

## Impact of Coronavirus on Wearable Tracking Devices Based in the Global Cloud

Bipan Pal Singh

MPU Bhopal

Email: [bipanjadaun81@gmail.com](mailto:bipanjadaun81@gmail.com)

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**Correspondence:**

E-mail: [bipanjadaun81@gmail.com](mailto:bipanjadaun81@gmail.com)

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### ABSTRACT

In 2020, a virus starts making news throughout the world because of its extraordinary ability to spread from person to person. The corona virus is this virus. The corona virus illness of 2019 (COVID-19) has killed thousands of people in several nations, including Italy, the United States, India, Brazil, China, and others. Not a single person is spared from this epidemic; COVID-19 affects millions of individuals worldwide. However, this has an impact on a number of factors, one of which is wearable technology, such as smart watches, smart bracelets, smart shoes, smart belts, etc. Wearable technology is becoming more and more important in this age of digitization, especially in light of the current COVID-19 epidemic. Therefore, we will talk about the COVID-19 pandemic's part in the market's rise as well as its effects in this essay. This essay presents wearable technology's uses and gives a quick explanation of how it may be used to combat the current epidemic. Remote health monitoring, screening, real-time tracking, improved treatment without spreading the illness to other people, and surveillance were all approved by these gadgets. As a result, it lessens the workload for the healthcare sector in terms of corona virus prevention and transmission reduction. Millions of people worldwide suffer from respiratory conditions that call for constant observation in order to be treated. This wearable gadget assists medical professionals in monitoring the breathing parameters of patients infected with the corona virus and offers ways to obtain the patient's critical information in the event of a chronic sickness. The other people's perspective is impacted by hearing about patients' progress, which raises tension and anxiety levels. Wearable technology that monitors a person's heart rate variability can help them reduce their stress and anxiety (HRV).

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## 1.INTRODUCTION:

The corona virus pandemic that was first reported from Wuhan, China on December 31, 2019, has an impact on people all over the world. A group of viruses known to cause illnesses ranging from the ordinary cold and cough to more serious conditions like severe acute respiratory syndrome (SARS) and Middle East Respiratory Syndrome (MERS) includes corona viruses. It is expanding quickly, which is creating a serious problem for all people. As of right now, 8,708,008 instances of corona virus infection have been reported globally, with 461,715 confirmed fatalities. These figures are subject to hourly fluctuations. Our scientists and researchers are looking for novel ways to screen and manage the spread of COVID-19 during this epidemic. From the perspective of public health as a whole, monitoring the viral infection is essential to providing appropriate patient isolation and preventing disease containment. In light of the current

circumstances, digital technologies such as artificial intelligence (AI) and the internet of things (IoT) are sophisticated computational tools that enable us to address significant challenges related to the corona virus.

By combining certain vital signals with clinical symptomology, wearable technology can be very helpful in predicting the onset of certain illnesses. Wearable technology has therefore been employed to combat COVID-19. The question of whether wearable technology with large data collection capabilities can forecast the onset of a virus is still being studied. Researchers at the US's Rockefeller Neuroscience Institute have claimed that an app that monitors certain signals may be coupled with data from the wearable sleep and activity tracker, Oura ring, to predict in advance if a someone may have symptoms of Covid-19. According to the wearable technology, a person might manifest symptoms up to three days before they did, such as fever, coughing, and dyspnea.

Nevertheless, the DETECT (Digital Engagement & Tracking for Early Control & Treatment) Study, launched by the Scripps Research Translational Institute, tracks positive cases of Covid-19 by combining patient-submitted symptom reports with data from activity, heart rate, and sleep using gadgets like Apple Watch, Fit bit, and Garmin. It sounds like a promise, but accuracy is still a problem. A variety of measures are measured by wearable devices under investigation, which might produce biased results. Therefore, it seems sense to start seeing trends and tracking important Covid-19 properties with wearable technology. Global Data intends to have one before these tools are able to accurately anticipate COVID-19, though.

