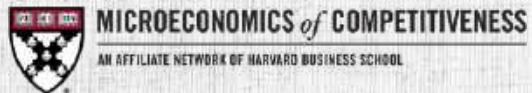


HOW

MINISTRY OF TEXTILES

Developed the Indigenous Supply Chain in India for Manufacturing High Quality PPEs and Testing Swabs during COVID-19 Pandemic Situation?



AGENDA

Introduction

Understanding the Personal Protective Equipment Industry – Global Overview

Rise of Indigenous Personal Protective Equipment Healthcare Industry In India

Local Capacity-Building, Scale And Transformation Journey

Real Heroes In The Transformation Journey

The Next Steps – Towards the Future



Rise of Covid-19

On 31st December 2019,

World Health Organization (WHO) China Office got information regarding the sudden rise of pneumonia related deaths in the city of **Wuhan** in Hubei province, China (WHO Website, 2020).

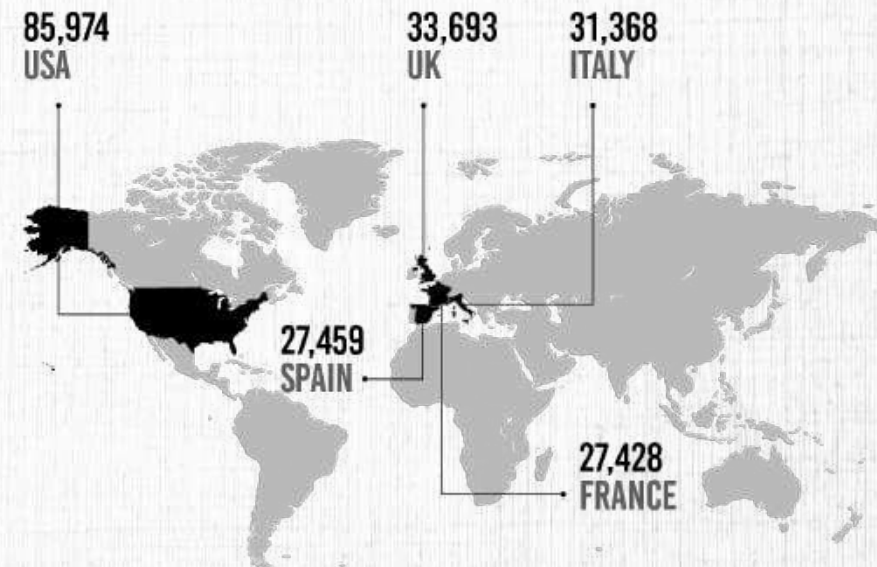
Till 15th May 2020,

more than **4.48 million people got infected** with the novel virus globally across 188 countries, resulting in 0.303 million deaths, which was around 6.7% of the total COVID-19 reported cases (JHU, 15 May 2020).

During April 2020,

COVID-19 cases started a rapid rising trend in India. **India was relying 100% on imports** from China and other countries to meet the demand for PPE Kits.

The Top 5 nations, which faced a significant outbreak of Covid-19 virus resulting in 0.206 million deaths (65% of total deaths) till 15th May 2020 included



MOUNTING CHALLENGES



The Honorable PM MODI commented in May 2020, “When the COVID-19 crisis started in January 2020, **not even a single PPE kit including full body coverall was manufactured in India**, and only a few N95 masks were available.”

(BW Online Bureau, 12 May 2020).



Rapid spread of COVID-19 pandemic became one of the toughest challenges for Government of India



India facing a huge challenge regarding availability of high quality PPE kits.

Local **manufacturing** capability **negligible**.

100% dependency on import of PPE Body Coveralls, N-95 masks, testing kits, and ventilators from global companies like 3M, DuPont, and Honeywell etc. having large manufacturing setups in China, USA and Europe.

Mounting export restrictions of PPE kits in countries having manufacturing capabilities.

Healthcare Staff (doctors, nurses, support staff, cleaners and social workers) working on 24*7 basis and becoming prone to contracting COVID-19 diseases.

According to the demand estimates prepared in March 2020 by the Empowered Group headed by Dr. Vinod Kumar Paul (Member, NITI Aayog), **India required more than 20 Million PPE Kits and 40 Million N-95 class masks by July 2020. This translated into the daily average of almost 20,000 PPE Kits and 400,000 N-95/FFP-2 class masks per day.**

GO-LOCAL INITIATIVE

OPERATION PPE COVERALL

Government of India (GOI) decided to adopt the **indigenization route** to gain self-sufficiency in availability of high-quality PPE kits for the people in India.

