

**Project Dissertation Report on**  
**Increase in the number of Medi-Claim due to**  
**Covid-19 and its impacts.**

**Submitted By**

**Abhay Tripathi**

**Roll No: 2K20/DMBA/06**

**Under the Guidance of**

**Dr. Saurabh Agarwal**

**Assistant Professor**



**DELHI SCHOOL OF MANAGEMENT**

**Delhi Technological University**

**Bawana Road Delhi 110042**

# CERTIFICATE

This is to certify that the work titled **“Increase in the number of Medi -Claim due to Covid-19 and its impacts”** as part of the final year Major Research Project submitted by Abhay Tripathi in the 4th Semester of MBA, Delhi School of Management, Delhi Technological University during January-May 2022 is his original work and has not been submitted anywhere else for the award of any credits/ degree whatsoever.

The project is submitted to the Delhi School of Management, Delhi Technological University in partial fulfillment of the requirement for the award of the degree of Master of Business Administration.

---

**Dr. Saurabh Agarwal**

Faculty Advisor

---

**Prof. Archana Singh**

Head of Department (DSM, DTU)

# DECLARATION

I hereby declare that the work titled “**Increase in the number of Medi -Claim due to Covid-19 and its impacts**” as part of the final year Major Research Project submitted by me in the 4th Semester of MBA, Delhi School of Management, Delhi Technological University, during January-May 2022 under the esteemed guidance of Assistant Professor Dr. Saurabh Agarwal, is my original work and has not been submitted anywhere else.

The report was written entirely by me and is not based on any other source. Everything in the report that is not my own work has been properly referred to, cited, and acknowledged.

**Abhay Tripathi**

(Roll No: 2K20/DMBA/06)

# **ACKNOWLEDGMENT**

It is my great pleasure to acknowledge the kind of support and guidance I received during the research work. I would like to thank my faculty advisor Assistant Prof. Dr. Saurabh Agarwal, who helped me to take up the topic '**Increase in the number of Medi -Claim due to Covid-19 and its impacts**' and guided me to complete this project properly.

I owe a huge debt of gratitude to the Delhi School of Management at Delhi Technological University for allowing me to work on this project. Finally, I'd want to thank all of the distinguished faculty members and Ph.D. Scholars for contributing their knowledge and expertise to this initiative. I have put forth all of my efforts to guarantee that the project is completed in the most efficient and error-free manner feasible.

**Abhay Tripathi**

(Roll No: 2K20/DMBA/06)

## **EXECUTIVE SUMMARY**

The COVID-19 crisis continues to have an influence on individuals, society, business, and the global economy. The insurance business has not been spared; insurers have reacted fast to the crisis. Insurers will confront a variety of hurdles while the broader economy recovers and responds to the epidemic, but they will also find numerous new opportunities in the medium to long term.

The impact on health insurers will vary due to the broad variety of health systems around the world. In Ireland, for example, the government has ordered those private medical resources be shifted to help with the COVID-19 outbreak, while private health practitioners in other nations have offered to help. The Pradhan Mantri Garib Kalyan Yojana / Program in India is an Rs 1.70 lakh crore-assistance package for India's poor people to help them battle the Corona Virus. This initiative was launched in March 2020 with the purpose of providing food and money to the lowest of the poor so that they do not have difficulty obtaining basic supplies and meeting their basic needs.

In addition, the health insurance sector has been completely digitalized for the purchase and renewal of health insurance plans on the insurer's official website. The sale of health insurance policies has risen considerably in recent years as consumers have realised the need of having financial backup in the event of a medical emergency. Even in times of economic hardship for businesses, the health insurance industry has persevered and grown to meet the needs of clients and global trends.

In this project, I have tried to assess the impact of Covid-19 on the insurance sector/Industry in India and how all companies are performing in the market. I also tried to find out what all factors are affecting the insurance claims and how the companies can do the prediction and become more profitable in the future.

# TABLE OF CONTENTS

i.	Title page.....	i
ii.	Certificate.....	ii
iii.	Declaration.....	iii
iv.	Acknowledgement.....	iv
v.	Executive Summary .....	v
1.	Introduction	
1.1.	Background.....	7
1.2.	Objectives of the Study.....	9
2.	Literature Review.....	10
3.	Research Methodology.....	28
4.	Data analysis and Findings.....	30
5.	Conclusion	
5.1.	Conclusion .....	37
5.2.	References.....	38

# **1| INTRODUCTION**

## **1.1 Background**

The coronavirus pandemic has adversely affected people's lives and economies worldwide. As a result, concerns regarding the viability of insurance companies have arisen. "The insurance industry must deal with difficult market conditions while also protecting employees and policyholders," stated EIOPA's chairman. In addition, the pandemic may have had a considerable impact on insurance companies' operations, putting them in the difficult situation of balancing a massive amount of claims with their financial and capital stability. The insurance companies are now more exposed to risk due to the CV-19 pandemic.

According to previous stress tests (Moody's Analytics 2020), market dynamics points "double-hit" scenario that might have a major impact on insurers' assets and liabilities. This project investigates the how the CV-19 pandemic has influenced the insurance companies. The return on assets is the dependent variable (ROA). The data demonstrate indisputably that the CV-19 outbreak has harmed the European insurance industry.

The insurance industry suffered greatly due to the nationwide lockout. Insurance companies are critical to the financial system's stability since they are big investors in financial markets, while insurers protect consumers and businesses' financial stability by insuring their risks. As a result, it is very crucial to consider how the CV-19 pandemic has influenced the insurance industry in India.

The pandemic, on the other hand, has contributed to increased awareness of the significance of medical insurance, with year-over-year growth of 28% and 18% in 2021 and the first half of 2022, respectively.

In the seven months ending October 2021, insurance companies reported a 29.81 per cent growth in income through premiums from the health segment, reaching Rs 42,571 crore, up from Rs 32,796 crore the previous year. According to the insurance regulator IRDAI,

health premium income increased by a record level 34 percent to Rs 5,463 crore in October'21 alone.

Non-life insurance has paid out nearly Rs 23k crore in CV-19 related health insurance claims since the pandemic. Before offering new coverage, insurers have raised the cost of health insurance and begun requiring immunization certificates and rigorous medical screenings.

On April 20, the rate of increase in health insurance slowed to 5.7 per cent (after the Covid-induced national shutdown). While demand was high, growth was limited due to distribution issues imposed by insurer lockup and a lack of readiness to transact business on such a considerable scale online.

