

Effects of Corona Pandemic in Global Environment and Economy

ABSTRACT

The COVID-19 pandemic is drawn into concern as the most reprovig international fitness tragedy of the century since the Second World War in December 2019, a new infectious respiration disease come out in Wuhan, Hubei province, China, and the World Health Organization named it as COVID-19 (coronavirus sickness 2019). For the first five months of 2020, the coronavirus pandemic has engulfed the international locations of the sector and changed the pace, material, and nature of our lives. In this evaluation accompanying, we inspect some of the various social, environmental, and economic issues influenced by COVID-19. The COVID-19 pandemic has ended in over 4.3 million confirmed instances and over 290,000 deaths globally. As with the global economy, the Indian economy was faced with multiple constraints too when the pandemic emerged. Social distancing, self-isolation, and travel diminution have led to less staff throughout all economic sectors, and because of that many jobs are lost. Schools have closed down, and there is a requirement for commodities and manufactured products has reduced. In contrast, their requirement for medical essentials has significantly increased. In reaction to this global epidemic, we summarize the effect of COVID-19 on socio-economic conditions on individual factors of the world economy and environment.

Keywords: COVID-19 pandemic, global economy, socio-economic condition, world economy and environment, etc,

INTRODUCTION

The epidemic of the new corona virus infection, COVID-19 become start off from the Hunan seafood market in Wuhan town of China in December 2019, and for over a month it has expanded to become out to be a worldwide fitness urgency. Alive animals such as bat, frog, snake, bird, marmot and rabbit are very often sold on the Hunan seafood marketplace [1,2].

Although the intermediate origin of starting place and convey it to humans is not without an uncertainty known, the quick human to human outspreading capability of this virus has been accepted. As per the current day replace of WHO on 18th April 2020, the COVID-19 epidemic had spread in more than 2 hundred countries. COVID-19, alongside from turn off into the dreadful danger to global public health of the century, is being taken into deliberation as a trademark of inequity and deficiency of social advancement [26]. As is implicate inside the name COVID-19, 'CO' stands for 'corona,' 'VI' for 'virus,' and 'D' for disease, and 19 illustrate the 12 months of its occurrence. The first current COVID-19 pandemic became introduced in December 2019, in Wuhan, Hubei province, China and maximum prime cases were related with source infection from a seafood wholesale market [3,6].

World Health Organization (WHO) announced the COVID-19 outbreak as a world crisis on January twenty, 2020. In a very retaliation government have imposed border shutdowns, travel diminution and quarantine in countries that act the world's largest economies, arousing fears at hand financial condition and stagnation [27]. In an effort to grasp the agitated impact on the economy, we tend to sum up the effect of COVID-19 on individual facet of the public economy, specifying in primary sectors. Since then, the disease recklessly turned around the globe and has ultimately overwhelmed each continent except Antarctica. It has been characterized as a virus by means of the World Health Organization [7].

consequently, COVID-19 has eruption been declared as the sixth public health emergency of worldwide subject of concern on 30 Jan 2020 via the WHO. India imposed a national lockdown from 25 March 2020, which crippled economic activities across States. The resultant demand and supply shocks reverberated across the productive sectors of the economy.[28] In Comparison with different diseases and their corresponding effects, COVID-19 is likely to cause as profusion or more human distress than other infectious illnesses in the whole world. In addition, other globally environmental changes which include soil erosion, ozone layer depletion, pollution, and industerlization, changing atmosphere creates a dubious danger to human health and our planet. To some volume COVID-19 eruption can be taken into concern as an oblique result of worldwide environmental changes. Besides its distracting consequences on human life, the extremist Corona virus disease (COVID-19) has the potentially tends to slacking off the economy not only of China, USA, or India but also of the sector as a whole [29]. Therefore, the

public, governments and healthcare personnel in popular require to reveal alliance and fight side to side for prohibition and confinement of the pandemic. In the present review, our main cognizance is to spotlight the effects of COVID-19 on environment and society [7,9,10].

COVID-19 AND GLOBAL HEALTH

“Pandemic is in fact very common, but we observe it hard to accept in a pandemic when it decreases upon us. There have been as many distresses as wars in history; yet always distress and conflicts take people equally by revelation.” – Albert Camus, The Plague

The relationship between human health and disease is neither a brand-new theory, nor a brand-new thesis. The disclosure of COVID-19 in China at the give up of 2019 has introduced on a big worldwide pandemic and is a primary public health issue. This virus is equitably infectious and can be pass on via driblets and close touch. The human-to-human outspread of the virus happens because of close touch with an infected person uncovered to coughing, sneezing, breathing droplets or aerosols. These aerosols can invade the human body (respiratory system) through insufflate via nostril or mouth. The medical scope for people with COVID-19 infection level from moderate or non-specific signs and symptoms of critical breathing infection together with fever, cough, fatigue, shortness of breath, to severe pneumonia with septic shock and respiratory failure, which are differ just like different Corona virus diseases[30]. It is a concept of exceptional significance to clarify the interrelation among COVID-19 and immune-arthritic patients. COVID-19 being a respiration, damage to the tissues of lungs is quite demonstrative. However, there is recorded data that different organs and tissues will also be affected. Since viral discharge in plasma or serum is not uncommon in respiration tract diseases, there may be a possibility of transference of Corona viruses’ disorder through the transmission of unsteady blood products. COVID-19 is a main public health issue for the world's population and is a main purpose of hospitalization and death, especially for middle and old age people in the affected countries. [3,4,5]

