

TO UNVEIL THE IMPACT OF COVID-19 PANDEMIC ON THE GARMENT INDUSTRY IN BENGALURU

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ABSTRACT

The Indian clothing market has grown significantly over time and now includes a significant amount of Indian apparel manufacturers. Several variables, including favourable government policies, the availability of trained labour, and cheap labour costs, are responsible for the expansion of the Indian clothing sector. The Textile Upgradation Fund Scheme (TUFS), which offers financial support to garment makers to modernise their equipment and technologies, is one of several actions the Indian government has taken to encourage the expansion of the apparel sector.

The Indian apparel sector has been significantly impacted by the COVID-19 epidemic. The epidemic has presented several difficulties for the sector, which is one of the major employers in the nation. This study attempts to identify the impact of COVID-19 on the garment industries in Bangalore. The employers of garment firms in Peenya, Bangalore, were the subjects of the study. The 6229 ready-made clothing manufacturing units in the Peenya Industrial Area make up the study's universe. Krejcie & Morgan estimated that 364 people would make up the study's sample size. As a result, the sample of 364 respondents was contacted. Primary data was collected using a self-structured questionnaire. The research revealed that Covid-19 has a highly statistically significant impact on various facets of the clothing industry.

Key words: *COVID-19 epidemic, apparel sector, working conditions, demand and supply, digital capabilities.*

PROLOGUE

The apparel sector is one of the biggest and most rapidly expanding sectors in India. It contributes considerably to the country's foreign exchange revenues and plays a critical role in the Indian economy by giving millions of people access to work possibilities. The Indian clothing market has grown significantly over time and now includes a significant amount of Indian apparel manufacturers. Several variables, including favourable government policies, the availability of trained labour, and cheap labour costs, are responsible for the expansion of the Indian clothing sector. The Textile Upgradation Fund Scheme (TUFS), which offers financial support to garment makers to modernise their equipment and technologies, is one of several actions the Indian government has taken to encourage the expansion of the apparel sector.

LITERATURE REVIEW

Seidu et al. (2023) offered a thorough examination of COVID-19's effects on the traditional textile industry subsector. Numerous issues, including unemployment, business closures, economic instability, and high volatility in the global capital markets, have been brought on by the COVID-19 virus' debut in 2019. These issues affect a wide range of industrial industries, including the manufacture of textiles. The Scopus database and Statista are used to find pertinent secondary data. Three study themes—challenges in the textile industry, new material discoveries or solutions, and the performance of the textile industry—have been determined based on the data analysis of 21 seed articles. The findings show that the COVID-19 pandemic has had an impact on the textile sector, interrupted its supply chains, damaged profit margins, suspended hiring, and had an impact on the sale of goods to consumers.

Khurana (2022) detailed how, over the past two decades, the fashion and textile industries have demonstrated their ability to assist the socioeconomic development of underdeveloped nations. The difficulties the Indian textile and fashion industries encountered during and after the epidemic are examined in this article. The sector is currently facing a unique combination of problems caused by the COVID-19 issue, which are in fact the industry's long-term goals. The effects of the pandemic on the industry in India were investigated using primary and secondary research techniques. To gather secondary data from scholarly publications and research and development organisations, a systematic literature review, or S.L.R., is conducted. To verify the secondary data, senior managers and owners from 10 sizable fashion and textile enterprises had qualitative interviews.

Brydges et al. (2021) studied how COVID-19 affected the geographic distribution of that industry in Australia. We analyse the evolution of the Australian fashion sector using a path-dependency paradigm, and we assess how COVID-19, an external shock, has affected this history. The epidemic has had a particularly negative impact on the Australian fashion sector. We address three main issues using a qualitative approach and related set of methodologies that included 24 semi-structured interviews with important industry actors. First, we look at how COVID-19 has affected company dynamics, looking at how fashion firms have

survived a time of great uncertainty by combining very agile internal business practises with industry partnerships.

