

# Socio-Economic Impact Assessment of COVID-19 Outbreak in India: An Inclusive Review

Jyoti Vyas Bajpai<sup>1</sup>Nitin Kulshrestha<sup>2</sup>Anupama Bharti<sup>3</sup>Viney Dhiman<sup>4</sup>, Baba Vajrala<sup>5</sup>, Malteshkumar Deshpande<sup>6</sup>

<sup>1</sup>Associate Professor, Department of Human Resource Management and General Management, Prestige Institute of Management and Research, Indore, M.P., India

<sup>2</sup>Assistant Professor, Department of Commerce, Finance and Accounts, Christ (Deemed to be University) Ghaziabad

<sup>3</sup>Assistant Professor, Department of Sociology and Social Work, Himachal Pradesh University, Shimla

<sup>4</sup>MSW, PhD Department of Cardiology, PGIMER, Chandigarh, 160012

<sup>5</sup>Principal and Professor, BIRENDER SINGH COLLEGE OF NURSING Jind, Haryana

<sup>6</sup>Assistant Professor, Department of Mechanical Engineering, PES Institute of Technology and Management Shivamogga, Karnataka

## Abstract

The pandemic due to (COVID-19) has caused enormous loss and disruptions all across the globe. No nation has been spared the wrath of socioeconomic change, from developed to developing. The global economy has started to experience significant upheavals, and it is on its way to a catastrophic recession and an unparalleled economic catastrophe. Because the global economy is heavily interconnected and interdependent through global supply networks, the COVID-19 pandemic has had a significant impact. Covid-19 is a newly discovered worldwide pandemic that has caused significant stress and extraordinary difficulties among the inhabitants of the whole globe. At the moment, most of the world's nations have been badly impacted by this pandemic, with millions of people dying across the world. It has been noted that, as a result of the COVID-19 pandemic, the whole human civilization is confronting a variety of socio-political problems. Most nations' economies have been severely harmed, and political ties between countries are progressively worsening. As a result, the purpose of this research is to emphasize the main effects of the Covid-19 on India's social, political, and economic sectors. The authors have attempted to present a comprehensive overview of the current situation and projection of post COVID world.

**Keywords:** Covid-19, Social, Pandemic, Economic, prosperity, sustainability, India

## 1. Introduction

The history of the world demonstrated that a number of pandemics arose from time to time and had a significant effect on the Social, Political, and Economic life of the whole global community. The Plague, Cholera, Influenza, Malaria, Typhus, and HIV/AIDS were some of the devastating pandemics that posed a significant danger to the survival of the whole human civilization and had a significant impact on people's socioeconomic and political lives. The COVID-19 pandemic has engulfed the whole globe, and India has been particularly hard hit. The disease spread so rapidly that the World Health Organization (WHO) had to designate it as a pandemic. The only way to manage and fight this colossal pandemic was to force individuals to practise social distance while simultaneously preventing them from moving out to avoid social contact. A pandemic is a disease that spreads over a broad geographic region of the globe and affects a huge number of people. It is a worldwide pandemic with a high death rate that affects all aspects of human existence. Throughout history, the international community has been subjected to a number of worldwide pandemics and significant socio-economic damage. Covid-19 is a newly emerged worldwide pandemic that has caused widespread concern across the globe. It is a global problem that is causing severe health problems in virtually every nation on the planet. According to the WHO, the primary cause of Covid-19 may spread via both biotic and abiotic components. Colds, coughs, fevers, and fatigue are among the most frequent symptoms of Covid-19 illness.

It has been observed that the present global scenario is unusual; the Covid-19 illness is quickly spreading across the world. This lethal virus has invaded almost every country on the planet. The world's advanced nations have likewise failed to overcome the pandemic's negative consequences. America, Russia, the United Kingdom, Spain, and Italy are among the top 10 most Corona virus-affected nations (The Indian Express, June 30, 2020). The covid-19 is putting pressure on the whole world's healthcare system, and the medical systems of many industrialized nations are on the brink of collapsing. As of July 4, 2020, a total of 10922324 individuals had been infected, and 523011 people had perished across the globe, and this figure is quickly increasing (Reports WHO).