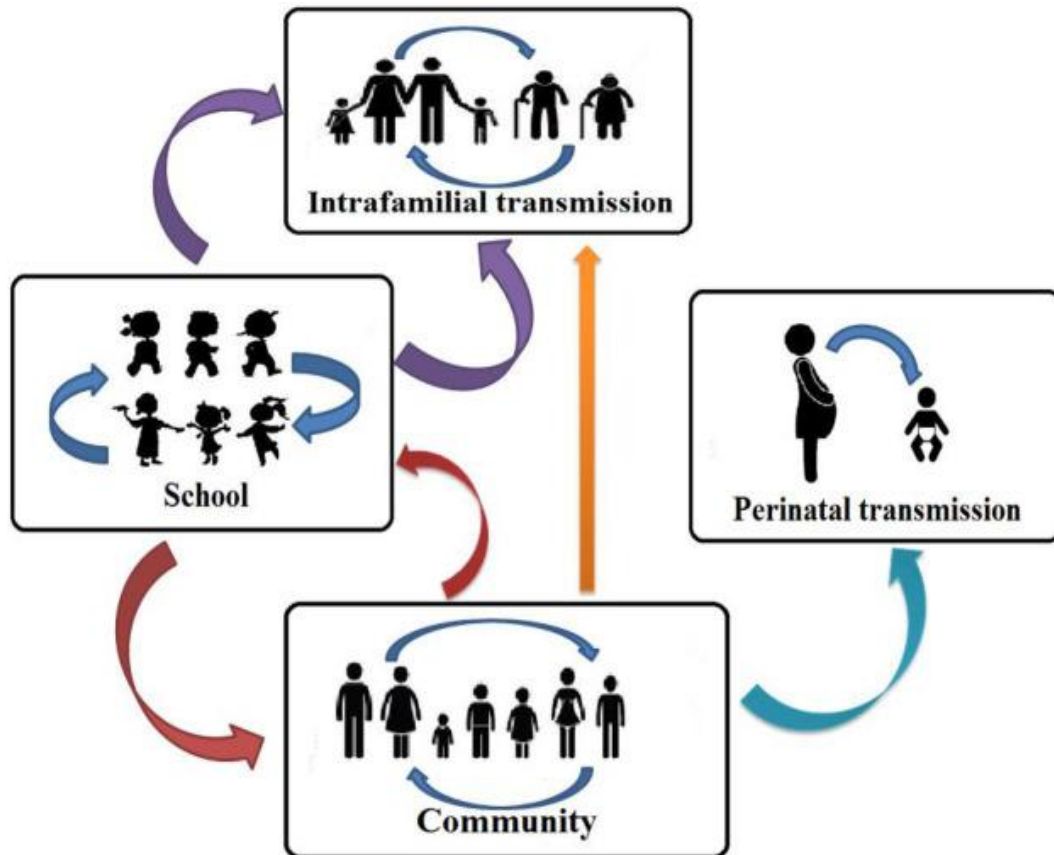


Figure 1: Transmission dynamics of SARS-CoV-2 infection in People [12]

IMPACT ON ECONOMY

“The truth is that each and every one is tired and dedicate himself to cultivating habits. Our natives work hard, but merely with the target of getting rich. Their main interest is trade and commerce, and their leading aim in life is, as they call it, 'doing business.'”

i. EUROPE

The euro region becomes encountering dreadful financial increase even before the astonishment of the pandemic, with an augmentation of simply 0.1% for the extreme three months of 2019. The fiscal productivity of the 19 nations of the euro region declined through 3.8 % for the first 3 months of 2020, within the counters of the transmission of corona virus at some phase in Europe. Analysts now say it is affirmative that the whole euro region will enjoy the greatest stagnation on the grounds that its formation within the late 1990s. Even though countries have assigned facts chief for the primary sector of 2020, analysts envisage a fair extra stagflation for the second and 0.33 quarters of the year. Individuals of the euro zone

nations that published appropriate information, France marked that when a stagflation of 0.1 % for the last realm of 2019, its financial system declined via 5.8 % for the first 3 months of 2020, the most important stagflation since the USA start off recording statistics internal the late 1940s. Italy has in addition experienced stagflation for the first half of the year, with the economy contracting to 4.7% after falling 0.3 % at the end of 2019.



Figure 2: Impact of Covid-19 on growth rate globally.

The results of corona virus epidemic on an already existing weak economic system had been ample to squeeze it. Spain, one of the countries smash hardest by way of the pandemic, said a 5.2 % drop within the first region the year, while GDP in Belgium and Austria fell 3.9 % and 2.5 % respectively. Germany's financial system reduced via 2.2 % on the inside the first zone of 2020, as the corona virus epidemic driven the euro zone's powerful economy into stagflation; the periodically adjusted quantity of unemployed in Germany bounce by means of 373,000 to 64 million in April. [11,12]

ii. AMERICA

The country with the best prosperity and clinical minds within the world did not take note of warnings from China and then Italy; decline to well known the 'contingency of global concern' from the World Health Organization on January 31st 2020, and deficiency of a deadly disease awareness plan that could have activate the American health device to respond to the coming

viral epidemic as early as February. A collapse of national authority, aggravated through the political divisions, and a shattered nation with the assistance of province response assured the numbers more than 1.5 million cases and counting, deaths coming near 100,000. It is not possible to assume that America will emerge from this pandemic with the equal perspective on its historic monetary inequality.