OBJECTIVES OF THE STUDY

1. To examine the impact of Covid-19 on garment companies' product demand and supply.
2. To examine the impact of Covid-19 on garment companies' working capital
3. To examine the impact of Covid-19 on garment companies' digital capabilities

RESEARCH HYPOTHESIS

H0: There is no significant impact of Covid on Company product's demand and supply, working capital, promotion, digital capabilities, unemployment, labour welfare measures, Opportunity in adversity, Woman workers, and Future of Garments Industry.

H1: There is a significant impact of Covid on Company product's demand and supply, working capital, promotion, digital capabilities, unemployment, labour welfare measures, Opportunity in adversity, Woman workers, and Future of Garments Industry.

RESEARCH METHODOLOGY

Primary data was collected using a self-structured questionnaire. Questionnaire was created and distributed by the researcher through email and WhatsApp. Participants answered to all the items on a scale from 1 (strongly disagree) to 5 (strongly agree) on a Likert scale, which was used to measure the items for these variables.

The employers of garment firms in Peenya, Bangalore, were the subjects of the study. The 6229 ready-made clothing manufacturing units in the Peenya Industrial Area make up the study's universe. Krejcie & Morgan estimated that 364 people would make up the study's sample size. As a result, the sample of 364 respondents was contacted during April and May 2023 using a well-structured, pretested Google Form-based questionnaire.

ANALYSIS OF DATA

Table 1

Ranking of Garments companies in Peenya Industrial Estate, Bangalore	
Top Garments companies in Peenya Industrial Estate, Bangalore	Rank
Mukesh Clothing Company	1
Vastra Concepts	2
Golder Wear	3
United Electrotex Private Limited	4
Grey`s Exim Private Ltd	5
Sonal Garments	6
So Design Factory Pvt Ltd	7
Hindustan Clothing and Marketing Ltd	8
SMS Garments.in clothing	9
N.M.S. Creations	10
Easy Wear Fashion India Ltd	11
Gold Rush Clothing	12
Motherland Gaments India Pvt Ltd	13
Birdy Export India Pvt Ltd	14
Texport industries	15
Meeran Creations	16
SAPL industries Pvt Ltd	17
Creative Garments India Ltd	18
Leaf Star Clothing Factory	19
Trinity United Pvt Ltd	20

The ranking of clothing firms in Bangalore's Peenya Industrial Estate offers important insights into the competitive environment and market presence of these enterprises. Mukesh Clothing Company is at the top

of the list, indicating that it is a reputable and successful company in the market. Vastra Concepts, a business specialising in cutting-edge and fashionable clothing designs, comes closely behind in second place. The third-place finisher, Golder Wear, is reputed to make high-quality clothing. Fourth-placed United Electrotex Private Limited may have a focus on clothing with electrical components. The fifth spot is held by Grey's Exim Private Ltd, suggesting an export-focused strategy.

The rankings emphasise even more the variety of businesses in the region, some of which place a strong emphasis on innovation (N.M.S. Creations and So Design Factory Pvt Ltd) and others of which concentrate on niche markets (SMS Garments.in clothes and Motherland Garments India Pvt Ltd). Furthermore, the inclusion of Texport Industries and Birdy Export India Pvt Ltd highlights the region's importance as a garment exporter. This ranking offers a look into the vibrant and cutthroat nature of the apparel business in Peenya Industrial Estate, exhibiting both well-known brands and cutting-edge upstarts vying for market share.

