: Impact on Meditech textile products Exports After covid-19

Source: secondary data analysis

The above table-9 presents the paired t-test results for significantly impacted Individual Meditech

PRODUCT'S ITC - HSN CODE	MEAN	S.D	S.ERRO R	t	df	p
COTTON WOOL MEDICATED- 30059010	27.536	61.321	12.517	2.2	23	0.038
MEDICATED LINT- 30059030	8.489	17.415	3.555	2.388	23	0.026
BURN THERAPY DRESSING SOAKED IN PROTECTIVE GEL- 30059050	12.861	28.948	5.909	2.177	23	0.04
SURGICAL GLOVES, MITTENS AND MITTS- 40151100	2206.51	1004.89	205.12	10.76	23	0
OTHER VISCOSE RAYON FILAMENT YARN, OTHER DENIERS- 54031090	119.385	260.267	53.127	2.247	23	0.035
WADDING AND ARTICLES OF WADDING N.E.S. OF COTTON- 56012190	325.714	423.667	86.481	3.766	23	0.001
MADE FIBRES- 56012200	68.868	84.32	17.212	4.001	23	0.001
WADDING AND ARTICLES OF WADDING NES- 56012900	61.117	39.652	8.094	7.551	23	0
ADHESIVE TAPE OF A WIDTH NOT EXCEEDING 20 CM.- 59061000	-15.578	29.744	6.071	-2.57	23	0.017
PANTY HOSE AND TIGHTS OF OTHER FIBRES- 61152990	2085.54	1546.51	315.68	6.607	23	0
ARTIFICIAL JOINTS- 90213100	445.776	783.246	159.88	2.788	23	0.01
ARTICLES HAVING AN ADHESIVE LAYER – OTHERS- 30051090	-2345.9	543.032	110.85	-21.2	23	0
SANITARY TOWELS (PADS) OR SANITARY NAPKINS - 96190010	299.075	282.506	57.666	5.186	23	0
TAMPONS - 96190020	27.383	59.425	12.13	2.257	23	0.034
INFANT DIAPERS - 96190040	63.705	67.323	13.742	4.636	23	0

textile products Exports for Pre and post corona period. Cotton wool medicated (p value $0.038 < 0.05$), Medicated lint (p value $0.26 < 0.05$), Burn therapy dress soaked in Protective Gel p value $0.40 < 0.05$), Surgical Gloves Mittens and Mitts (p value $0.000 < 0.05$)*, Other Viscos Ryan Filament yarn, Other Deniers (p value $0.035 < 0.05$), Wadding and articles of Wadding N.E.S of cotton (p value $0.001 < 0.05$), Wadding of manmade fibres (p value $0.001 < 0.05$), Wadding and articles of wadding NES (p value $0.000 < 0.05$), Adhesive tape of a Width not exceeding 20 CM (p value $0.017 < 0.05$), Panty hose and tights of other fibres (p value $0.000 < 0.05$), Artificial Joints (p value $0.10 < 0.05$), Other adhesive dressings and other Articles having an Adhesive layer (p value $0.000 < 0.05$), Sanitary towels (Pads) or sanitary Napkins (p value $0.000 < 0.05$), Tampons (p value $0.34 < 0.05$), Clinical Diapers (p value $0.000 < 0.05$). Which indicates that there is a significant difference in the above-mentioned product's Exports pre and post corona. Out of Thirty Meditech products fifteen products paired t – test indicated significant change in those products exports pre and post corona and for the remaining fifteen products paired t-test result indicated that there is no significant change in those products exports pre and post corona. Among the significantly influenced products thirteen products are positively impacted due to corona pandemic, and the remaining two products are negatively impacted due to corona. In case of thirteen product, their exports are increased after corona pandemic and for the two products their exports are decreased after the corona pandemic.

Table10: Impact on Meditech textile products Imports After covid-19

PRODUCT'S HSN CODE	Mean	S.D	S.Error	t	df	p
STERILE SURGCL CATGUT,SMLR MTRLS AND STRLE TISSUE ADHSVS FOR SURGICAL WOUND CLOSURE - 30061010	-77.516	144.935	29.585	-2.62	23	0.015
*SURGICLE GLOVES,MITTENS AND MITTS - 40151100	900.768	911.19	186	4.843	23	0
RUBBER APRON - 40159010	12.437	21.74	4.438	2.803	23	0.01
ABSORBENT COTTON WOOL - 56012110	26.747	54.299	11.084	2.413	23	0.024
WADDING AND ARTCLS OF WADDNG N.E.S.OF COTTON - 56012190	-24.97	55.058	11.239	-2.22	23	0.036
PANTY HOSE AND TIGHTS OF OTHER FIBRES - 61152990	-261.88	296.255	60.473	-4.33	23	0
ARTIFICIAL JOINTS - 90213100	-1496.6	3498.06	714.04	-2.1	23	0.047
SANITARY TOWELS (PADS) OR SANITARY NAPKINS 96190010	356.206	642.529	131.16	2.716	23	0.012
TAMPONS - 96190020	46.371	103.075	21.04	2.204	23	0.038
NAPKINS AND NAPKIN LINERS FOR BABIES - 96190030	-156.11	245.856	50.185	-3.11	23	0.005
CLINICAL DIAPERS - 96190040	631.55	373.356	76.211	8.287	23	0
OTHER ARTICLES OF HDG. - 96190090	1438.08	2810.22	573.63	2.507	23	0.02