During the CV-19 second wave, the number of medical claims increased. CV-19 related claims increased by 44% from April to August 2021, despite claim severity falling by 24% to Rs 112,366 during the same period. "Hospital preparedness, established treatment costs, the discovery of the therapeutic line, and vaccination deployment were the key reasons for the drop in severity," said research analyst at Motilal Oswal.



## **1.2 Objective of the study**

The purpose of this study is to see if the CV-19 epidemic has had a negative influence on the insurance industry. Also, to find out what are factors that are affecting the insurance claims and their relation with insurance claim.

There is a scarcity of academic research on the effects and the influence of the CV-19 pandemic on the insurance industry. CV-19 has had a negative influence on the insurance market in Ghana, according to Babuna et al. (2020), with insurance companies reporting lower financial outcomes.

CV-19, according to Shevchuk et al. (2020), could be a catalyst for insurance innovation, as the Ukrainian insurance market has seen significant changes in customer relationships. Researchers have requested publications on the CV-19 pandemic's influence on the insurance business, which is especially important because the pandemic has had significant economic consequences.

It contributes to the growing body of evidence about the CV-19 epidemic's economic impact, which has grabbed the interest of financial economists. Several publications have looked into the implications of CV-19 on financial markets or CV-19 on insurance company stock returns. This is one of the first study that we are aware of that looks into the influence and effects of the CV-19 outbreak on the insurance claims.

Health and life insurance rates are projected to rise as a result of the launch of a new CV-19 version in numerous countries, with various service providers throughout the market evaluating price increases. According to a report by Motilal Oswal, health insurance rates will continue to grow as Indians seek to secure themselves and their families financially in case medical treatment is required during the CV-19 third wave.

Health insurance is extensively underutilized in India. Retail health insurance is only available to roughly 4% of the population.

## **2| LITERATURE REVIEW**

### **The CV-19 pandemic**

In December'19, a pneumonia outbreak of not known origin was found in China. Pneumonia like cases were connected to the Huanan Seafood Wholesale Market, according to epidemiological research. Severe acute respiratory syndrome coronavirus 2 was identified after virus genome-analysis revealed it to be a novel corona virus linked to SARS-CoV. As it spreads around the world, it caused thousands of deaths, the World Health Organization declared a pandemic on March 12, 2020. (CV-19). As a result of the pandemic, the whole globe has paid the price in terms of lives lost, economic effects, and increase in poverty.

SARS-CoV-2, like other viruses, spreads mainly through the respiratory tract with excellent efficiency and infectivity. Droplet transmission and physical contact is the most well-known method, while aerosols could also play a role. The reproduction number (R0) of SARS-CoV-2 has been calculated to be in between 1.4 and 2.5.

SARS-CoV, the virus could also spread by the oral-fecal route and patient urine has been screened for SARS-CoV-2 virus in various studies.

### **General safety recommendations**

Since the CV-19 outbreak, face masks have become practically very common. Fear of getting infected has led everyone to put on a face mask, even double face masks sometimes, which leads to a shortage of medical equipment. Face masks are governed differently in different countries. According to the WHO, healthy people can avoid wearing facemasks unless they care for someone who has a CV-19 infection or respiratory symptoms. On the other hand, having a face mask is always recommended to prevent and reduce the sickness transmission from asymptomatic patients.

To avoid potential transmission during the asymptomatic phase, those under quarantine or taking precautions should wear a mask if they leave their place to go out for any urgent

need. The older people and people with heart and respiratory diseases are the most vulnerable people, and they should also wear masks.

According to a recent study, wearing a facemask dramatically prevents the spreading of respiratory viruses such as influenza and coronavirus. Based on these latest discoveries and in an attempt to limit the spread of SARS-CoV-2 in the so-called second phase of the pandemic, many EU countries have made wearing face masks in public mandatory..

Particle size, exhaled air speed (which is increased by breathing, speaking, coughing, and sneezing), temperature, and humidity all have an impact on SARS-CoV-2 air propagation. Individuals should wash their hands and avoid touching their nose, eyes, and mouth. These are the guidelines from World Health Organization, the European Center for Disease Prevention and Control and the Centers for Disease Control and Prevention.

### **Respiratory samples**

Because respiratory samples may contain SARS-CoV-2, they must be treated at containment level 2 in a microbiological safety cabinet, which involves molecular testing before inactivation and dilution of respiratory samples, and fast antigen testing of respiratory specimens. At containment level 3, SARS-CoV-2 propagation or culture for diagnostic or research reasons is required.

### **Surfaces disinfection**

SARS-CoV-2 can live for hours to days on surfaces. As a result, surfaces may be a disease transmission source. Disinfectants and detergents should be used to kill SARS-COV-2 to lessen the danger. Alcohols, peroxide etc and inorganic compounds are viruses have contaminated examples of disinfectants that can be used for surface cleaning that).

Finally, AI may be able to assist in the management of such an emergency. Physicians may be able to make better decisions and manage their patients if clinical data is processed more quickly. To stop the infection from spreading, block chain and AI are already being used to trace the infected contacts and potential carrier. In the not-too-distant future, this technology will surely become an integral part of global health-care systems.

However, as the number of CV-19 cases has risen in recent months, this perspective is being questioned.

## **COVID-19 IMPACT**

Let us look at how the COVID 19 pandemic lockdown has affected India's social, economic, health, and National Health Programs.

### The economic impact

In 2019 and 2020, the RBI estimates and forecasts a 6.2 percent increase in real GDP. The IMF, on the other hand, lowered India's growth forecast for 2019-20 to 4.8 percent, noting that the country's economy has slowed significantly. Due to this, it is quite obvious that the pandemic's containment would wreak havoc on an economy that had already struggled in the previous fiscal year. The countrywide lockout will cost almost \$4.5 billion (about 35k crores) per day, according to market estimates from the Small and Medium Enterprises.

Due to cutbacks in out-patient attendance, elective surgeries, and international patients, the healthcare sector, which is the country's fourth-largest employer, is currently suffering 90 percent losses. The private sector provides nearly 75% of out-patient care and roughly 60% of in-patient care; it provides nearly 80% of out-patient care and about 60% of in-patient care.