## 2. Literature Survey

The influence of Covid-19 is confined to people's health and has a significant impact on the world's sociopolitical and economic sectors. Following the emergence of Covid-19, the world economy has experienced a downturn. The preventative measures used by

governments to avert Covid-19, such as lockdowns, quarantines, social isolation, and so on, effectively halted all manufacturing and consuming operations. In addition, international and national trade and commerce and aviation, train, and other transportation services have been halted. Industries, retail malls, and educational institutions were also forced to shut for an unknown length of time. Tourism, often regarded as the backbone of the global economy, has been negatively impacted by Covid-19. According to the World Tourism Organization, the outbreak of Covid-19 has resulted in a 58 to 78 per cent decrease in worldwide tourism production. Furthermore, a significant shift has been seen in the GDP of about 170 rich and developing nations across the world. It is projected that the GDP of the most advanced countries, such as the United States, would fall by 2.4 per cent (Duffin, 2020). According to an IMF estimate, the world economy may contract below 3% as a result of Covid-19, the worst recession since the Great Depression of the 1930s (Indian Express, May 16, 2020). The Covid-19 has also had a significant impact on national and international politics. Because of the Covid-19 pandemic, the governments or governing parties of certain nations seem to be very concerned, while the governments of other countries appear to be taking advantage of the pandemic for political benefit. Many rich and developing nations have already declared a public health emergency. According to a study published by the United Nations Centre for Civil and Political Rights, 84 nations across the globe have declared a state of emergency in response to the pandemic (Quraishi, 2020). Furthermore, it has been seen that the governing parties of certain nations use government machinery for political advantage by severely prohibiting large protest movements. Certain democratically elected presidents in some nations become autocratic by wielding authority as if it were an emergency. According to Reporters Without Borders, 38 nations across the globe limit press freedom; reporters face verbal assaults in the United States and Brazil; and some journalists have been imprisoned in Algeria, Jordan, and Zimbabwe (Reports of Reporters without borders). The Covid-19 also had an effect on elections in many nations across the globe. According to the International Foundation for Electoral Systems (IFES), 61 nations and 8 territories have postponed their elections, for a total of 106 elections postponed due to Covid-19 (Reports of IFES, June 17 2020).