More than thirty-five million humans were surprising out of work and attribute filed unemployment claims in recent weeks. The outspread of the corona virus has the social and monetary material of American groups and found out in a striking manner the inequities of the American device as an unmarried event threw greater than 35,000,000 human beings into joblessness and a step in the direction of poverty. The Covid-19 pandemic highlighted the flaws inside the machine and found out two monetary conditions that have been left unchecked poverty and financial insecurity. [11,12].

iii. Impact of Covid-19 on Indian economy

- The effect of coronavirus epidemic on India has been largely disorderly in terms of economic activity as well as a loss of human lives. Nearly all the sectors have been skeptically affected as domestic demand and transport sharply plunge with some notable exceptions where high growth was observed. An attempt is made to analyze the effect and feasible resolve for some key sectors.
- Since the backbone of the country is agriculture and the most important part of category announced by the government, the effect is likely to be minimum on both usage of agro-inputs and primary agricultural production. Most of the state governments have already allowed free transport of fruits, vegetables, milk etc. Online food grocery platforms are largely affected because of unclear restrictions on transport and cessation of logistics vehicles. Finance Minister and RBI announced resolutions will help the industry and the employees in the short term. Segregate the rural food production areas in the coming weeks will hold a big answer to the large impact of COVID-19 on Indian food sector as well as macro economy.
- The benefaction of the Tourism and Aviation Sector to our GDP stands at about 2.4% and 9.2% respectively. The Tourism sector served approximately 43 million people in FY 18-19. Aviation and Tourism were the first industries that were strike markedly by the epidemic. The common concurrence seems to be that COVID will strike these industries vigorously than 9/11 and the 2008 Financial Crisis. These two industries have been dealing with critically cash flow issues since the initiation of the epidemic and are outstaring at a prospective 38 million lay-offs, which express to 70 per cent of the total workforce. The effect is going to reduce on both, White- and Blue-collar jobs. According to IATO estimation, these industries may arouse deprivation of about 85 billion Rupees due to travel diminution. The epidemic has also initiated a wave of revolution in the fields of contactless boarding and travel technologies.

- There has been a remarkable number of changes in the sector of telecom of India even before the COVID 19 due to fleeting price wars between the service mainstay. Most required services and sectors have pursued to run during the epidemic thanks to the execution of the 'work from home' due to diminution. With above 1 billion connections as of 2019, the telecom sector accord about 6.5 per cent of GDP and employs near about 4 million people. Shoot up in broadband usage had a direct affect and consequences in pressure on the network. Demand has been inflating about by 10%. However, the Telco's are fortifying for a sharp deflation in addition of new subscribers. As a policy endorsement, the government can abet the sector by slacken the compliancy and provide prohibition for spectrum dues, which can be used for network augmentation by the companies.
- The pharmaceutical industry has been on the peak since the initiation of the Covid-19 epidemic, particularly in India, the vast producer of inclusively all drugs worldwide. With a market range of \$55 billion during the starting period of 2020, it has been exploding in India, exporting Hydroxychloroquine at worldwide level, especially to the US, UK, Canada, and the Middle-East.
- There has been a recent hike in the prices of raw materials bring in from China because of the pandemic. Inclusively all drugs are the most affected because of hefty credits on imports, shut off supply-chain, and labor work insufficiency in the industry, because of social distancing. simultaneously, the pharmaceutical industry is brawl because of the government-impose ban on the export of reproach drugs, PPE kits, and equipment to make sure sufficient quantities for the country. The increase in demand for these drugs, merge with hamper availability is making things more resistant. Attenuate the financial enforcement on the pharmaceutical companies, tax-mitigation, and inscribe the labor force deficiency could be the convert factors in such a distress time.

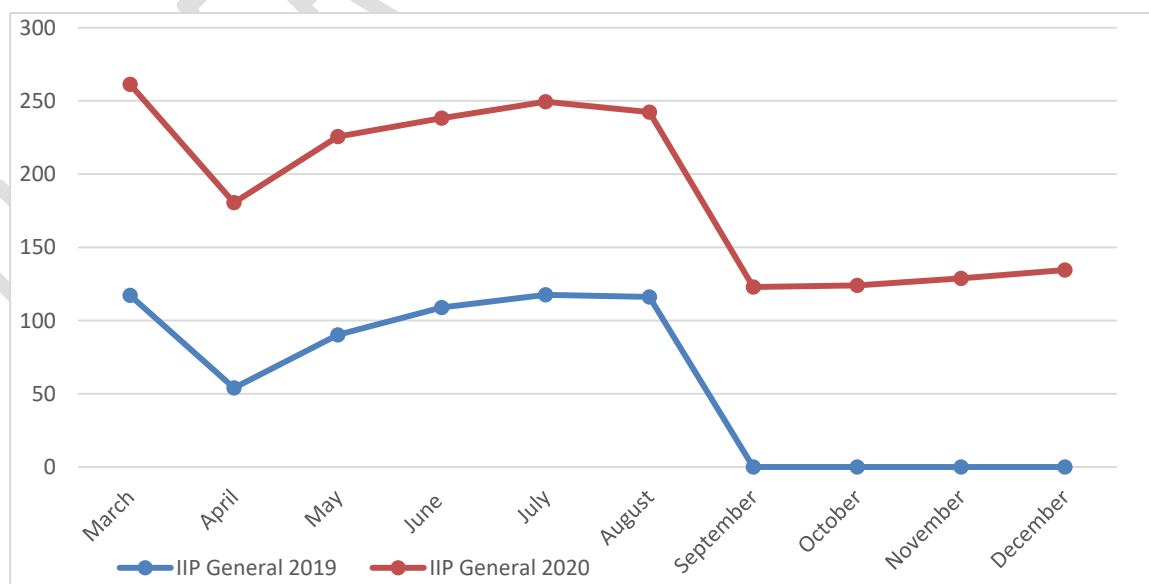


Figure 3: Index of Industrial Production, India, monthly, 2019 and 2020, base year 2011-2012 = 100[26]