During the present epidemic, the economic crisis has considerably impacted persons from lower socio-economic backgrounds (SES). During the first lockdown, the heartbreaking images of migrant workers walking from cities to their homes on foot have been hotly contested. As many migrant Indian workers do, remitting money back to India is another approach to alleviate poverty, promote economic development, and boost GDP.

According to the World Economic Forum, migrants caught abroad attempting to make ends meet will degrade their status by taking low-pay employment, working in harmful working environment, reducing their spending, buying and risk exposure to illnesses like the CV-19.

Internal migrant labourers in India (both intra-state and inter-state) are in a similar predicament. The informal sector employs 139 million people, or roughly 93 percent of

the total employment. Approximately half of migrant workers stated that sometimes they haven't received food for one time a day when interviewed. Furthermore, according to the Stranded Workers Action Network, their employers did not pay 89 percent of stranded workers during the first lockdown.

The economic impact of the CV-19 pandemic is expected to be particularly severe for India in the following areas: Increased poverty, i.e. more people living in poverty; worsening socio-economic inequalities, affecting health and nutrition indices; and failure to take precautions (e.g., wearing masks, seeking medical assistance in the case of a cough, cold or fever). They would all have substantial long-term health implications.

### Socio-cultural challenges

The emotional and economic interconnectedness of India's families, relatives, and acquaintances is vital to the country's social fabric. Physical contact and interactions, such as residing in crowded, congested places, pushing and touching, are prevalent and discourage the social distancing and no physical interaction, which is the need of the hour.

Despite the strict regulations and lockdown, there has been constant crowding at institutions, during travel, for example, on buses and trains full of migrants, and even when buying alcohol and liquor from the stores.

The most alarming aspect is the lack of proper safety nets (e.g., food safety) for those most affected by lockdown. Given the magnitude of the problem, the government's measures are tragically inadequate.

### Impact on health, National-Programs and prevalent diseases

CV-19 related death and morbidity in India are primarily owing to comorbid disorders, including non-communicable diseases such as diabetes, cardiovascular, and hypertension disease.

CV-19 has caused disruption India's health and healthcare systems in many ways.

There is a study conducted by Ghoshal et al to understand the effect of lockdown on diseases like diabetes etc. The study explain the negative relation between these two factors. In addition, an already overburdened public healthcare system will be taxed even more by the rise in diabetes-related complications.

Obesity and weight gain may exacerbate CV-19 and increase the chance of developing diabetes and cardiovascular disease. Other diseases, some of which had exhibited a promising trend in their control until recently, could also be on the rise.

Infections with the Human Immunodeficiency Virus (HIV), tuberculosis (TB), and malaria-related deaths could increase by 10%, 20%, and 36%, respectively, over the next five years, compared to a scenario without the CV-19 pandemic. There are different causes for this, including the discontinuation of antiretroviral therapy (ART), delays in diagnosing and treating tuberculosis (TB), and reduced preventative initiatives, including the cancellation of malaria net campaigns. The economic recession, as previously mentioned, could exacerbate malnutrition.

Low-income people may find it challenging to purchase even essential food and household items if they lose their job or are not able to work due to lockdown. Inadvertently, this would hurt the most vulnerable population, particularly children and pregnant women, reversing past gains made through maternal and child health and nutrition-related National Programs.

Roberton et al. predicted that coverage of critical prenatal care, delivery care and early childhood vaccination and healthcare system and interventions would decline in low- and middle-income countries.

Mental health is another critical impending health problem. The lockdown has increased anxiety, acute and chronic stress, mental depression, alcoholism, self-harm and suicide, and increased domestic and physical abuse.

In India, a reversal in the effectiveness of the National Program and a declining of health indices are real prospects.

## **INSURANCE SECTOR IN INDIA**

India's share in the global insurance market was 1.69 per cent in 2019. (1.58 per cent in 2018). Overall insurance premiums in India, including life and non-life, increased by 9.21% and 6.9% inflation-adjusted actual growth, respectively, in 2019. On the other hand, global total insurance premiums climbed by 2.34 per cent, with inflation-adjusted real growth of 2.9 per cent.

Premiums for life insurance accounted for 46.34 per cent of total premiums in 2019, while premiums for non-life insurance contributed for 53.66 per cent. However, India's proportion of the life insurance market was considerable, at 74.94 per cent, compared to 25.06 per cent in the non-life insurance market.

India is ranked 10th out of 88 countries for which Swiss Re publishes data in the life insurance business. In 2019, India holds 2.73 per cent of the global life insurance market. Even though worldwide life insurance premiums increased by 1.18 percent in 2019, India's premiums increased by 9.63 percent, with inflation-adjusted growth of 7.30 percent. The non-life insurance sector in India rose by 7.98% in 2019. During the same time period, the global non-life premium climbed by 3.35 percent. On the other hand, India's non-life insurance premiums contributed 0.79 percent to global non-life insurance premiums, and the country was ranked 15th in global non-life insurance markets.

Premium volume by region around the world, as well as total real premium increase for the year 2019, are shown in the tables.



**Table 1, Premium Volume by Region in the World in 2019 (in USD Billions)**

<b>Region</b>	<b>Life</b>	<b>Non-Life</b>	<b>Total</b>
Advanced Markets	2298.70 (44.80%)	2832.22 (55.20%)	5130.92 (100%)
Emerging Markets	617.57 (53.16%)	544.11 (46.84%)	1161.68 (100%)
Asia-Pacific	1114.49 (63.84%)	631.22 (36.16%)	1745.40 (100%)
India	79.67 (74.94%)	26.64 (25.06%)	106.31 (100%)
<b>World</b>	<b>2916.27 (46.34%)</b>	<b>3376.33 (53.66%)</b>	<b>6292.60 (100%)</b>

Source: Swiss Re, Sigma 4/2020

**Table 2: Total Real Premium Growth by Region in the world in 2019**

<b>Region</b>	<b>Life</b>	<b>Non-Life</b>	<b>Total</b>
Advanced Markets	1.3%	2.7%	2.1%
Emerging Markets	5.6%	7.7%	6.6%
Asia-Pacific	2.6%	7.6%	4.4%
India	7.3%	5.7%	6.9%
<b>World</b>	<b>2.2%</b>	<b>3.5%</b>	<b>2.9%</b>

Source: Swiss Re, Sigma 4/2020

## **INCREASING PENETRATION AND DENSITY OF INSURANCE OVER THE YEARS**

The metric of insurance penetration and density reflects the level of development of a country's insurance business. The ratio of premium to population is used to calculate insurance density, whereas the percentage of insurance premium to GDP is used to calculate insurance penetration (per capita premium).