GOI involved **Ministry of Health and Family Welfare** (MoHFW) and **Ministry of Textiles** (MoT) to undertake the preliminary study during Jan – Feb 2020 and launch the **indigenization approach for manufacturing world-class PPE Body Coveralls** on war-footing.

MoT launched the **Operation PPE Coverall** on 24th March 2020 amidst nation-wide lockdown announced by the GoI on the same day.

A transformation journey showcasing the synergy and commitment towards serving the national cause among Indian Government, Ministries, Government employees, Corporates, and healthcare staff.

The Hon'ble PM MODI commented in May 2020, *“Today two lakh PPE kits and N95 masks are manufactured in India.”*

(BW Online Bureau, 12 May 2020).

During 1st Apr – 12th May 2020, India developed an ecosystem to manufacture **200,000 items** of PPE Body Coveralls and N-95 masks each per day.

OBJECTIVE OF THE STUDY



01

How did the MoT go ahead with the setting up of an indigenous supply chain considering the import dependency, resource scarcity, zooming demand, and nation-wide lockdown?

02

What were the challenges, options and strategic choices for the MoT while setting up an indigenous ecosystem for manufacturing PPE kits?

03

How does the Indian Government look at the post-COVID sustainability of the PPE manufacturers who have made significant investment of time, money and efforts in this new line of business?

THE PPE INDUSTRY

GLOBAL OVERVIEW

PPE is defined globally as an equipment, which is worn to minimize the exposure to serious workplace injuries and illnesses. It includes offerings like gloves, face-shield masks (Surgical/N-95), goggles, full body coveralls, safety glasses, shoes, ear plugs, vests, full body suits, respirators, and head covers

(Lakshmanan & Nayyar, 25 May 2020; M&M Website, 2020).

Globally PPE Industry has been valued at **USD 40 billion in 2016** and is projected to reach beyond **USD 58.34 billion by 2022** at a CAGR of 7% (M&M Website, 2020)



The **global healthcare PPE market size** is expected to reach beyond **USD 8.9 billion by 2027** at a CAGR of 8.5% (GVR, 20th Apr 2020).

PPE INDUSTRY IN INDIA - ANALYSING INDIA'S COMPETITIVE ADVANTAGE

PORTER'S DIAMOND FRAMEWORK

GOVERNMENT +++

- On Apr 2020, Ministry of Textiles launched the Indigenous End to End Capacity Building Initiative for Manufacturing PPE Kits
- Strong Support from Government & MoHFW
- HLL Lifecare for Tenders, Collection of PPE Kits and Suppliers Management

CONTEXT FOR STRATEGY & RIVALRY ++

- Increasing Competition – Global & Local PPE Manufacturers
- Govt. Push for Indigenous Capacity Building
- Rapid Capacity Expansion by Global Players
- Stringent WHO Quality Standards
- Volume Based Industry / Price Controlled

DEMAND CONDITION +++

- Healthcare Market: ~\$372 billion in 2022*
- Hospital Industry: \$132.84 billion (FY2022) @ CAGR of 16%*
- No. of Doctors 1.15 million (2018) from 0.83 million (2010)*
- World's Largest Healthcare Scheme – Ayushman Bharat Launched in Sept, 2018
- Increasing Sensitivity of People Towards Hygiene (Face Masks, Body Protection Kits) at Public Places in India

FACTOR CONDITIONS +++

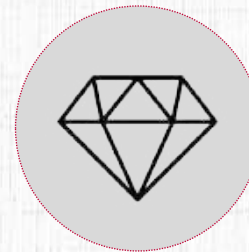
- Large No. of Companies having Capability to Manufacture High Quality PPE Kits, once Trained.
- Large Pool of Skilled People
- Eight Testing Labs for PPE Kits set up across India
- Large Number of Textile Graduates every Year
- Well-Established Industry Bodies and Institutions for Textile

RELATED AND SUPPORTING INDUSTRIES ++

- Limited Number of Specialized PPE Fabric manufacturers in India
- Large Number of Logistics Players in India
- Significant Number of Educational Institutions in Textile Specialization
- Dependency on Imported PPE Machinery & Fabric