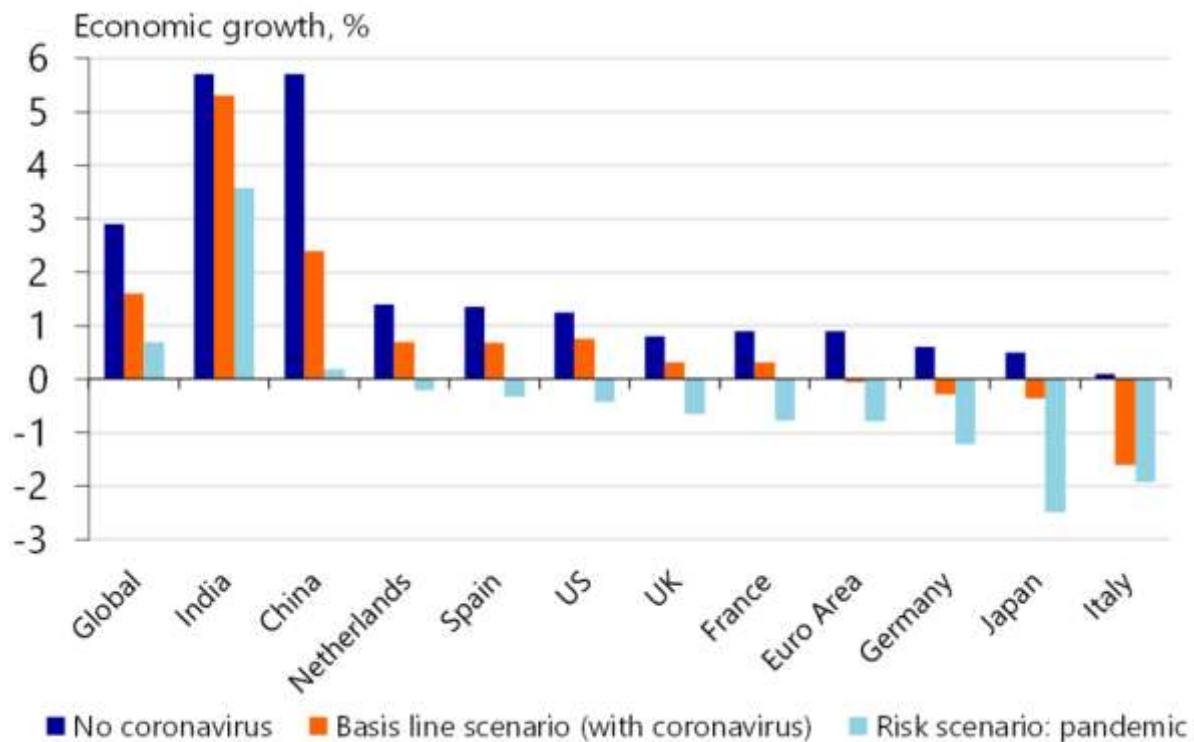
The emergence of Covid-19 caused significant friction in international politics as well. Following the widespread of this lethal virus, many difficulties have emerged in the nations' international relations. America and China have been involved in a warlike scenario. The United States of America chastised China's government and accused it of the spread of the Covid-19 pandemic. Furthermore, despite repeated requests from the Chinese government, American President Donald Trump referred to the Corona Virus as a Chinese virus and vowed to demand compensation for the harm caused by this pandemic (Jhony, 2020). The Chinese government vehemently denied President Donald Trump's claim and blamed America for the spread of the pandemic. The Chinese Ministry of Foreign Affairs has said unequivocally that the American military is to blame for the covid-19 pandemic (The Hindu, May 9 2020). Because of the spread of this virus, China has received condemnation from nations other than the United States, including Brazil, Australia, France, and others. Eduardo Bolsonaro, a member of the Brazilian Congress, claims that "the responsibility for the worldwide coronavirus pandemic has a name and a definite one: the Chinese Communist Party" (Phillips, 2020). Following the outbreak of Covid-19, the World Health Organization, a key institution of the United Nations, is also confronted with many difficulties. Several nations across the world are questioning the WHO's impartiality. Donald Trump, President of the United States, claims that WHO is not an unbiased international organization. He accuses WHO of covering up for China, which he blames for the Coronavirus pandemic. Furthermore, Trump threatened WHO with a permanent cut-off of the UAS's financial commitment to WHO (VOA news, May 19 2020). Tenders Adhanom, Director of WHO, said that he had faced many difficulties since the emergence of this lethal virus. He also said that he had experienced terrible prejudice and racist insults from people all around the globe, as well as a death threat (Kaur, 2020).

India, like the rest of the globe, is not immune to the effects of this lethal virus. However, India is less impacted than other presently afflicted countries since the exact principles implemented by the government at the appropriate moment prevented India from being further harmed. As of July 8, 2020, India's Covid-19 cases totalled 7,42,417, with 20,642 deaths, 2,64,944 active cases, and 4,56,831 recoveries (Report of MHFW, Govt. of India). The Government of India has implemented several preventative measures to preserve people's lives from Covid-19, including quarantine, social distance, and the mandatory use of masks. Furthermore, the government distributed relief money to the impoverished and migratory workers who were affected by the effects of Covid-19. Aside from that, the government offers free rail and quarantine services to migrant employees.

The Covid-19 pandemic severely impacted the Indian economy; before the pandemic, the Indian economy's growth rate was 4.4 per cent, but it fell to 3.1 per cent during the pandemic. According to the International Monetary Fund (IMF), the Covid-19 would significantly impact the vast Indian economy, and it also forecasts a 2% economic growth rate in 2020. (Sharma, 2020). Aside from that, the coronavirus led to a spike in the jobless rate in India; according to CMIS statistics, the monthly unemployment rate rose from 8.74 per cent to 23.52 per cent in April (The Hindu, May 5 2020). The Covid-19 has also delayed India's numerous elections. The Rajya Sabha elections, which were scheduled to take place in March 2020, have been postponed because of the Covid-19. Because of the pandemic, Maharashtra and Karnataka's Panchayat elections were also postponed. As a result, the impact of Covid-19 may be observed in every aspect of society. The severe effects of the pandemic are being felt in all Indian states.