Insurance penetration increased from 2.71 per cent in 2001 to 5.20 per cent in 2009 during the first decade of deregulation in the insurance business. Since then, penetration has dropping, reaching 3.30 percent in 2014. However, starting in 2015, insurance penetration began to rise again, reaching 3.76 percent in 2019. From USD 11.5 in 2001 to USD 64.4 in 2010, the degree of insurance density has been steadily increasing. Since then, the density has been decreasing till 2016. However, it began to rise in 2017, and the insurance density in 2019 was USD 78.

The insurance density of the life insurance industry increased from USD 9.1 in 2001 to USD 55.7 in 2010. Since then, it has been on a downward trend until 2013, when it began to steadily increase in 2016. The level of life insurance density in the year 2019 was USD 58. From 2.15 percent in 2001 to 4.60 percent in 2009, life insurance penetration had increased. Since then, it has been on a downward trend until the year 2014. Then, from 2015 to 2017, it began to rise. After a little drop to 2.74 percent in 2018, it increased to 2.82 percent in 2019.

## **KEY FACTORS THAT AFFECT HOW MUCH HEALTH INSURANCE PREMIUM**

Is the new variation covered by existing health insurance policies? Infectious disease hospitalisation charges are covered by existing health indemnity coverage. As a result, health insurance policies cover CV-19, regardless of variation. There are many different health insurance policies to choose from if you want to purchase one. The coverage they

provide and the premium amounts that must be paid can be perplexing at times. Health insurance premiums differ from one insurer to the next and from one consumer to the next. Age, income, gender, and disease history in the family are all factors that influence the cost of health insurance.

Here are some of the major elements that influence the amount of health insurance premium you must pay in India:

### Age

It should come as no surprise that the amount of premium you pay is directly proportional to your age. If you are younger, you will be obliged to pay a lower premium. Young folks have fewer health problems than older people have and are less likely to require medical assistance and coverage. As a result, it is advised that you obtain enough health insurance policies when you are younger.

### Medical History

You are more likely to need medical help in the future, if you have a family history of deadly diseases like cancer, heart disease, or high blood pressure. As a result, people with a medical family history of such diseases may need additional coverage, such as a cancer insurance plan, and may have to pay higher rates to get the care they need.

### Body Mass Index (BMI)

Insurance premiums are higher for people with a higher BMI than for those with a normal BMI. Because persons with a high BMI are more likely to suffer heart, joint, and other ailments, as well as diabetes and other problems, they are more likely to seek medical treatment on a regular basis.

### Smoker/Non-Smoker

Due to the much higher health risks for smokers, you will be obliged to pay a higher premium for your medical insurance if you are a frequent smoker. To diversify the higher risks involved with ensuring a smoker, insurers around the world charge a higher

premium. Lung cancer, stroke, heart disease, asthma, respiratory problems, chronic obstructive pulmonary disease (COPD), and hypertension are all more common in regular smokers.

### Pre-existing health conditions

People with pre-existing medical conditions are more likely to pay higher health insurance premiums since they will require more coverage than others. Because it will cover you for a pre-existing ailment, this will be specific to your plan.

### Geographical location

Where you live may also have an impact on the premium rate you will be required to pay. A higher premium rate is required in some zip codes, but not in others.

### Profession/occupation

Because your work has a significant impact on your health, it also has a significant impact on the amount of health insurance premium you must pay. If you have a high-stress job or work in a dangerous workplace, you are more likely to develop serious medical problems, and you may be charged a higher premium as a result.

As a result, staying informed about one's own and family's health is critical. Knowing your health conditions will aid you in selecting appropriate plans and riders. This will ensure that your rates are not overcharged or undercharged.

### **Is your current health insurance policy covering Coronavirus?**

Coronavirus illness, also known as CV-19, is a relatively new disease, however it is covered by all existing health insurance coverage. This means that if you buy a health insurance coverage before you test positive for the coronavirus, any medical expenses incurred for its treatment will be reimbursed (as long as you don't get diagnosed during the waiting period).

You can get coverage for coronavirus through your current health insurance policy, regardless of the variations (omicron or delta). Because the coronavirus is not a pre-existing condition, it will be covered as part of a health insurance plan's basic hospitalisation fees, which include in-patient hospitalisation, ICU charges, and diagnostic test charges, among other things. If you do not already have health insurance and decide to get one after testing positive for CV-19, coronavirus treatment costs will not be reimbursed by your insurer.

### **Mediclaim policy in India**

A Mediclaim policy is a type of health insurance that reimburses the policyholder for medical expenses incurred in treating their medical condition. You can submit your bills for payment to your medical insurance company if you have one. If you choose the cashless treatment option, you won't have to worry about paying your bills. The hospital's cost will be paid immediately by the insurance company. To take advantage of the cashless option, you must seek treatment at one of the insurer's network hospitals. One of the most important characteristics of a Mediclaim insurance is that it is only valid for a certain amount of time, and you must renew it at the end of the term to continue receiving benefits.

### Features of a Mediclaim policy

People who live a sedentary lifestyle are at a higher risk of developing a variety of ailments. Purchasing a medical policy might assist you in obtaining financial assistance in an emergency. Many people nowadays opt to purchase a medical insurance policy for the following reasons:

- At network hospitals, you can use the cashless service.
- Individual and family Mediclaim plans are available.
- It offers tax advantages on the annual premium.

## Types of Mediclaim policies

There are several different types of Mediclaim plans on the market. You can select an insurance that meets your specific needs. The following are some of the most common Mediclaim policies:

- Individual policy– An individual policy, as the name implies, is for one person, and the benefits specified in the policy are exclusively available to the designated person.
- Family Floater Policy– A family floater policy covers a single person who can later extend the coverage to his or her entire family.
- Senior Citizen Policy– This policy is developed specifically for adults over the age of 60. This policy covers the costs of hospitalization for that age group.
- Critical Illness Mediclaim– Hospital expenses swiftly destroy your finances while combating life-threatening ailments such as cancer, kidney failure, heart disease, and so on. By paying a lump sum payment upon identification of the sickness, a critical illness policy can help to reduce those costs.