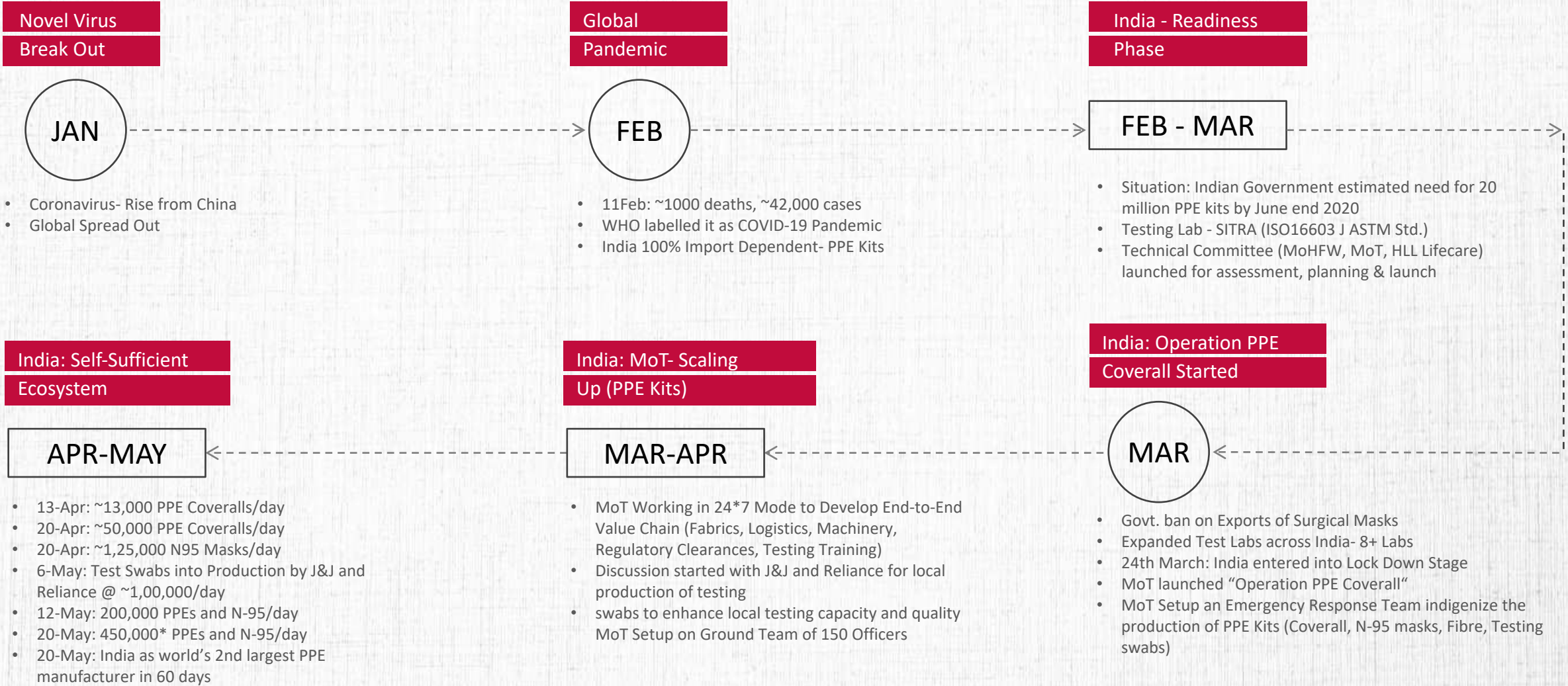
CHANCE FACTOR +++

- Rise of COVID-19 Global Pandemic in Jan-2020
- Till May 2020, 4.48 Million Coronavirus Positive Cases and 0.3 Million Deaths
- Huge Challenge in Importing PPE Kits to Meet Demand in India



INDIA'S INDIGENIZATION JOURNEY

CHRONOLOGY (JAN – MAY 2020)



OPERATION PPE COVERALL

KEY STEPS TAKEN BY MoT



Setting up the Network of
Testing Labs Pan-India.