### 3. Economic Impact Assessments

The coronavirus pandemic's impact on India has been mostly disruptive in terms of economic activity and human life loss. Almost all sectors have suffered as domestic demand and exports have declined, with a few noteworthy exceptions seeing strong growth. An attempt is made to evaluate the efficacy and prospective solutions for a few key sectors. In a pictorial sense, the image below depicts the current economic crisis.



**FIG 1.** Average Economic Growth Projection by various Think-tank worldwide

### 3.1. Agriculture And Food

As agriculture is the nation's backbone and an essential category declared by the government, it is anticipated that the impacts on both agricultural primary production and agribusiness use would be modest. Several state governments have allowed fruit and vegetables, milk and other commodities to unrestricted circulation in the past. Due to unclear mobility limitations and the suspension of logistics trucks, online food shopping platforms have been severely affected. The Reserve Bank of India and the finance minister outlined steps that would benefit the industry and workers in the near term. Insulating rural food-producing regions in the next weeks would provide an excellent response to the macro effect of COVID-19 on the Indian food industry as well as the broader economy.

### 3.2. Tourism And Aviation

The aviation and tourism sectors account for about 2.4% and 9.2% of our GDP. Tourism has served about 43 million people in the fiscal year 2018-19. The Pandemic had a major impact on the aviation and tourism sectors. The general opinion seems to be that COVID will have a greater impact on these sectors than 9/11 and the 2008 Financial Crisis. Since the onset of the epidemic, these two sectors have been struggling with significant cash flow problems and are facing a possible 38 million layoffs, which equates to 70% of the entire workforce. Both white and blue-collar workers will feel the effect.

### 3.3. Telecom

Because of adopting the 'work from home' due to limitations, most vital services and sectors have continued to operate throughout the epidemic. With more than 1 billion connections as of 2019, the telecom industry accounts for about 6.5 percent of GDP and employs over 4 million people. Increased broadband use has a direct effect, putting strain on the network. Demand has risen by about 10%. Telcos, on the other hand, are preparing for a significant decrease in new customer additions. As a policy suggestion, the government may assist the industry by easing regulatory compliances and providing a moratorium on spectrum dues, which businesses can utilise to expand their networks.

### 3.4. Pharmaceuticals

Since the onset of the Covid-19 epidemic, the pharmaceutical sector has been on the increase, particularly in India, the world's biggest manufacturer of generic medicines. It has been rising in India, exporting Hydroxychloroquine throughout the globe, particularly to the United States, United Kingdom, Canada, and the Middle East, with market size of \$55 billion by the beginning of 2020.

Because of the epidemic, the costs of raw materials imported from China have recently risen. Because of the industry's dependence on imports, interrupted supply chains, and labour unavailability caused by social distance, generic medicines are the most affected. Simultaneously, the pharmaceutical sector is suffering due to government-imposed restrictions on the export of essential medicines,

equipment, and PPE kits in order to guarantee enough supplies for the nation. The rising demand for these medicines, along with limited availability, is complicating matters. In such a difficult moment, relieving the financial burden on pharmaceutical firms, relaxing taxes, and resolving labour shortages may be distinguishing factors.

### 3.5. Gas & Oil

The twin battle of COVID-19 and the shock on prices of oil are especially damaging to the oil-exporting developing nations when they are faced with a structural downturn in the fossil fuel sector. In 12 years, the petroleum and gas sector is in its third price drop. The industry rebuilt, and business resumed, as standard, after the first two shocks. It's different this time. In this scenario, the supply shock is combined with an extraordinary fall in demand and a worldwide humanitarian catastrophe. Furthermore, the financial and structural health of the industry is worse than in past crises. The emergence of shales, excessive supply and liberal financial markets, which ignored the restricted discipline of capital, all have led to a bad return. Today managers feel that change is unavoidable when costs are reaching down for 30 years, and social pressures are increasing. The COVID-19 crisis sped up to one of the most transformational events in the business already.