## **Government health insurance schemes**

The main aim of government by providing these schemes is to make health insurance accessible to economically backward sections in the country. These are as follows:

- Ayushman Bharat scheme: This policy aims to cover at least 50 lakh Indians with insurance. This programme is divided into two parts. One is to ensure that each family has health insurance coverage of Rs. 5 lakhs, which includes patient hospitalisation costs. Another priority is to establish health and wellness centres for these individuals. By 2022, the plan seeks to open 1.5 lakh wellness centres.
- Pradhan Mantri Suraksha Bima Yojana (PMSBY): This scheme covers disabilities or death resulting from personal accidents. Usually, these are offered for one year

and renewed year after year. This policy can be availed by anyone who attained the age of 18 and up to 70 having a savings bank account with adhaar linked.

- **Rashtriya Swasthya Bima Yojana (RSBY):** This is a government run insurance policy for BPL families across the country. This scheme was launched in 2008 and offers cashless treatment for the parents and upto three children in the empanelled hospitals both in public and private sector. The scheme covers in patient hospitalization expenses up to Rs.30000 per year, pre-existing diseases are also covered from the first day. Registration fee of Rs.30 is chargeable.
- **Universal Health Insurance Scheme (UHS):** These policies are offered to improve the health status of BPL families. Eligible families will get medical expenses reimbursement of Rs.30000 and accidental death benefit of Rs. 25000 to the elder member of the family. The scheme also compensates for the loss of income of families with Rs—50 per day up to 15 days in a month.
- **Central Government Health Scheme (CGHS):** It is one of the most popular health insurance programmes for central government employees supplied by the Indian government. Pensioners are also covered by the scheme. Because of its comprehensive health insurance benefit, this plan is unique. Health coverage is offered under this system for allopathic, homoeopathic, Ayurveda, Unani, Siddha, and yoga treatments.

### **What is the inclusion in a Mediclaim policy?**

The benefits of a Mediclaim policy differ from one insurer to the next. However, most insurance companies will cover the following costs:

- **Hospital Charges–** This comprises, among other things, oxygen cylinders, blood, organ donor expenses, housing charges, organ donation, and testing.
- **Day Care Treatment–** This covers non-hospitalization treatments for which the patient is released in less than 24 hours.

- Pre & Post Hospitalisation– Medi claim insurance also cover expenditures incurred before and after the insured is admitted to the hospital. There are a number of costs associated with therapy, both before and after the hospitalisation. That is also covered by Mediclaim.
- Hospital Stay– If you are admitted to a hospital, the cost of a bed can be several thousand dollars. The money spent on private rooms, wards, or ICU is covered by your Mediclaim policy.
- Consultation fees/ Doctor’s Charges– Mediclaim insurance also covers the costs of a doctor's consultation or a meeting with a specialist.

### **Exclusions in Mediclaim Policy:**

There are several parts of treatment that are not covered by a Mediclaim coverage, no matter how thorough it is. The following are some of the most prevalent exclusions:

- Pre-existing illnesses are covered after the waiting time is completed
- Plastic surgery and cosmetic surgery are not included
- Hearing aids and contact lenses are examples of external devices.

Make sure you read the policy paperwork thoroughly and understand the terms and circumstances, regardless of the type of Mediclaim coverage you purchase. Knowing the terms and conditions will assist you in making an informed purchasing decision and will ensure that you receive the best coverage for your needs.

### **What to keep in mind when buying a Mediclaim policy?**

As you may be aware, there are a variety of Mediclaim insurance options from which to choose. Each of these programmes comes with its own set of features and perks. This makes choose between all of the available possibilities a little more challenging. But don't be concerned! We've outlined 5 key considerations to keep in mind while comparing plans to help you make the best decision.



**Claim settlement ratio:** The claim settlement ratio is an easy concept to grasp. It refers to the percentage of claims that an insurance company may successfully settle out of the total number of claims it gets in a given year. Choose a plan and an insurance company with a better claim settlement ratio. In the event of a medical emergency, this will increase the likelihood of your claim being settled. We settled 8.61 lakh claims in the 2019 fiscal year, with a claim settlement ratio of 92.65%.

**Limits and capping:** Hospital expenses are made up of a variety of various expense categories, such as ambulance fees, room rent, and so on. Most plans have a cap on how much money they will pay out for each of these costs. Your room-rent compensation, for example, may be limited to 1% of the sum insured. As a result, even if you have a large sum insured, you may still have considerable out-of-pocket payments if you are hospitalised. As a result, you should consider plans with lower/no limits and caps. In the event of a claim, this will assist you in receiving more compensation.

**Shorter waiting periods:** For pre-existing ailments and a few specific illnesses, all health insurance policies will have a waiting period. This phase of time might last anywhere from one to four years. Your plan will not pay any medical expenses linked to the illnesses during this time. It goes without saying that a plan with a shorter waiting period is preferable. Premium loading is a feature of some plans that allows you to pay a greater premium to shorten the waiting period of your mediclaim insurance policy. If this is a financially possible option for you, it is a smart approach to avoid the waiting time and enjoy full protection.

**Premium:** Last but not least, the ideal mediclaim insurance plan will be cost-effective. Based on the aforementioned guidelines, you can narrow down a few options and compare them based on premium amounts. As a result, you'll be able to find a plan that satisfies your coverage requirements while still staying within your budget. When comparing plans, some purchasers are primarily concerned with the premiums. This may assist them in locating a mediclaim insurance policy that is extremely economical but lacks key characteristics. In the event of a medical emergency, such a strategy could be detrimental.

### **Here are 3 reasons why premiums will grow if India goes through a next wave:**

1. A bigger number of people signing up for health insurance will result in increased growth.
2. Existing clients' insurance sums are being increased.
3. As a result of a significant increase in claim ratios in FY21 and 1HFY22, insurance companies may hike premiums. Non-COVID claims for respiratory disorders, dengue fever, and chikungunya have increased significantly in frequency and severity, and claim ratios are expected to remain high throughout FY22.

### **Claim ratio and its significance**

The difference between the total amount paid out in premiums and the total amount paid out in insurance claims and expenses is known as the claim ratio. The Incurred Claim Ratio would be 80 percent if a health insurance company accepted a total of Rs 80 crore in claims against Rs 100 crore in premium paid. The health insurance company's claim settlement process is harsher if the Incurred Claim Ratio is low. An incurred Claim Ratio of 75% to 90% is considered outstanding since it indicates that the company is successful, creates high-quality products, and meets consumer demands all at the same time.