01



Developing PPE Supply Chain by
Identifying and Supporting New PPE
Manufacturers in India

02



Providing Support for Regulatory
Clearances and Operational Issues

03



Providing 24*7 Support to the
Stakeholders

04



Enabling International Coordination,
Logistics and Customs

05

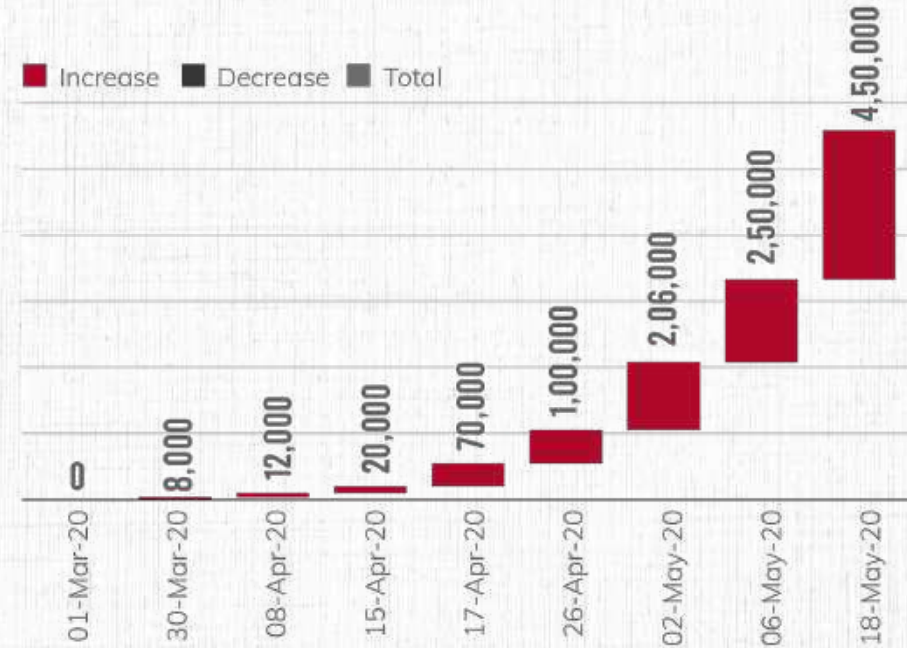


Facilitating Inter-State
Logistics Within India

06

OPERATION PPE COVERALL OUTCOMES

PPE Production in India (Per Day)



The Textile Minister said in the tweet, “After receiving WHO guidelines on PPE, in less than a month’s time, 14 manufacturers cleared rigorous technical testing and started manufacturing indigenous PPEs for our frontline workers.”

(Lakshmanan & Nayyar, 25 May 2020)

OPERATION PPE COVERALL

LEADING PPE MANUFACTURERS



- Allocated Rs.50 crore for supply of 10 lakh N95 masks, 2.8 lakh PPEs & ventilators
- Started production of 10 lakh masks & 1 lakh PPEs

“Given the severity of the disruption, there is a compelling need for a multi-pronged response that includes financial, healthcare & community responsibility.”

Rajashree Birla, Chairperson, Aditya Birla Centre



- Manufacturing more than 10,000 body coveralls per day
- Direct employment by engaging more than 750 workers in PPE manufacturing

“We have five factories in Bangalore where about 750 workers have started making coveralls with all the required permissions. We...have started making 8,000-10,000 suits a day.”

Harish Ahuja, MD, Shahi Exports



- Targets manufacturing of 1 million PPE body coveralls per month

“The suit is indigenously designed, and all the raw material will also be sourced from India only.”

Priya Thapar, Director, JCT



- Converted Alok Industries facilities into PPE plant, and deployed 10,000 tailors to produce 1,00,000 PPEs at 1/3rd price of Rs 650 vs.Rs 2000 per import piece.
- RIL along with J&J and NIV designed and launched high-quality testing swab in 10 days at 10% price of the imported one from China.

“Our target will be to manufacture super specialty fibre required for defence and other critical end uses which are being imported and India is vulnerable for such imports and dictation from the supplier.”

RIL Officials



- Manufacturing more than 10,000 body coveralls per day
- Direct employment by engaging more than 750 workers in PPE manufacturing

Started with the daily production capacity of 2000 PPEs in March 2020.

Harish Ahuja, MD, Shahi Exports



- Pratibha Syntex making 6,000 pieces of body coveralls per day and targeting the scale up to 15,000 per day. Employed 700+ workers.
- Shingora Textiles producing 1,500 PPE body coveralls daily and building capacity to manufacture 5,000 units daily.
- Guru Kirpa Tex Fab manufacturing 10 tonnes of PPE fabric per day.
- Khadi and Village Industries Commission (KVIC) developed the double-layered khadi mask and bagged an order to supply 7.5 lakh masks to J&K Government.