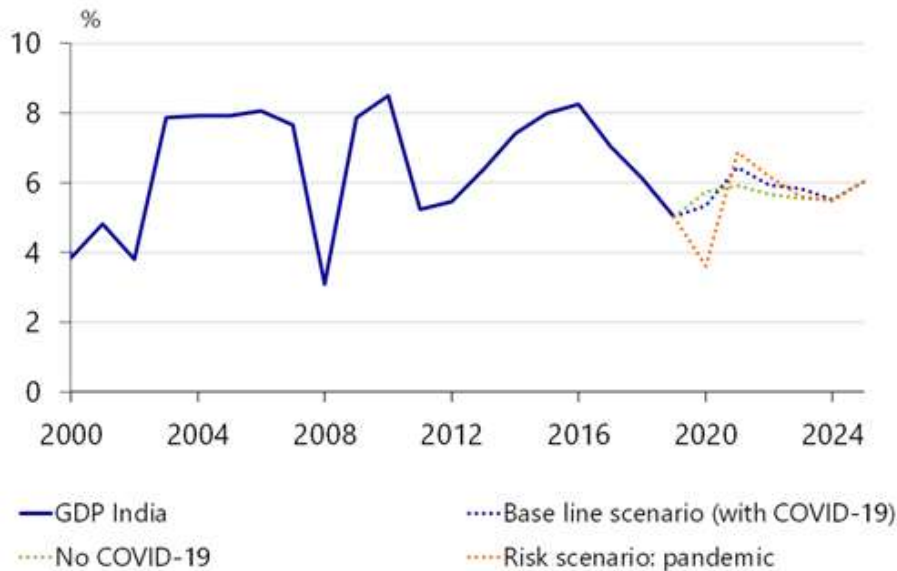


FIG 2. Present Economic projection by RBI [3]

The present time has been adamant but needs strong determination and futuristic vision to recover at least possible. Given the magnitude of the Pandemic's disruption, it is clear that the present slump is fundamentally different from recessions. The abrupt drop in demand and increasing unemployment will change the corporate environment.

### Social Implication

Memories of uncertainty and fear caused by the economic shock in the first wave among migratory populations have reversed movement from the city and led to an enhanced propagation of the virus in rural regions, which are not ready given their inadequate health infrastructure to cope with this shock. For example, 68% of health workers are not formally educated. The vaccination hesitation causes the illness to be new, and many unknowns exacerbate the problem. This has caused much uncertainty and worries, reflecting a lack of confidence in the official information about vaccines, a propensity to embrace a variety of conspiracy theories and dread of potential adverse effects. With the consequence that migrant employees will increase their hazardous health and health care habits. Moreover, fear of the virus in many communities did not "welcome" returnees back, to put it gently, which has implications for both physical and emotional health[18-24].

The conclusion of the first wave led the middle class to a reduction in the perceived significance of preventative measures, including physical distances, with the complete resumption of social events, at least partially responsible for the rapid growth of active cases. One of the major impacts on mental health and psycho-social wellbeing has been the pandemic over the last year, with many of the epidemic's long working hours, concerns about the danger of infections, lack of supplies, financial burdens of medical care that all-cause psychological stress. Unfortunately, in the terrible second wave, many of these concerns proved right. Students, a certain subcategory, could not normally attend their training. More generally, the paradigm shift from the "usual life from the first" caused by the pandemic led to a feeling of uncertainty and hopelessness over the future for many middle-class people, while social distances also affected interpersonal relations, empathy to others and even the execution of important rituals such as funerals. Seniors were also affected severely, owing to extended insulation, for example, during the epidemic.

Meanwhile, higher-income families had their own survival struggles. Although they were able to deal with the epidemic in general, many were also confronted with obstacles when obtaining health care in the second wave. For example, medical supply shortages could not be addressed merely by spending money on the issue, which for once was not a guarantee of success. The capacity/will to pay any amount. In this way, in India, the second COVID wave was a kind of "big social equaliser." However, the poor and vulnerable have been affected considerably harder just to some degree.

India is also a nation that has widespread socioeconomic inequalities among various sectors of the population in non-pandemic periods. This has been worsened by the pandemic, which stresses the effects on health status and the effect of inequalities on material circumstances at work, education, income and housing. While this pandemic has impacted those disproportionately below the socioeconomic pyramid (including a second wave), it may still be beneficial if it is used to address long-term differences in our society. It has also contributed to the epidemic. However, at this time, in the middle of the second wave, it is impossible to perceive the silver lining.