Table 2

Impact of Covid on Company product's demand and supply, working capital, promotion, digital capabilities, unemployment, labour welfare measures, Opportunity in adversity, Woman workers, and Future of Garments Industry

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.744 ^a	0.553	0.544	0.41451	0.553	62.865	7	356	0.000
b. Predictors: (Constant), Covid									
a. Dependent Variable: Working capital, Demand and supply, Effect on future promotion, Equipped with digital capabilities, Opportunity in adversity, Unemployment, Labour welfare measures									

The findings of a regression study that looks at how COVID-19 (represented by the predictor variable "Covid") affects several facets of the apparel business are reported in the model summary supplied. Although the dependent variable is not specifically stated, it is most likely a composite variable that sums the effects of COVID-19 on the following factors, as indicated by the given predictors:

- Working capital
- Demand and supply of products
- Effect on future promotion
- Equipped with digital capabilities
- Opportunity in adversity
- Unemployment

- Labour welfare measures

R and R Square: The coefficient of determination (R Square) is 0.553, which indicates that about 55.3% of the variance in the total influence of COVID-19 on the mentioned attributes can be accounted for by the predictor variable "Covid." R, or the correlation coefficient, is 0.744 in this instance. This suggests a weakly positive association between COVID-19 and the total influence on the aforementioned areas of the apparel sector.

Adjusted R Square: The adjusted R Square, which takes into account the sample size and the number of predictors to offer a more precise assessment of the model's goodness-of-fit, is 0.544. Although it is a little lower than the R Square, it still shows that the model fits the data rather well.

Estimate Standard Error: The estimate's standard error (Std. Error of the Estimate) is 0.41450. It displays the typical difference between the values that were seen and those that the regression model predicted. Lower numbers denote more accurate dependent variable prediction using the predictor.

F-Test (Statistical Change): The overall relevance of the model is evaluated using the F-Test. With 7 and 356 degrees of freedom (df1 and df2, respectively), the F statistic is 62.865. In comparison to the usual significance level of 0.05, the corresponding p-value (Sig. F Change) is 0.000. As a result, it can be concluded that the regression model is statistically significant and that the predictor variable "Covid" significantly affects the overall effects of COVID-19 on the aforementioned components of the apparel sector. According to the results of the regression analysis, the predictor variable "Covid" significantly explains the variation in COVID-19's combined effects on working capital, product demand and supply, effect on future promotion, equipped digital capabilities, opportunity in adversity, unemployment, and labour welfare measures in the clothing industry. The model fits rather well overall and offers useful insights into how the pandemic has influenced certain facets of the apparel business. The model fits rather well overall and offers useful insights into how the pandemic has influenced certain facets of the apparel business. However, because the precise dependent variable is not identified, it is crucial to interpret the findings cautiously and make sure the model satisfies the prerequisites for regression analysis.

Table 3

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.610	7	10.801	62.865	.000 ^b
	Residual	61.168	356	0.172		
	Total	136.777	363			
a. Dependent Variable: Working capital, Demand and supply, Effect on future promotion, Equipped with digital capabilities, Opportunity in adversity, Unemployment, Labour welfare measures						
b. Predictors: (Constant), Covid						

- The analysis of variance for a regression model that investigates the effects of COVID-19 (represented by the predictor variable "Covid") on several facets of the apparel sector is displayed in the accompanying ANOVA table. Although it is not stated specifically, the dependent variable is defined as a composite variable that reflects the joint effect of COVID-19 on the following aspects:
- Working capital
- Demand and supply of products
- Effect on future promotion
- Equipped with digital capabilities
- Opportunity in adversity
- Unemployment
- Labour welfare measures

Seven predictor variables (Covid) plus a constant term make up the model, which is summarised below. The ANOVA table shows how well the model fits the data as well as how well the predictor variables account for variance in the dependent variable (the total effect of COVID-19 on the mentioned features).

Mean squared regression and regression sum of squares: The dependent variable's overall variance explained by the predictor variable "Covid" is shown by the regression sum of squares (SS), which is 75.610. The regression sum of squares divided by the predictors' degrees of freedom (7 in this example) yields a mean square (MS) value of 10.8101.

After taking into account the predictors, the dependent variable's unexplained variance is represented by the residual sum of squares, which is equal to 61.168. The residual sum of squares divided by the residual degrees of freedom (in this example, 356 degrees of freedom) yields the mean square for the residuals, which is 0.172.

Squares added up in total: The overall sum of squares is equal to 136.777, which indicates the total variance in the dependent variable prior to the consideration of any predictors.