- The Indian Oil & Gas industry is slightly significant in the global context – it is the third-largest energy consumer only behind USA and China and contributes to 5.2% of the global oil demand. The through going lockdown across the country flagging the demand of transport fuels (considering for 2/3rd demand in oil & gas sector) as automobile & industrial manufacturing reduces and goods & passenger movement (both masses & individual) demolish. Though the raw prices plunge in this period, the government hike the excise and special excise levy to make up for the revenue diminution, additionally, road tax was increased too. As an endorsement, the government may think of passing on the profits of reduces crude prices to end consumers at retail way out to restorative demand.
- In view of the scale of disordering caused by the epidemic, it is obvious that the current recession is fundamentally different from slowdown. The instant abatement in demand & raised unemployment is going to change the business landscape. Acquiring new principles like ‘move towards localization, cash preservation, supply chain flexibility and revolution will help businesses in stride a new path in this undetermined environment [13].

Variable	February 2020	March 2020	April 2020
Labour force (million)	440.1	433.8	369.0
Labour participation rate (%)	42.6	41.9	35.6
Employed persons (million)	406.0	395.8	282.2
Unemployed persons actively looking for employment (million)	34.2	37.9	86.8
Unemployed persons not actively looking for employment (million)	10.4	16.3	88.6
Unemployment rate (%)	7.8	8.8	23.5

Table 1. Selected indicators of labor force and employment, India, February to October 2020 (million and percentages)[26]

IMPACT ON AN ENVIRONMENT

“What’s true of all the evils in the world is true of plague as well. It helps men to rise above themselves.”

Trading environment is one of the massive and most significant challenges of the 21st century. Even though of all their attempts to re-establish the nature all through the previous couple of decades, humans could good move a few steps forward. But at some phases in the previous few months, outcome of the epidemic has proficiently reacquired the environment to a big quantity that should clearly set positive impact on global weather trade. Whatever be the motive or origin, the occurrence of COVID-19 has emphasized to enhance the mutually-affective connection between human beings and nature [12]. Like all of the preceding failures at the earth, let all be optimistic enough that, humans will actually win over the pandemic in due route of time, but they need to understand the limits to which they can thrust nature, before it's miles too late.

A huge socioeconomic improvement plan which includes quarter by using area plans and an ecosystem that encourages entrepreneurship is also wished so that the ones with strong and sustainable enterprise fashions can flourish. From the very starting of civilization, people gradually commenced manipulating the character for its personal benefit. In order to meet the call for of increasing populace industrialization and urbanization have become inevitable, and the obvious significance was proved to be detrimental on the worldwide surroundings. Further, environmental concerns consist of air pollutants, water pollution, weather alternate, ozone layer depletion, international warming, depletion of floor water level, exchange of biodiversity & ecosystem, arsenic infection and plenty of more [12,31].

Global warming is a result of the increasing concentration of greenhouse gases (CO₂, CH₄, N₂O etc). Out of the desire to pressure the nature as per their very own whims and preference, human beings started destroying the character in numerous ways. As an inevitable outcome environment pollutant has emerge as a big problem of the present day. But, due to the uncommon outbreak of COVID-19, almost every big and small cities and villages in the affected nations like China, Taiwan, Italy, USA, France, Spain, Turkey, Iran, Germany, S Korea, U.K, India, Australia and lots of more, is under partial of overall lockdown for an extended time period ranging from some weeks up to three months [14].

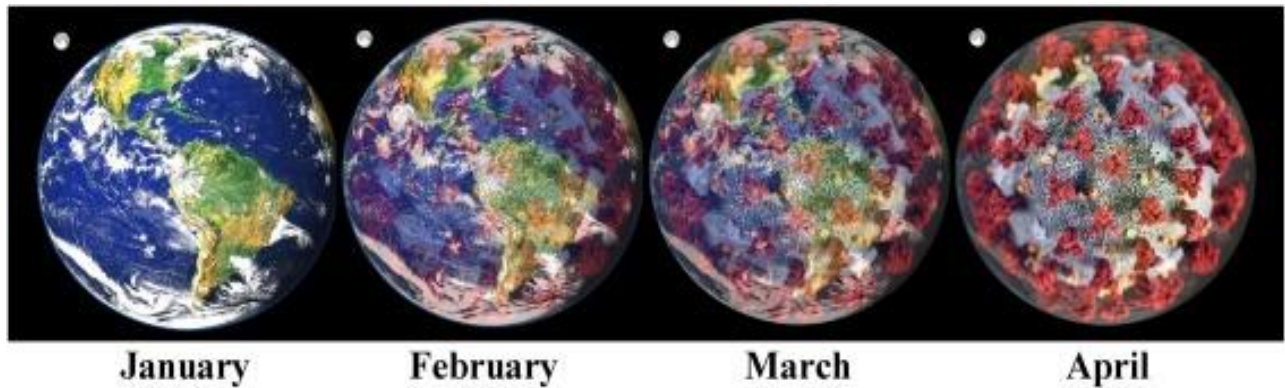


Figure 4: *Wrapped in Corona. A schematic view of the world as SARS-CoV-2 engulfs the planet.*