During the first COVID-19 wave in the nation, Indians witnessed images of 1 crore defenceless migrant workers go home on foot. Some of them have died, some have survived. Far from this show, however, another group of informal workers who reside in various areas of India are working women, some of whom manage homes on their own hands, without help that is normally available and frequently reserved for the middle class.

#### **4. Impact on India's Youth**

Nowadays, life seems like a slow-moving river, with the leaves fluttering in the fall wind, the dull yellow lights of the evening, the starlit night sky of July, bringing a sense of calm and tranquilly to life. It's been a long 15 months since a huge portion of our lives were confined to the four walls of our cubicle; this is the terrible fate of millions of students and recent graduates in our nation who are pounding the streets. The world, which is well-equipped with contemporary technology, is adapting to this new normal at a rapid rate. During our meeting, my cousin sister expressed her fears and anxieties about the suffering of students like her, how the pandemic has disrupted our lives, and how the lockdown has impacted young people's mental health and social relationships. This perilous time has put young people's lives in jeopardy.

It separated them from their schools, universities, and close pals. They must distance themselves from friends, instructors, the campus environment, and classrooms. Lunch breaks in college canteens, evenings beneath the shade of those tall green trees, lengthy talks at the tea shop, kiosk, bakery; tunes that my bestie used to hum, covert conversations during class hours. However, social contact and social life are increasingly confined to the screens of smartphones. This has had a significant impact on the lives of young people to tiny children, and it has taken a toll on their mental health. Suicide and sexual harassment among young people are at an all-time high in our nation and across the globe. Hearing about suicide attempts by youngsters we know is very upsetting. According to Dr K Sekhar of Nimhans, they had received four lakh calls since the Covid-19 hotline was launched on March 29. "During Lockdown 3 and Unlock 1, we received suicide calls." "The reasons included being unable to join family, job loss, uncertainty, despair, and worthlessness," he explains [6].

Parents are oblivious to their children's quiet screams. Even while they offer high-functioning computers and digital gadgets for their full-fledged education, they fail to create a suitable support structure for children at home, where they may communicate everything without fear of being judged. Housekeepers and even family members harass many young children. These children suffer in the shadow cast by the pandemic; without a good education or counselling system, their issues go undetected. The Ministry must make initiatives of Human Resources to ensure the appropriate mental health of students and youth, and educational institutions and universities must execute them. Parents and caregivers must be made aware of the importance of their children's mental health. Other than online courses, schools must start activities that will help their students' social development. Instead of overburdening students with increasingly busy schedules and exams, allocate class times in a manner that benefits them. Parents should strive to establish a good relationship with their children and enhance their communication with them. Provide chances for outdoor activities, trips to their places of interest while keeping their safety in mind, and genuine contact with children their age may compensate for this loss to some extent. Another group affected by the pandemic includes job-seeking young people, those who were unable to find employment after university placements, and those who lost their jobs due to the pandemic. Our employment market and economic situation are in shambles, and contemporary government policies and reforms have exacerbated the situation. It is past time to develop and offer sufficient chances for these people, which is a tough job in a corrupt and nepotistic system... It is past time to make adjustments in this direction rather than turning our children into a waste of resources. In this time of crisis, it is critical to share tales of hope and faith with others. The events in this tale took place during World War I. In London, there was a widow who lived alone in a building. There were rumours that Germany was about to attack that location, and everyone was concerned. So, she put a sign in front of her building that said, "Nothing shall harm us." These remarks brought some comfort to those passing by that location. Many people attempted to pass in front of the structure in order to view these words. Unfortunately, Germany attacked that location, destroying the widow's home, but saving her from the event. People mocked her, claiming that she had suffered more loss than others despite her efforts to promote optimism. When a guy asked about it, she said, "You haven't seen the other side of the board; it reads, even if anything befalls us, we will be able to overcome it." It should be our attitude in every situation since things may go wrong. It is critical to have the strength and perseverance to overcome all of the obstacles that are put in our life's race track and reach the finish line.