The above table-10 it represents the Individual products Imports Pre and post corona and paired t- test results for such individual products. Within the Group of Meditech products results presented in Table-4. The paired t- test result arrived for Sterile surgical cutgut, SMLR,MTRLS and Sterile tissue adhesives for surgical wound closure is 0.15(p value $0.015 < 0.05$),Surgical goves, Mittens and Mitts(p value $0.000 < 0.05$),Rubber apron (p value $0.010 < 0.05$),Absorbent cotton wool(p value $0.024 < 0.05$),Wadding and Articles of wadding N.E.S of Cotton(p value $0.036 < 0.05$), Panty hose and tights of other Fibres (p value $0.000 < 0.05$), Artificial Joints (p value $0.047 < 0.05$)sanitary towels (pads) or Sanitary Napkins (p value $0.012 < 0.05$), Tampons (p value $0.038 < 0.05$), napkins and Napkin

liners for Babies (p value $0.005 < 0.05$), Clinical Diapers (p value $0.000 < 0.05$), Other articles of HDG. 961900 (p value $0.020 < 0.05$) have shown that there is a significant difference in the Import of these individual products during pre and post covid pandemic

Out of Thirty Meditech textile products, twelve products paired t-test results indicated a significant difference in their imports during pre and post covid period and remaining eighteen products paired t-test result indicated that there is no significant difference in their Imports during pre and Post covid period.

Among the significantly impacted products seven products are positively impacted due to corona pandemic and five products are negatively impacted. It means that in case of seven products imports are increased and for the remaining five products the imports are reduced after corona. It means that in case of five products India's domestic Industry performance is improved after corona pandemic, which had a positive impact on India's Meditech textiles trade performance.

Findings of the Study

The results of the study indicated a significant improvement in overall Meditech textile products exports during post corona, compared to pre corona time period, and paired t-test on Overall export of technical textile products indicated a significant difference. Whereas it was also observed that during post corona period the overall Meditech textiles imports are increased, compared to pre corona time period, however the paired t-test indicated that there is no significant difference in Meditech imports during the post corona period when compared to pre corona time period.

The Individual Meditech products exports analysis indicated that out of 30 select Meditech products, there is a significant difference in 15 Meditech textile products during pre and post corona pandemic. Among the fifteen products thirteen products exports are positively impacted and two products exports are negatively impacted due to Corona.

The individual Meditech products imports analysis indicated that out of thirty select Meditech products, there is a significant difference in twelve Meditech products, during pre and post corona pandemic. Among the twelve products seven products are positively impacted and five products are negatively impacted due to corona.

As per the overall Exports and Imports data for pre and post time period it was observed that the Overall trade deficit for pre and post period is as 158852(-31.57%) and 2926(-0.45%) respectively, which indicates that overall trade deficit is reduced drastically, and it also indicates the improved performance of Domestic industry, and improved exports during post corona time period compared to the pre corona time period.

Conclusions & Recommendations

The study results indicated that the Corona pandemic had shown significant impact on Indian Meditech textile products exports as Indian exports have increased significantly during post corona pandemic time period.

However, the impact of corona pandemic is less significant on Indian Meditech textile products Imports. And overall Meditech textiles products trade deficit is drastically reduced during the post corona pandemic, which indicates that the corona pandemic has positively impacted the Indian Meditech textile products trade.

The Pandemic provided Indian firms with an opportunity to enhance their production capability to utilise the market potential.

From the study it was observed that due to the corona virus pandemic, there is an increase in consumption and export of Meditech textile products which are used for safety, hygiene, and cleanliness purposes at both global and domestic level, which led to an increase in production and export of Indian Meditech textile products.

However, it was observed that there is an increase in production and export of only specific segment of Meditech textile products which are less technology intensive, and relatively low price when compared

to other Meditech textile products, which are produced by developed countries with the help of sophisticated technology.

- 1) Government needs to notify and recognise certain HSN code products as a technical textile item as suggested by the IIT Delhi, so that it helps in proper assessment of their trade under technical textile category and also helps in availing various benefits provided by the government for encouraging production and export of these products.
- 2) Government needs to incentivise the units engaged in the production of Meditech textile products, especially high technology-intensive, and cost-efficient as it helps in achieving the government objective of becoming a global leader in the Technical textile segment.
- 3) Creating awareness among the people helps in creating a continuous demand for these products and it also helps in improving the quality of life.
- 4) As of now global demand is induced by the corona pandemic and its consequences, to attain the global market and continuous demand there is a need to follow diversified strategies like less cost, discounts and meeting demands on time and incentivise consumption at institutional facilities like Hospitals and health care centres.

Limitations of the Study

This study is based on secondary data, hence all the limitations of the secondary data applicable to this study.

This study is confined to assess the impact of corona pandemic on Meditech textile products and for a study period of 4 years. Hence the results of this study confined to that time period only.

Scope for further Research

A study can be done on other highly impacted segments like Buildtech, Mobiltech, to analyse their Trade performance during corona pandemic.

A comparative study can be done to assess and identify the highly and least impacted segments of Technical textiles during corona pandemic time period.

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ⁱTechnical textile Industry in India, Opportunities and challenges Baseline study report- 2020, Ministry of Textiles, Government of India.

ⁱⁱITC-HSN code: Indian Trade Clarification – Harmonized system of Nomenclature.