When compared to non-COVID claims, COVID-related insurance claims have nearly doubled for private insurer Star Health. The pandemic was responsible for 31% of the company's net paid claims, which increased to 41% as the ferocity of the pandemic increased with the second wave. As a result, its claims ratio increased from 64.2 percent in fiscal year 2019 to 65.8 percent in fiscal year 2020 to 87 percent in fiscal year 21. In H1 FY22, this ratio was 88.2 percent, up from 60.3 percent in H1 FY21.

**Table 3: Impact of second Wave on Insurance claims Ratio**

Insurer	4QFY21	1QFY22
Star Health	64	91
Care Health	42	104
Niva Bupa	49	87
BAGIC	74	120
HDFC ERGO	86	168
ICICI-Lom	91	169
SBI General	73	119

Source: TOI and Motilal Oswal

**Table 4: Second Wave Witnessed a higher no. of CV-19 claims but severity fell**

Claims	FY21	5MFY21	Change (%)
No. Of Claims (Millions)	1	1	44
Amount of Claims (INR b)	146	160	10
Severity per claim (INR'000)	148	112	-24
Amount of Settled claims (INR b)	78	104	33
Severity of Settled Claims (INR'000)	92	89	-4

Source: TOI and Motilal Oswal

Because of their distribution advantage, such as a larger number of agents, stand-alone insurers have already seen an increase in premiums. However, the risk of greater claims will continue to be considerable.

### 3| RESEARCH METHODOLOGY

In this project, I have used quantitative research methodology, which is more of confirmatory in nature. In addition to data analysis, I have used inferential statistics and techniques like correlation, regression and equation. Tools like excel and Tableau are also used for data handling and visualization.

The data analysis part in this study is divided into two parts:

1. In the first part, The annual financial data is taken from the financial statements like Balance sheet, Income statements, etc of Indian insurance companies. Data was collected from Moneycontrol, comprising the period FY18 to FY22. This means that both before pandemic and pandemic data are taken into consideration.

The study aims to find out whether the CV-19 pandemic affected the insurance sector or not. The following factors have been taken into account:

- ROA:  $\text{Net Income of a company} / \text{Total Assets}$
- CV-19 pandemic: If we study a during the coronavirus pandemic, the value will be one; otherwise, it will be zero.
- Size: the natural logarithm of the company's total assets.
- Fin Leverage: Financial leverage is calculated by dividing the company's total assets by the sum of its long-term debt and current obligations.
- Profitability: Insurance company profitability is measured by the natural logarithm of the net income.
- Liquidity:  $\text{Current assets} / \text{Total Assets}$ .
- Equity-Ratio:  $\text{Equity} / \text{Total Assets}$ .
- Capital-Ratio:  $\text{Capital} / \text{Total Assets}$ .
- Return on assets (ROA) indicates profitability of a company. It represents the capital intensity of the company. For companies in the same sector, ROA is comparable.

Thereafter, correlation analysis of these factors has been applied to understand how these factors are affecting each other.

2. In the second part, I have taken secondary data from Kaggle website named as “Insurance Claim Prediction Data set” which includes the following data variables:

- **Age:** Age of Insurer/Policy Holder
- **Gender of Policy Holder:** Male=1 and Female=0
- **BMI** (Body Mass Index)
- **Steps:** Average walking steps
- **Children:** No. Of children of Policy Holder
- **Smoker:** Smoker=1 and Non-smoker=0
- **Insurance Claim:** Yes=1 and No=0.

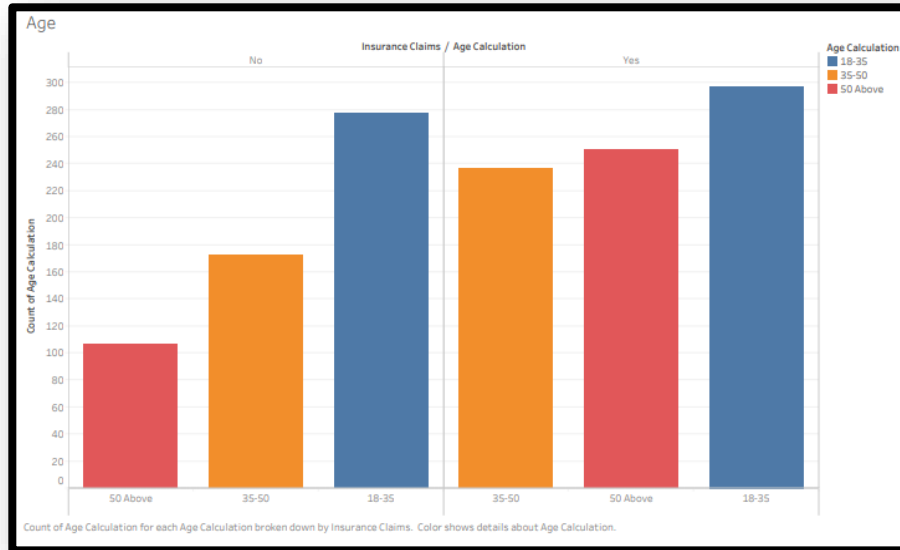
Here we have used multiple regression model to analyse the effect of above factors on insurance claims and how can the companies predict the no. of potential insurers who can claim the insurances.