#### **Discussion**

The global pandemic outbreak has been historic in multiple aspects and never wipe its footprint in the minds of a huge population due to its devastating consequences. India has been many developing countries that would suffer socially, politically, and economically to emerge as a regional superpower. The COVID crisis has seriously challenged present healthcare infrastructural demits, education ecosystem and governance. Through this paper, the authors have attempted to deliberately highlight the present pathetic scenario of the economy and social poverty and insecurity with a particular focus on the young youths of India, which has

a severe impact on their livelihood and career. This time there is a need for joint comprehensive planning between local bodies and government to set up a future goal and work accordingly to eradicate poverty due to COVID and safeguard affected families by necessary comprehension. The role of every individual as well as an organization apart from government becomes essential to recover and grow sustainably with new spirits.

### Reference

1. Mazumdar, P. (2020, April). Governor's rule imposed in Assam's Bodoland territorial area districts. *TheNewIndianExpress*.
2. National Informatics Centre. (n.d.). Covid 19 Dashboard – Government of Assam. <https://covid19.assam.gov.in/>
3. News18. (2020, June 29). COVID-19 impact: Assam changes school calendar to April-march from Jan- Dec. <https://www.news18.com/news/india/covid-19-impact-assam-changes-school-calendar-to-april-march-from-jan-dec-2693347.html>
4. PTI. (2020, May 9). China continues to hide, obfuscate COVID-19 data from world: Pompeo. *The Hindu*. <https://www.thehindu.com/news/international/china-continues-to-hide-obfuscate-covid-19-data-from-world-pompeo/article31540364.ece>
5. PTI. (2020, May 5). India's unemployment rate rises to 27.11% amid COVID-19 crisis: CMIE. *The Hindu*. <https://www.thehindu.com/business/indias-unemployment-rate-rises-to-2711-amid-covid-19-crisis-cmie/article31511006.ece>
6. Quraishi, S. Y. (2020, May 3). Across the world, the coronavirus pandemic has become an invitation to autocracy. *The Wire*. <https://thewire.in/government/coronavirus-pandemic-autocracy>
7. Report of Ministry of Health and Family welfare Govt. of India. (2020, July8). MoHFW Home. <httpswww.mohfw.gov.in/>
8. Barrett C, Bisset K, Leidig J, Marathe A, Marathe M. Economic and social impact of influenza mitigation strategies by demographic class. *Epidemics* 2011Mar;3(1):19–31. pmid: 21339828
9. Faden RR, Taylor HA, Seiler NK. Consent and compensation: A social compact for smallpox vaccine policy in the event of an attack. *Clin Infect Dis*. 2003;36(12):1547-1551. doi: 10.1086/376640
10. Qiu, Wuqi& Chu, Cordia & Mao, Ayan & Wu, Jing. (2018). The impacts on health, society, and economy of SARS and H7N9 Outbreaks in China: A Case Comparison Study. *Journal of Environmental and Public Health*. 2018. 1-7. 10.1155/2018/2710185.
11. Balkhi F, Nasir A, Zehra A, Riaz R. Psychological and Behavioral Response to the Coronavirus (COVID-19) Pandemic. *Cureus*. 2020;12: e7923. doi: 10.7759/cureus.7923. PMID: 32499970; PMCID: PMC7265762 PMC726576.
12. TrupilLimbasiya, Mukesh Soni, Sajal Kumar Mishra, "Advanced formal authentication protocol using smart cards for network applicants", *Computers & Electrical Engineering*, Volume 66,2018,Pages 50-
13. A. Banik, A. Shrivastava, R. Manohar Potdar et al., Design, Modelling, and Analysis of Novel Solar PV System using MATLAB, *Materials Today: Proceedings*, <https://doi.org/10.1016/j.matpr.2021.06.226>
14. Das T.K., Banik A., Chattopadhyay S., Das A. (2021) Energy-Efficient Cooling Scheme of Power Transformer: An Innovative Approach Using Solar and Waste Heat Energy Technology. In: Ghosh S.K., Ghosh K., Das S., Dan P.K., Kundu A. (eds) *Advances in Thermal Engineering, Manufacturing, and Production Management. ICTEMA 2020. Lecture Notes in Mechanical Engineering*. Springer, Singapore. [https://doi.org/10.1007/978-981-16-2347-9\\_17](https://doi.org/10.1007/978-981-16-2347-9_17)
15. Anurag Shrivastava, Sudhir Kumar Sharma, Various Arbitration Algorithm for on-Chip (AMBA) Shared Bus Multi-Processor SoC", *IEEE Students' Conference on Electrical, Electronics and Computer Science (SCEECS- 2016)* organized by MNIT Bhopal, pp.1-7, 2016.
16. Anurag Shrivastava, Sudhir Kumar Sharma, "AMBA AXI Bus Verification Technique," *International Journal of Applied Engineering Research* (Scopus indexed), Vol. 10, no. 24, pp. 44178-44182, 2015.
17. Anurag Shrivastava, Sudhir Kumar Sharma, "A Reliable Routing Architecture and Algorithm for Network-on-Chip," *Journal of Electronic Design Technology*, Vol.6, no.3, pp.40-48, 2015.
18. Anurag Shrivastava, A. Pandit, Design and Performance Evaluation of a NOC- Based Router Architecture for MPSoC, *IEEE Fourth International Conference on Computational Intelligence and Communication Networks*, organized by GLA Mathura, pp .468-472,2012.
19. A. Shrivastava, A. Singh, G.S. Tomar, "Performance Comparison of AMBA Bus-Based System- On-Chip Communication Protocol," *IEEE International Conference on Communication Systems and Network Technologies*, organized by SMVDU Katra, pp. 449-454,2011.
20. A. Shrivastava, A. Singh, G.S. Tomar, "Design and Implementation of High Performance AHB Reconfigurable Arbiter for on chip Bus Architecture,IEEE International Conference on Communication Systems and Network Technologies, organized by SMVDU,Katra, pp .455- 458, 2011.