All nearby and central administrations worldwide have actually placed a ban on free movement of their citizens is cancelled, various sorts of industries are not in function, all varieties of travels are cancelled. Meanwhile, efforts to restrict transmission of the COVID-19, through proscribing the motion have had an extremely good environmental effect. Due to non-functioning of industries, business waste emission has reduced to a massive extent. Vehicles are hardly discovered on the roads resulting in an almost zero emission of green-residence gases and poisonous tiny suspended particles to the environment. Due to lesser call for of energy in industries, use of fossil fuels or conventional electricity sources has been diminished considerably. Ecosystems are being substantially recovered [14,15].

IMPACT ON PRIMARY SECTORS

Agriculture

A global crash in call for from lodges and restaurants has seen costs of agricultural commodities drop by 20%. Countries around the sector have imposed some of protecting measures to incorporate the exponentially increasing spread. This may have pronounced implications for perishable goods inclusive of meat and vegetables. Furthermore, markets have gone a step further via shutdown of ground buying and selling which has affected the capacity to change artefacts[32]. The Chicago Mercantile Exchange is a recent example. ‘Panic buying’ or acquisition is in addition convoluted shortages past supermarket shelves. The American Veterinary Medical Association (AVMA) have demonstrated problem over small stages of animal pharmaceuticals from several huge drug suppliers. [11,18,19].

Petroleum and Oil

Saudi, considered as the de facto leader of OPEC, scale up its provision of oil by means of 25% in contrast to February, production volume taken to an unequalled stage. This give rise the precipitous one-day price crash observable in almost 30 years. On March 23rd, Brent blend dropped by 24% from \$34 per barrel to stand at \$25.70. Although a downshift inside the range of COVID- 19 related deaths has caused oil prices stabilization in some context, there may be still plenty of ambiguity. On the background of a viral epidemic already dampening the call for oil, this oil-free conflict is forecast to have tomb implications for the global economy. In more usual times, feasible-priced oil might also have worked as a bonus for economies (24).

However, petrol savings are improbable to be redirected into more pay out as populations are instructed to instruction social distancing and the running class are undetermined approximately activity certainty, this relies on agitation among Saudi Arabia and Russia, accordingly should now not be taken into consideration imperishable for the long-term. [11,18,33]

IMPACT ON SECONDARY SECTORS

Manufacturing Industries

A survey organized on how COVID-19 is affecting production agencies within the United Kingdom (UK). Over 80% of answerer anticipated a decrease in turnover over the next 2 quarters, with 98% discharge challenge approximately the negative effect of the epidemic on enterprise operation. Issues and staffing deficiencies of importation stood out because the key concerns for businesses due to disorganization of deliver chains and self-isolation strategy. certainly, for many roles within a manufacturing company, 'running from home' isn't a possible option always. The Chemical Industry is forecast to reduced its international production via

1.2%, the defeat growth for the sector due to the 2008 monetary strike [16,18]

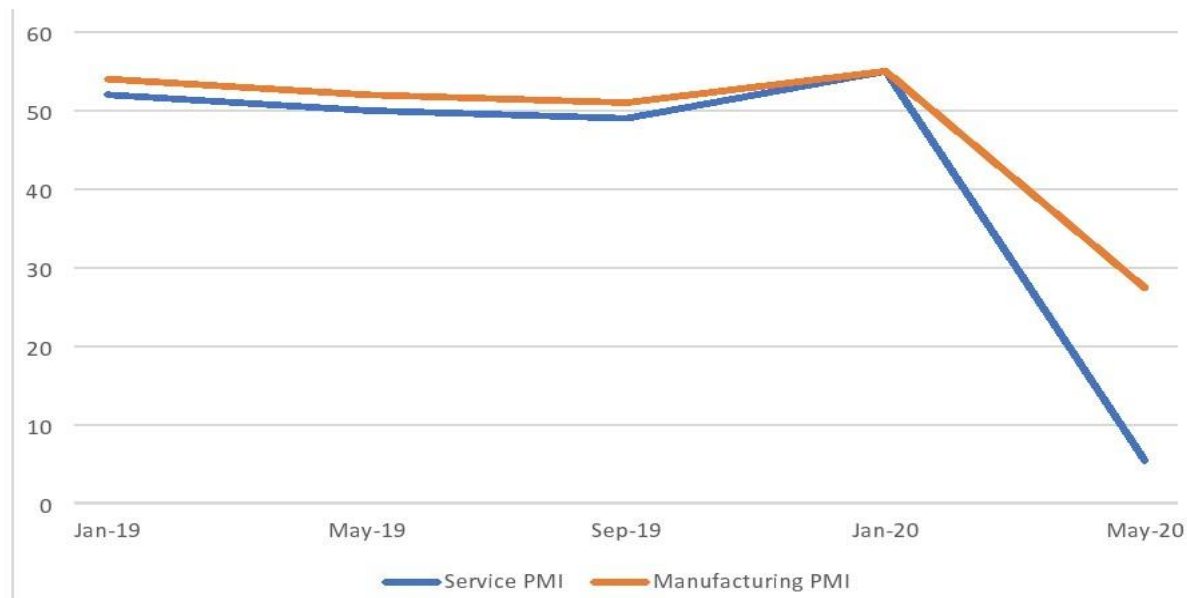


Figure 5: Impact of covid-19 on manufacturing and services globally.