#### 4| DATA ANALYSIS AND FINDINGS

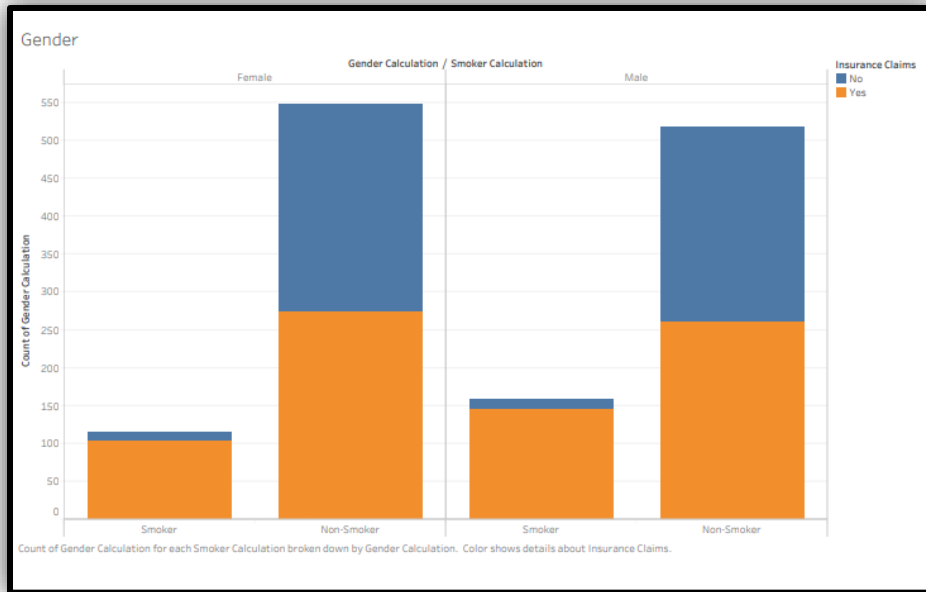
	<i>COVID-19 pandemic</i>	<i>Size</i>	<i>FinLeverage</i>	<i>Profitability</i>	<i>Liquidity</i>	<i>EquityRatio</i>	<i>Capital-Ratio</i>	<i>ROA</i>
COVID-19 pandemic	1							
Size	0.114129345	1						
FinLeverage	-0.262073774	0.872239231	1					
Profitability	0.236963744	0.096124827	-0.019186189	1				
Liquidity	-0.058634326	-0.915378633	-0.831383152	-0.174483739	1			
EquityRatio	0.262135842	-0.872170796	-0.999999977	0.019258177	0.831286186	1		
Capital-Ratio	-0.167094965	0.78891678	0.844695726	-0.291966547	-0.73253278	-0.844677414	1	
ROA	-0.027910433	-0.729427996	-0.547814198	0.124586887	0.669825064	0.54775093	-0.592992101	1

- The above table confirms that the CV-19 pandemic and Return on Assets are negatively correlated, and CV-19 has a negative effect on the company's profitability.
- The Working Capital ratio is also negatively correlated to ROA. It tells us that having significant working capital reduces the company's profitability.
- In the above correlation analysis table, an inverse relationship can be found between the financial leverage of the company and its consequent ROA. The reason could majorly be on account of the interest expenditure incurred by the company on its debt obligations, which eats up the lion's share of profits, eventually leading to a decrease in the net income. The more a firm incurs debt, the more it would be mandated to spend as its interest expense. Therefore, a reduced net income of the company would result in a lower ROA.

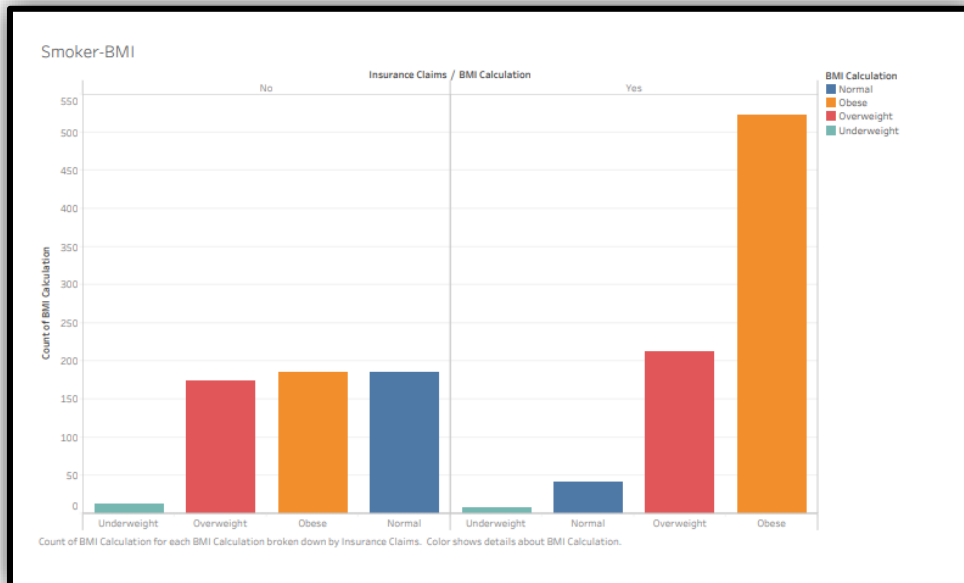
## Graphical interpretation



- In the above bar graph, people are divided into three different age groups: 18-35 Years, 35-50 Years, and 50 and above years. After that, Again, the data divide them into two parts based on whether they have insurance or not. We have found that people in the age group of 50 above years claim more insurance. To our surprise, people aged 18-35 years claim insurance in good numbers.

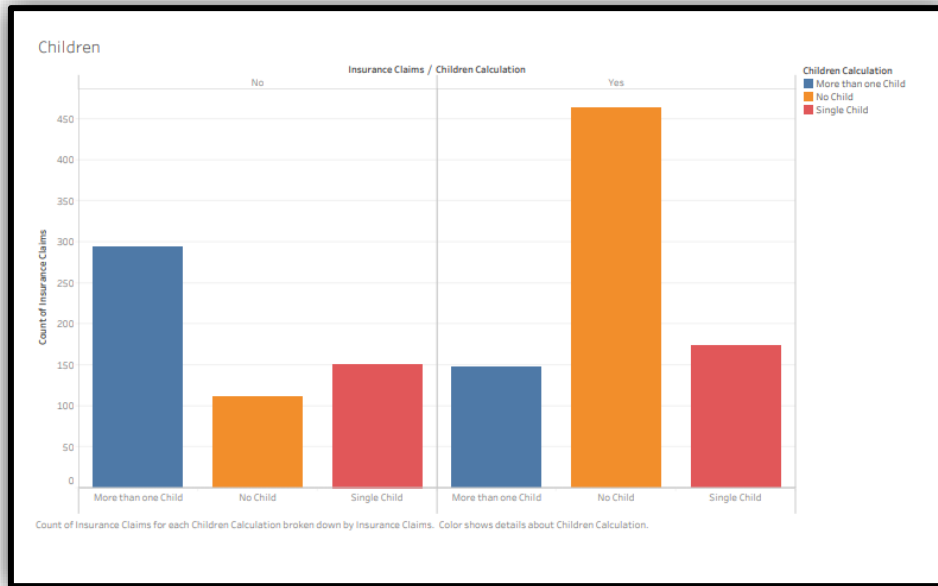


- Above graph prove that people who smoke despite of the gender they belong, there is prone to claim the insurance. As we have approx. same number of males and females, we can infer that non-smoker females claim more insurance.