21. A. Shrivastava, G.S. Tomar, K.K. Kalra, Efficient Design and Performance analysis for AMBA bus Architecture based System-on-Chip, " *IEEE International Conference on Computational Intelligence and Communication Systems* organized by R.G.P.V. Bhopal, pp. 656-660,2010.
22. Anurag Shrivastava, Sudhir Kumar Sharma, "Efficient Buss based router for NOC Architecture, *World Journal of Engineering* (Scopus indexed), Vol. 13, no.4, 2016 Pooja Nagpal., (2022). Organizational Commitment as an Outcome of Employee Engagement: A Social Exchange Perceptive using a SEM Model. *International Journal of Biology Pharmacy and Allied Science*. January, Special Issue, 2022, 11(1): 72-86. <https://doi.org/10.31032/IJBPAS/2022/11.1.1008>.
23. Pooja Nagpal., Kiran Kumar., A.C. &Ravindra., H. V. (2020). Does Training and Development Impacts – Employee Engagement? *Test Engineering and Management*, the Mattingley Publishing Co., Inc., 83. 19407 – 19411. ISSN: 0193-4120.
24. Pooja Nagpal., Kiran Kumar., A. C. &Ravindra., H. V.(2020) .Perceived Organizational Support and Employee Engagement. *Test Engineering and Management*, 83, the Mattingley Publishing Co., Inc., 900-904. ISSN: 0193-4120.
25. Pooja Nagpal., Namitha Rajput, et al., (2021), An inclusive systematic investigation of human resource management practice in harnessing human capital. *Materials Today: Proceedings*, 2021, ISSN 2214-7853, <https://doi.org/10.1016/j.matpr.2021.07.362>.
26. Pooja Nagpal., Kiran Kumar., A.C. &Ravindra., H.V. (2020). Employee Engagement - Impact of Demographic Variables in Indian IT Sector. *Purakala*31 (32), 136-142. ISSN: 0971-2143.
27. Pooja Nagpal., &Kiran Kumar., A.C. (2020).High Performance Work Practices, Role of Engagement and its Outcomes- A Review of Literature Approach. *Studies in Indian Place Names*, 40(56), 326-337. ISSN: 2394-3114.
28. Pooja Nagpal., &Kiran Kumar., A.C. (2019).The Effect of Perceived High Performance Work Practices on Employee Engagement -An Empirical Study on IT Firms in India. *Think India Journal*, 22 (43), 272-278. ISSN: 0971-1260.