F-Test: The F-test contrasts the variation that can be described by the predictors (the regression sum of squares) with the variation that cannot be explained (the residual sum of squares). The F statistic is 62.865, and the p-value that goes along with it is .000 (also known as "Sig. F" or "p-value"). The regression model is statistically significant since the p-value is below the threshold of 0.05 that is often used to define significance.

Finally, the ANOVA table demonstrates the statistical significance of the regression model, which examines the effects of COVID-19 on working capital, demand and supply, effect on future promotion, equipped with digital capabilities, opportunity in adversity, unemployment, and labour welfare measures. The cumulative effects of COVID-19 on several facets of the apparel sector are significantly influenced by the predictor variable "Covid." The regression model explains a sizable portion of the variation in the dependent variable,

demonstrating that it is an insightful and useful approach for comprehending how the pandemic has affected the apparel sector.

Table 4

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	0.945	0.230		4.103	0.000	0.492	1.398
	Covid	0.804	0.089	0.734	9.049	0.000	0.629	0.978
a. Dependent Variable: Working capital, Demand and supply, Effect on future promotion, Equipped with digital capabilities, Opportunity in adversity, Unemployment, Labour welfare measures								
b. Predictors: (Constant), Covid								

The given coefficients table shows the findings of a straightforward linear regression analysis that looks at how the predictor variable "Covid" affects a dependent variable labelled as "Working capital, Demand and supply, Effect on Future Promotion, Equipped with Digital Capabilities, Opportunity in Adversity, Unemployment, Labour welfare measures." The dependent variable seems to be a composite measure of many elements inside the apparel sector.

0.945 is the constant coefficient (B). The constant in this straightforward linear regression indicates the predicted value of the dependent variable in the event that the predictor variable "Covid" is zero. The interpretation of the constant might not be particularly relevant in this situation, though, as "Covid" is a binary predictor (0 or 1).

Covid Coefficient:

The given coefficients table shows the findings of a straightforward linear regression analysis that looks at how the predictor variable "Covid" affects a dependent variable labelled as "Working capital, Demand and supply, Effect on Future Promotion, Equipped with Digital Capabilities, Opportunity in Adversity, Unemployment, Labour welfare measures." The dependent variable seems to be a composite measure of many elements inside the apparel sector.

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Interval of Confidence for "Covid" Coefficient:

The "Covid" coefficient has a 95% confidence interval between 0.629 and 0.978. We can be 95% certain that the real population value of the "Covid" coefficient resides within the range of values provided by this interval.

According to these results, COVID-19 has a statistically significant impact on a number of areas of the apparel business.

FINDINGS

Covid has a highly statistically significant impact on various facets of the clothing industry, as evidenced by the composite measure of "Working capital, Demand and supply, Effect on future promotion, Equipped with digital capabilities, Opportunity in adversity, Unemployment, and Labour welfare measures." The composite dependent variable significantly increases by 0.804 units when the "Covid" variable goes from 0 to 1, demonstrating the strong impact of COVID-19 on the sector.

CONCLUSION

The COVID-19 epidemic has posed tough obstacles for Bengaluru's apparel sector. Stakeholders in the sector might think about a number of management consequences in order to traverse these difficulties and guarantee a sustainable future. Here are some significant management ramifications for the subject:

Diversification of the supply chain : The pandemic's effects on the supply chain underscored the necessity for diversification. To lessen reliance on one area or nation, managers in the apparel business should think about diversifying sourcing areas and suppliers. Enhancing supply chain resilience and reducing the effects of upcoming disruptions may be accomplished by forging strong bonds with local suppliers and looking into nearshoring possibilities.

Agility in Production and Inventory Management: The pandemic's shifting demand patterns highlight how crucial agility in production and inventory management is. Managers in the apparel business should develop flexible manufacturing methods that can adapt swiftly to changes in demand. Utilising demand planning and data-driven forecasting can assist businesses optimise inventory levels and avoid overstocking or stockouts.