PPE SUCCESS STORY

STAKEHOLDER'S REACTIONS

**Raja M Shanmugam,
President, Tiruppur
Exporter's Association** [1] [2]

“Tiruppur has a huge capacity to make PPE and medical masks. This coordinated effort with the government and initial handholding support from research wings like DRDO, and other research organization would make Tiruppur good enough to supply the PPE kits for the nation in one months' time, if it leverages its entire capacity on an emergency.”

**Raja M Shanmugam,
President, Tiruppur
Exporter's Association** [2]

“We are as much competitive as China because we have the capacity and capability to make PPE kits at one-third of the cost. These PPE kits can be produced at a cost between Rs 200 and Rs 600 or little more (from ordinary to advanced kits) as compared to China's Rs 1,500 a kit. Currently 100 units are engaged in making PPEs, masks of different nature to meet state governments' requirements. So far they have supplied over 2 million pieces of masks and 500,000 units of PPEs.”

**Piyush Goyal, Minister of
Railways and Commerce &
Industry, GOI** highlighted the mission-focus orientation of National Railways and said,

“On the forefront to protect those on the frontline from measuring to cutting & stitching, railways staff works with precision to make PPE. Aiding medical fraternity with protective gear, railways is committed to support India's fight against COVID-19.” [1]

**The Navy spokesperson,
Commander Vivek
Madhwal** spoke about Navy's role in PPE manufacturing as follows,

“Shortage of PPE during the ongoing Covid-19 pandemic is of serious concern as it imperils, the well-being and availability of the healthcare workforce, apart from adversely impacting their security and morale. The Indian Navy has risen to this challenge of making available this critical resource in the fight against Covid-19.” [1]

INDIA'S PPE INDIGENIZATION STORY

THE NEXT STEPS

Sandeep Makkar, Managing Director,
Johnson & Johnson Medical India (JJMI)
said,

“India is a frugal nation where cost economics comes naturally. What everyone in India needs to emphasize is quality. The day everyone in India gets behind quality rather than cost as a starting point, we will create a different perception of being a credible and world-class manufacturer and supplier of high quality goods. Cost will automatically get aligned once processes and quality are in place.”

01

Focus on Consistent Quality Assurance & Control

02

Strengthen the Local Supply Chain from End-to-end

03

Imbibe the Belief – Quality comes First, Cost is Next

04

Drive R&D Efforts to Indigenize Life-Critical Products

05

Be Environment Conscious – PPE Waste and Recycling

06

Government – Role Of Changemaker

07

Maintain the Focus on Exports and Self-reliant India

References

- BW Online Bureau(12 May 2020). Two Lakh PPE Kits, Two Lakh N95 Masks Being Manufactured in India Daily: PM Modi. <http://www.businessworld.in/article/Two-Lakh-PPE-Kits-Two-Lakh-N95-Masks-Being-Manufactured-In-India-Daily-PM-Modi/12-05-2020-191913/> (last accessed 16 May 2020)
- GVR (20 Apr 2020). Healthcare Personal Protective Equipment Market Size Worth \$8.9 Billion by 2027: Grand View Research, Inc. <https://www.prnewswire.com/news-releases/healthcarepersonal-protective-equipment-market-size-worth-8-9-billion-by-2027-grand-view-researchinc-301043300.html> (last accessed 16 May 2020)
- JHU (15 May 2020). COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6> (last accessed 15 May 2020)
- Lakshmanan, R., & Nayyar, M. (25 May 2020). Personal Protective Equipment in India: An INR 7,000 Cr industry in the making. <https://www.investindia.gov.in/siru/personal-protectiveequipment-india-INR-7000-cr-industry-in-the-making> (last accessed 12 June 2020)
- M&M Website (2020). Personal Protective Equipment Market. <https://www.marketsandmarkets.com/Market-Reports/personal-protective-equipment-market-132681971.html> (last accessed 16 May 2020)
- Ravichandran, R. (22 April 2020). COVID-19-hit Tirupur garments cluster sees opportunity in PPEs, masks. <https://www.financialexpress.com/industry/covid-19-hit-tirupur-garmentscluster-sees-opportunity-in-ppes-masks/1935641/> (last accessed 15 June 2020)
- WHO Website (2020). <https://www.who.int/csr/don/05-january-2020-pneumonia-of-unkown-cause-china/en/> (last accessed 15 May 2020)

The Institute for Competitiveness

U 24 / 8, DLF Phase 3
Gurgaon 122 002
Haryana, India



+91 124 437 6676



info@competitiveness.in