IMPACT ON TERTIARY SECTORS

Education

COVID-19 has affected all fields of the education system, from pre-college to tertiary schooling. diverse policies have introduced in different international locations, for all the youngsters of workers in key industries. Additionally, a national closure of tutorial facilities has imposed over one hundred countries. Estimation of UNESCO that close to 900 million students have been affected by the closure of tutorial institutions. Although the intention of those closures is to forbid the spread of the virus within institutions and save you from the transference to susceptible individuals, these closures have had significant socio-economic imputations. Additionally, there exists a huge inequality among populations with a better income who are able of access era that can make sure education keeps virtual at some point of social isolation. [35]

In Dubai, 13,900 human beings have signed a petition to reduce charges of independent college by way of 30% as dad and mom combat to source these finances during current pay cuts extend as high as 50%, and lofty charges of living. Furthermore, dad and mom are being adjure to furnish schools with more confidential records like as bank statements and profit and loss agency statements. The consequences of long-time period faculty closure are also very badly affected

and trying to raise from the effects. Additionally, this takes a look up at the direct effect of closures on the kids of healthcare people with a forecast 6–19% of healthcare team of workers hours lost.

As well as the effect on undergraduate schooling, the most extensive impact is on the postgraduate studies network with research studies into many non-COVID related subjects being lay out on maintain. These conferences are the key to medical research in lots of disciplines, allowing proclamation of studies in computation to supplying opportunities of networking for alliance and job-seeking. Many meetings have moved online, but these ‘virtual meetings’ are frequently now not as manageable to networking and casual approach of clinical communication [17,18]

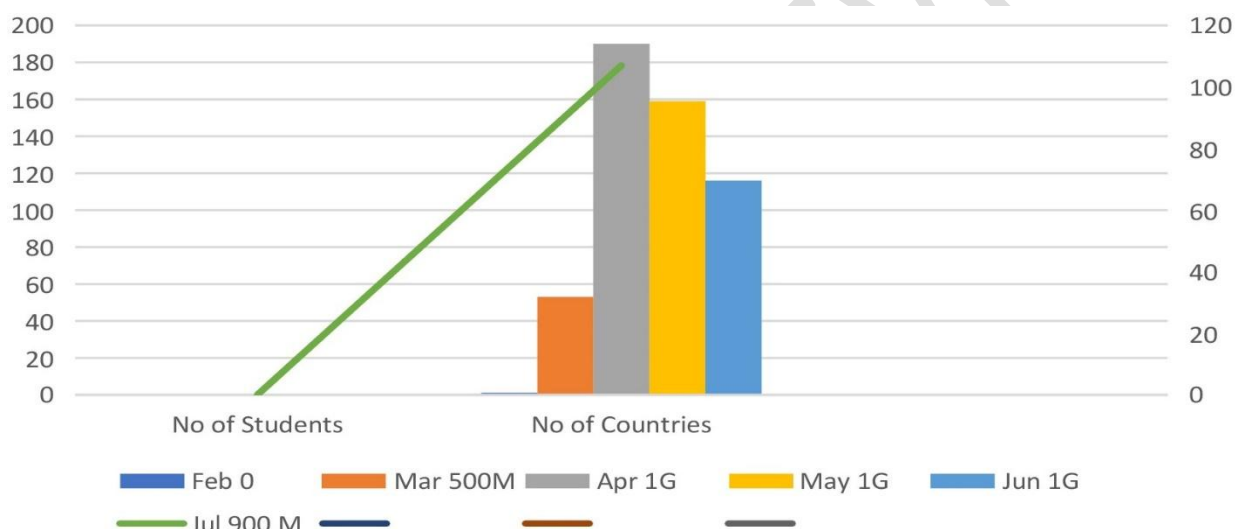


Figure 6: Impact of covid-19 on education system globally.[25]

Finance Industry

Communities, organizations and firms globally has affected by COVID-19, unwittingly affecting the financial markets and the global economy. In China, lockdown diminution notably decreased the production of goods from factories, even as self-isolation and quarantine policies diminished consumption, demand and utilization of commodities and services. In fact, Chinese companies could be in the advantageous function to collect their western counterparts that are significantly dependent and may be inevitably suffering from the stock market.[34]

In addition to the interruption in the delivery chain, and the capital marketplace region has moreover been affected. Gold fall down in opposition to the greenback through 0.65%. The

decrease in worldwide inventory markets has secure an unstable environment with necessary liquidity stages. To fight these consequences, Central banks worldwide have interceded to make certain liquidity is maintained and attenuate the economic shock, with several leaders commence on a 'Whatever its takes' approach [18].