- The above graph can infer that insurance claims and BMI are directly proportional. People with high BMI claim more insurance because people with high BMI are more prone to catching any diseases.



- Logical the number of children of any individual must no impacts whether they will be going to claim insurance. Still, to our surprise, People with No children or fewer children claim more insurance than others.

## Correlation Analysis

	<i>Age (Yrs)</i>	<i>Gender</i>	<i>BMI</i>	<i>Steps</i>	<i>Childrens</i>	<i>Smoker</i>	<i>Insurance claim</i>
Age (Yrs)	1						
Gender	-0.020855872	1					
BMI	0.109271882	0.046371151	1				
Steps	-0.167957383	-0.039469768	-0.68115	1			
Childrens	0.042468999	0.017162978	0.012759	0.05535	1		
Smoker	-0.025018752	0.076184817	0.00375	-0.2678	0.00767312	1	
Insurance claim	0.113722562	0.031565271	0.384198	-0.4195	-0.409526475	0.333261	1

Correlation Analysis is a statistical tool for determining whether or not two variables/datasets have a link and how strong that relationship is. In the above table, we have performed the correlation analysis to understand how all the factors such as Age, Gender, BMI, Steps, and No. Of Children, Smoker and Insurance claims are related to each other. We have observed that Age, Gender, BMI and Smoker are positively correlated to insurance claims. Among the others, Smokers have the highest probability that they will claim for Insurance.

Only the Average No. of steps in a day and No. of children of the policyholders are negatively correlated to insurance Claims. It can be inferred here that people walking daily are healthier than those skipping daily walks and file for fewer insurance claims.

1. Highly Correlated: No factors in the above tables positively correlate to the insurance claims.
2. Moderately Correlated: BMI, number of steps and smokers, are moderately correlated to the insurance claim.
3. Low Correlated: Age, Gender shows a very low correlation with the Insurance claim.

## Regression analysis

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.664255146							
R Square	0.4412349							
Adjusted R Square	0.439137433							
Standard Error	0.369115124							
Observations	1338							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	5	143.3073573	28.66147147	210.3656387	1.7208E-165			
Residual	1332	181.4796382	0.136245975					
Total	1337	324.7869955						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.381215892	0.057848518	-6.589898987	6.32317E-11	-0.494700024	-0.26773176	-0.494700024	-0.26773176
Age (Yrs)	0.00346385	0.000723905	4.784951513	1.90088E-06	0.002043732	0.004883968	0.002043732	0.004883968
Gender	-0.002354103	0.020272484	-0.116123066	0.907572513	-0.042123578	0.037415372	-0.042123578	0.037415372
BMI	0.030520631	0.001667393	18.30439713	6.14616E-67	0.027249628	0.033791634	0.027249628	0.033791634
Childrens	-0.172163996	0.008383355	-20.53640812	1.22E-81	-0.188610014	-0.155717979	-0.188610014	-0.155717979
Smoker	0.412333445	0.025086575	16.4364183	2.04647E-55	0.363119943	0.461546948	0.363119943	0.461546948

\*Children = No. of children

- Regression analysis helps to examining the relationship between two or more variables. While there are many different types of regression analysis, they all aim to find out how one or more independent variables affect a dependent variable. Here we have an R-square value of 0.44, which reveals that the regression model explains 44% of the variability observed in the target variable.
- If a p-value < 0.05, the independent variable is significant and can be taken into consideration. Therefore, excluding gender and every other independent variable is significant in the model.
- The equation below can be used to predict whether people will claim insurance or not.

$$\text{Insurance Claim} = -0.3812 + 0.00346 * (\text{Age}) - 0.00235 * (\text{Gender}) + 0.03052 * (\text{BMI}) - 0.17216 * (\text{Children}) + 0.41233 * (\text{Smoker}).$$

From the above equation, we can say that people will claim the insurance if the value will come close to 1 and they will not claim insurance if it close to 0.

## **5| CONCLUSION**

The purchase of insurance is linked to the lives of individuals and households as a vital way for people to transfer risk. When serious diseases strike, insurance becomes a safety net for people. People nowadays are paying more attention to their health due to the breakout and spread of the CV-19 pandemic in 2020, which is raising the demand for insurance, mainly health-related insurance.

Although there is a lot of new study on CV-19's economic effects, there isn't much on its impact on insurance demand. According to this study, there is an increase in insurance claims due to the CV-19.

This study also explains that CV-19 has negatively adversely the Insurance companies. This is because people in this unprecedented time claimed insurance more than ever. After all, the CV-19 disease is included in the health insurance.

In addition, as per this study, there are many factors such as BMI, Gender, Age, etc., that affect the insurance claim by any individual. Therefore, through a multiple regression model, the insurance companies can predict whether the insurer will claim the insurance or not. This will help them be more profitable and prepare them for any upcoming pandemic in the future.

The CV-19 crisis has generated concern, but it has also provided an opportunity to think more profoundly about innovation, better customer experiences.

## REFERENCES

- The impact of COVID-19 pandemic on insurance demand: the case of China: Xianhang Qian<sup>1</sup>. Received: 22 January 2021 / Accepted: 1 July 2021 / Published online: 8 July 2021 © The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature 2021
- Financial Stability of European Insurance Companies during the COVID-19 Pandemic Karolina Puławska, Accounting Department, Kozminski University, ul. Jagiellońska, 5903-301 Warsaw, Poland; [k.pulawska@kozminski.edu.pl](mailto:k.pulawska@kozminski.edu.pl).
- <https://www.kaggle.com/datasets/easonlai/sample-insurance-claim-prediction-dataset>.
- <https://www.pwc.com/gx/en/industries/financial-services/publications/impact-covid-19-insurance-reinsurance-sector.html>
- [https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/IRDAI%20Annual%20Report%202019-20\\_English.pdf](https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/IRDAI%20Annual%20Report%202019-20_English.pdf)
- <https://www.moneycontrol.com/markets/earnings/sectoral-performance/insurance/?classic=true>
- <https://timesofindia.indiatimes.com/business/india-business/omicron-scare-third-covid-wave-will-drive-premium-growth-for-insurers-but-claims-wont-be-so-severe/articleshow/88069899.cms>
- <https://www.policybazaar.com/health-insurance/govt-scheme/>
- <https://www.mckinsey.com/industries/financial-services/our-insights/how-indian-insurance-companies-can-respond-to-coronavirus>.