Accept Digital Transformation: The pandemic sped up the use of digital technology in the apparel sector. To increase productivity, improve communication, and streamline operations, managers should give the highest priority to digital transformation activities. Businesses may maintain their competitiveness in the digital era by implementing e-commerce platforms, implementing digital marketing techniques, and investing in automation technology.

REFERENCES

- Ali, M., Rahman, S.M. and Frederico, G.F. (2021), "Capability components of supply chain resilience for readymade garments (RMG) sector in Bangladesh during COVID-19", *Modern Supply Chain Research and Applications*, Vol. 3 No. 2, pp. 127–144.
- Brydges, T. and Hanlon, M. (2020), "Garment worker rights and the fashion industry's response to COVID-19", *Dialogues in Human Geography*, Vol. 10 No. 2, pp. 195–198.
- Brydges, T., Heinze, L. and Retamal, M. (2021), "Changing geographies of fashion during COVID-19: The Australian case", *Geographical Research*, Vol. 59 No. 2, pp. 206–216.
- Brydges, T., Heinze, L., Retamal, M. and Henninger, C.E. (2021), "Platforms and the pandemic: A case study of fashion rental platforms during COVID-19", *Geographical Journal*, Vol. 187 No. 1, pp. 57–63.
- Brydges, T., Retamal, M. and Hanlon, M. (2020), "Will COVID-19 support the transition to a more sustainable fashion industry?", *Sustainability: Science, Practice, and Policy*, Taylor & Francis, Vol. 16 No. 1, pp. 298–308.
- Castañeda-Navarrete, J., Hauge, J. and López-Gómez, C. (2021), "COVID-19's impacts on global value chains, as seen in the apparel industry", *Development Policy Review*, Vol. 39 No. 6, pp. 953–970.
- Dohale, V., Verma, P., Gunasekaran, A. and Ambilkar, P. (2021), "COVID-19 and supply chain risk mitigation: a case study from India", *International Journal of Logistics Management*, Vol. 34 No. 2, pp. 417–442.
- Dörrenbächer, C., Sinkovics, R.R., Becker-Ritterspach, F., Boussebaa, M., Curran, L., de Jonge, A. and Khan, Z. (2021), "The Covid-19 pandemic: towards a societally engaged IB perspective", *Critical Perspectives on International Business*, Vol. 17 No. 2, pp. 149–164.
- Hardy, M., Kagy, G., Meyer, C.J., Tamrat, E. and Witte, M. (2020), "The Impact of COVID-19 on the Lives of Women in the Garment Industry: Evidence from Ethiopia", *Open Science Framework*, Vol. 1, pp. 1–35.
- Hoque, I., Maalouf, M.M., Tanha, M., Islam, M.S., Alam, M.Z. and Sarker, M. (2023), "Implementing and sustaining lean, buyer-supplier role, and COVID-19 pandemic: insights from the garment industry of Bangladesh", *International Journal of Lean Six Sigma*, available at: <https://doi.org/10.1108/IJLSS-05-2022-0103>.
- Kanupriya. (2021), "COVID-19 and the Indian Textiles Sector: Issues, Challenges and Prospects", *Vision*, Vol. 25 No. 1, pp. 7–11.
- Kaur, K. (2021), "The Early Impact of COVID-19 on Textile Industry: An Empirical Analysis", *Management and Labour Studies*, Vol. 46 No. 3, pp. 235–247.
- Khurana, K. (2022), "The Indian fashion and textile sector in and post COVID-19 times", *Fashion and Textiles*, Springer Singapore, Vol. 9 No. 1, available at: <https://doi.org/10.1186/s40691-021-00267-4>.