Food Sector

The food sector, including meals retailing and distribution, has been put beneath strain as a result of that people panic-shopping for and stockpiling up meals. Panic-buying has resulted in an extension of £1billion worth of meals in UK homes. Online meals shipping has also affected by this high call for on meals products. Companies are suffering with outrageous bookings, with deliveries arriving long overdue or now not at all. Moreover, food banks have also been stricken by panic-buying and food stockpiling as donations have reduced. In response to these worries, the UK authorities have made efforts to offer certain populations with meals parcels and loose food to acquire and take home. The UK government has additionally reduced regulations on delivery hours for retailers in order to allow shops to restock with simple meals products. In addition, in spite of reassurance through the government, stores have made drastic changes with the aid of restricting the amount of each product that a character can buy, providing more than 30,000 new jobs to meet the high strain of restocking shelves, and setting special purchasing hours for the elderly, susceptible populations. Measures implemented by means of those local stores encompass unfastened transport of food merchandise to clients to keep away from panic-buying, putting regulations at the number of clients allowed in at any given time to avoid overcrowding, and expanding on the wide variety of suppliers whom they buy their merchandise from to keep away from meals shortage [18,20].

Tourism

As a direct consequence of COVID-19, The World Travel and Tourism Council has warned that 50 million jobs in the global travel and tourism sector may be at risk. These include temporary state aid for the tourism and travel sector from national governments as well as fast and easy access to short- and medium-term loans to overcome liquidity shortages, including funds made available by the European Union through the Corona Response Investment Initiative, and fiscal relief. The alliance has also called for the launch of the European Unemployment Reinsurance Scheme.

Internationally, Vietnam received approximately 1.45 million Chinese visitors in the first quarter of 2019, dropping by 644,000 in January of 2020. It is estimated that Vietnam's tourist sector will suffer a \$5billion loss should the COVID-19 pandemic extend into the second quarter of 2020. Moreover, the Philippines is projecting a 0.3–0.7% slowdown in the country's full year GDP. In the United States, restriction of all non-essential travel, US-Canada border closure, and the suspension of visa services may accelerate disruption of the American economy.

In the UK, many parks are now closing to further enforce social distancing as they have in Italy. [18,21]

IMPACT ON SOCIAL LIVES

Family Dynamics, Domestic Violence

“Thus, each of us had to be content to live only for the day, alone under the vast indifference of the sky.”

Lockdown and social distancing measures to prevent spread of COVID-19 have heightened fears of increasing levels of domestic violence, which includes physical, emotional and sexual abuse. The concentrated time spent in lockdown means that vulnerable people are more exposed to abuse and it is more difficult for them to seek help. [22]

CONCLUSION & DISCUSSION

We have reached to 2021 and the lockdown efforts in most nations are winding down. At the time of writing, the population in Italy has moved forward with re-commencing the economy; restaurants, stores and companies are energetic as soon as again, although the tourists have not begun to return. Germany, Spain and France are shifting ahead with the re-opening their nations after reducing the quantity of cases and deaths through strict lockdown enforcement. The United States pushes beforehand with re-opening business, travel, seashores and bars, no matter the continued upward push in cases and deaths. And new regions of problem are emerging, Brazil and Russia report huge each day increases in the range of cases and are now becoming the brand-new epicenters, with the second one and third maximum charges of infection in the world. Singapore and China are carefully evaluated spikes in new instances the use of testing, contact tracing and isolation to saved the maximum population from the ‘third wave’ of corona virus

cases. Research and vaccine improvement are shifting at ‘warp speed’ inside the hopes of finding a treatment in order to repair world to a brand new normal [23].

HIGHLIGHTS

- Covid-19 disease originated in December 2019, Wuhan, Hubei Province, China.
- WHO has declared the COVID-19 pandemic as a worldwide fitness emergency?
- It affected environment and worldwide economy.
- Central banks globally commit to a ‘Whatever its takes’ approach in a try to save the global economy condition.

REFERENCES

1. Afelt A, Frutos R, Devaux C. Bats, coronaviruses, and deforestation: toward the emergence of novel infectious diseases? *Front. Microbiol.* 2018; 9:702.
2. Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med.* 2020.
3. Backer JA, Klinkenberg D, Wallinga J. Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travelers from Wuhan, China, 20–28 January 2020. *Euro Surveill.* 2020; 25:1–6.
4. Cheng ZJ, Shan J. 2019 novel coronavirus: where we are and what we know. *Infection.* 2020:1–9.
5. Zou L, Ruan F, Huang M, et al. SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *N Engl J Med.* 2020.
6. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, Fan G, Xu J, Gu X, Cheng Z, Yu T, Xia J, Wei Y, Wu W, Xie X, Yin W, Li H, Liu M, Xiao Y, Gao H, Guo L, Xie J, Wang G, Jiang R, Gao Z, Jin Q, Wang J, Cao B. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020; 395:497–506.

7. World Health Organization. Situation reports. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>. Accessed 22 Feb 2020.
8. Coronavirus Outbreak. Available at: <https://www.worldometers.info/coronavirus/>. Accessed 23 Feb 2020.
9. Yoo JH. The fight against the 2019-nCoV outbreak: an arduous march has just begun. *J. Korean Med. Sci.* 2020;35–56.
10. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents. *J Hosp Infect.* 2020;30046–3.
11. Wang D, Yin Y, Hu C, Liu X, Zhang X, Zhou S, et al. Clinical course and outcome of 107 patients infected with the novel coronavirus, SARS-CoV-2, discharged from two hospitals in Wuhan, China. *Crit.* 2020;188: 2895-6.
12. Chakraborty I, Maity P. COVID-19 outbreak: Migration, effects on society, global environment and prevention. *Sci Total Environ.* 2020; 728.
13. Impact of Covid-19 on Indian economy. <https://timesofindia.indiatimes.com/readersblog/midweekread/impact-of-covid-19-on-indian-economy-26770/>
14. COVID-19: TCTMD's Daily News. 2021. <https://www.tctmd.com/news/COVID19-daily-dispatch>.
15. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A. World Health Organization declares global emergency: a review of the 2019 novel coronavirus (COVID-19) *Int. J. Surg.* 2020;76:71–76.
16. US CFOs look to rebuild revenue amid worries of a second wave of COVID-19 infections. 2020. <https://www.pwc.com/us/en/library/covid-19/pwc-covid-19-cfo-pulse-survey.html>.
17. Resilient leadership responding to COVID-19 deloitte insights. <https://www2.deloitte.com/global/en/insights/economy/covid-19/heart-of-resilient-leadership-responding-to-covid-19.html> [Internet].

- 18.** Buck T, Arnold M, Chazan G, Cookson C. Coronavirus declared a pandemic as fears of economic crisis mount. 2020. <https://www.ft.com/content/d72f1e54-6396-11ea-b3f3-fe4680ea68b5> .
- 19.** Prices of agricultural commodities drop 20% post COVID-19 outbreak - rediff Realtime News. https://realtime.rediff.com/news/india/Prices-of-agricultural-commodities-drop-20-post-COVID19-outbreak/955078599584b749?src=interim_alsoreadimage [Internet].
- 20.** Henrik S, Cécile TK, Noémie L, Noémie C, Paolo B, Juliette P. Estimating the burden of SARS-CoV-2 in France, 2020;369:208-211.
- 21.** Flatten H, Van Heerden V, Jung C, *et al.* The good, the bad and the ugly: pandemic priority decisions and triage *Journal of Medical Ethics* Published Online First: 2020.

Betti F, Heinzman T. World Economic Forum. From Perfume to Hand Sanitiser, TVs to Face Masks: How Companies Are Changing Track to Fight COVID-19 <https://www.weforum.org/agenda/2020/03/from-perfume-to-hand-sanitiser-tvs-to-face-masks-how-companies-are-changing-track-to-fight-covid-19>
- 22.** Walker P, *et al.* Report 12: the Global Impact of COVID-19 and Strategies for Mitigation and Suppression (2020), [10.25561/77735](https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/sanidad14/Documents/2020/130520_ENE-COVID_Informe1.pdf) Google Scholar [Online] https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/sanidad14/Documents/2020/130520_ENE-COVID_Informe1.pdf. Study from Carlos III Institute of Health and the National Statistics Institute, Spain, regarding the first round of antibody testing which showed only 5% of the population tested had been infected with SARS-CoV-2.
- 23.** Oil prices, stocks plunge after Saudi Arabia stuns world with massive discounts. <https://www.npr.org/2020/03/08/813439501/saudi-arabia-stuns-world-with-massive-discount-in-oil-sold-to-asia-europe-and-u->.
- 24.** UNESCO Education: from disruption to recovery [WWW Document] <https://en.unesco.org/covid19/educationresponse2020>.
- 25.** Source: Ministry of Statistics and Programme Implementation, Government of India. Available at: <http://www.mospi.gov.in/>.
- 26.** Chatterjee S, Sarkar A, Chatterjee S, Karmakar M, Paul R. Studying the progress of COVID-19 outbreak in India using SIRD model. *Indian Journal of Physics*. 2021;95:1941-57.
- 27.** Wilson J. *The Triumph of Improvisation*. Cornell University Press; 2014.

- 28.** Aktar MA, Alam MM, Al-Amin AQ. Global economic crisis, energy use, CO₂ emissions, and policy roadmap amid COVID-19. *Sustainable Production and Consumption*. 2021; 26:770-81.
- 29.** Higginbotham EJ, Dahlberg ML, editors. The impact of COVID-19 on the careers of women in academic sciences, engineering, and medicine. National Academies Press; 2021.
- 30.** Shang Y, Pan C, Yang X, Zhong M, Shang X, Wu Z, Yu Z, Zhang W, Zhong Q, Zheng X, Sang L. Management of critically ill patients with COVID-19 in ICU: statement from front-line intensive care experts in Wuhan, China. *Annals of intensive care*. 2020; 10:1-24.
- 31.** Madronich S, Shao M, Wilson SR, Solomon KR, Longstreth JD, Tang XY. Changes in air quality and tropospheric composition due to depletion of stratospheric ozone and interactions with changing climate: implications for human and environmental health. *Photochemical & Photobiological Sciences*. 2015; 14:149-69.
- 32.** Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, Agha M, Agha R. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International journal of surgery*. 2020; 78:185-93.
- 33.** Yousaf M, Adkin M. The bear trap: Afghanistan's untold story. Lahore: Jang Publishers; 1992.
- 34.** Boyacı-Gündüz CP, Ibrahim SA, Wei OC, Galanakis CM. Transformation of the food sector: Security and resilience during the COVID-19 pandemic. *Foods*. 2021; 10:497.
- 35.** Chen T, Rong J, Peng L, Yang J, Cong G, Fang J. Analysis of social effects on employment promotion policies for college graduates based on data mining for online use review in China during the COVID-19 pandemic. *InHealthcare* 2021; 9: 846.