- Krejcie, R., V.Morgan and W., D. (1996), “(1970) ‘Determining sample Size for Research Activities’, Educational and Psychological Measurement.”, *International Journal of Employment Studies*, Vol. 18 No. 1, pp. 89–123.
- Kumar, R., Gupta, P. and Gupta, R. (2021), “A TISM and MICMAC Analysis of Factors During the COVID-19 Pandemic in the Indian Apparel Supply Chain”, *International Journal of Information Systems and Supply Chain Management*, Vol. 15 No. 1, pp. 1–24.
- Mahendra, S.D. and Sengupta, R. (IGIDR). (2020), “COVID-19 Impact on the Indian Economy - Detailed Analysis”, *Indira Gandhi Institute of Development Research*, No. April, pp. 1–48.
- Majumdar, A., Shaw, M. and Sinha, S.K. (2020), “COVID-19 debunks the myth of socially sustainable supply chain: A case of the clothing industry in South Asian countries”, *Sustainable Production and Consumption*, Elsevier B.V., Vol. 24, pp. 150–155.
- Pang, W., Ko, J., Kim, S.J. and Ko, E. (2022), “Impact of COVID-19 pandemic upon fashion consumer behavior: focus on mass and luxury products”, *Asia Pacific Journal of Marketing and Logistics*, Vol. 34 No. 10, pp. 2149–2164.
- Rao, P.H.N., Vihari, N.S. and Jabeen, S.S. (2021), “Reimagining the Fashion Retail Industry Through the Implications of COVID-19 in the Gulf Cooperation Council (GCC) Countries”, *FIIB Business Review*, Vol. 10 No. 4, pp. 327–338.
- Santos, E. and Castanho, R.A. (2022), “The Impact of Size on the Performance of Transnational Corporations Operating in the Textile Industry in Portugal during the COVID-19 Pandemic”, *Sustainability (Switzerland)*, Vol. 14 No. 2, available at:<https://doi.org/10.3390/su14020717>.
- Sarma, P.R.S., Kumar, A., Choudhary, N.A. and Mangla, S.K. (2021), *Modelling Resilient Fashion Retail Supply Chain Strategies to Mitigate the COVID-19 Impact*, *International Journal of Logistics Management*, available at:<https://doi.org/10.1108/IJLM-03-2021-0170>.
- Seidu, R.K., Jiang, S. xiang, Tawiah, B., Acquaye, R. and Howard, E.K. (2023), “Review of effects of COVID-19 pandemic on the textile industry: challenges, material innovation and performance”, *Research Journal of Textile and Apparel*, available at:<https://doi.org/10.1108/RJTA-08-2022-0098>.
- Su, J., Hodges, N.N., Wu, H. (Jeff) and Iqbal, M.A. (2022), “Coping with the COVID-19 pandemic: evidence from the apparel industry in Bangladesh and China”, *Journal of Fashion Marketing and Management*, pp. 1–19.
- Tam, F.Y. and Lung, J.W.Y. (2022), “Impact of COVID-19 and innovative ideas for a sustainable fashion supply chain in the future”, *Foresight*, No. August, available at:<https://doi.org/10.1108/FS-12-2021-0257>.
- Taqi, H.M.M., Ahmed, H.N., Paul, S., Garshasbi, M., Ali, S.M., Kabir, G. and Paul, S.K. (2020), “Strategies to manage the impacts of the COVID-19 pandemic in the supply chain: Implications for improving economic and social sustainability”, *Sustainability (Switzerland)*, Vol. 12 No. 22, pp. 1–

25.

- Vătămănescu, E.M., Dabija, D.C., Gazzola, P., Cegarro-Navarro, J.G. and Buzzi, T. (2021), “Before and after the outbreak of Covid-19: Linking fashion companies’ corporate social responsibility approach to consumers’ demand for sustainable products”, *Journal of Cleaner Production*, Vol. 321 No. September, available at:<https://doi.org/10.1016/j.jclepro.2021.128945>.
- Zhao, L. and Kim, K. (2021), “Responding to the COVID-19 Pandemic: Practices and Strategies of the Global Clothing and Textile Value Chain”, *Clothing and Textiles Research Journal*, Vol. 39 No. 2, pp. 157–172.