## **2.LITREATURE REVIEW:**

In Chicago, researchers from Shirley Ryan Ability Lab and North-western University have introduced a wearable device and are developing a set of data algorithms to recognise key symptoms and indicators that are consistent with COVID-19 and to follow and monitor patients as their condition gets better. The first wearable technology was created in 1961 by Edward Thorp and Claude Shannon, who created a computer that could fit inside a shoe. They employed a timing gadget to predict where the ball would land in order to cheat in a game of roulette. The first wristwatch was introduced in 1975. The walkman was introduced in 1979. Digital hearing aids, which revolutionised the healthcare sector, were created in 1987. The wearable wireless webcam was invented by Canadian researcher Steve Mann. Throughout this time, wearable technology conferences and exposés on smart clothes became more and more popular. Fit bit, Bluetooth headphones, Nike iPods, and many other wearable gadgets gained popularity in 2000. When Google Glass first hit the market, it was expanding quickly. In 2015, the Apple Watch joined it, and in 2016 the Oculus Rift headset joined it. According to 49% of participants in a recent poll on wearable technology, it will increase workplace productivity.

Here, the topic of "accuracy" comes up again and time again. These days, there is a growing need for them, thus more sensors are being included into wearable technology. Research on the historical data into software that looks for trends went on for weeks. When a person doesn't pay

attention to their body, such as when their heart rate is slightly raised, this algorithm is employed. A little amount of variance in temperature, sleep habits, and heart rate variability allows the software to forecast what is likely to occur in the next few days. Previous research has connected wearable data to previously undiagnosed conditions including high blood pressure, arrhythmia, and early-stage cancer. It has also been used to improve real-time monitoring of seasonal flu epidemics. Therefore, scientists think that the corona virus has the ability to alter the entire game. "Because everybody is facing this, it is a chance for all of us to accumulate data from essentially the entire population, which is very unique," stated Duke University.

#### **WEARABLE TECHNOLOGY:**

Wearable technology will eventually play a crucial role in daily living. Every day, wearable technology is getting better and better. Wearable technology, often known as wearable computing, refers to a variety of gadgets worn on an individual basis. Two categories can be used to categorise wearable devices:

- (i) The primary portion, which conducts independently and serves as important connections for additional accessories. Smartphones and fitness trackers worn on the wrist are two examples.
- (ii) Secondary section, implementing particular actions. Take the heart rate monitor, for instance. The use of wearable technology is vital to human health. In the near future, wearable devices will likely have even more features, security, efficiency, and ways available. Wearable technology for human health care is primarily focused on innovation and quick service.

#### **DATA ANALYZE:**

It is currently predicted that the wearables industry would grow by around 9% globally in 2020. This is a big rise above the % growth the market had in 2019. The COVID-19 epidemic has had an impact on the desire for wearables.

#### **Years that have been considered for the study are as follows:**

- Base Year – 2019
- Estimated Year – 2020
- Forecast Period – 2020 to 2023

We have examined how COVID-19 affects the market's desire for wearable technology based on research. Generally speaking, there are a plethora of technologies that can have both beneficial and harmful effects on a patient's health. When it comes to wearable technology's performance in the medical field, these gadgets excel from an advantage standpoint. Additionally, this graph shows how COVID-19 affected the demand for wearable technology. Its demand in the upcoming years may be substantial, as we have hypothesised. If its revenue is compared to the prior year, it will rise. The proliferation of wearable technology has made life too easy by making a lot of tasks simple that were impossible in earlier times. Technology is advancing in today's world not

just in the healthcare industry but also in other fields including construction, agriculture, and social interaction monitoring.

The International statistics Corporation (IDC) has released fresh statistics that indicates a 94% growth in the worldwide wearable industry by 2020. Given that the COVID-19 pandemic affected supplies in the first few months of 2020, this indicates a notable decline in the market compared to the 89% rise in 2019. We learned from the poll that the wristbands had a negative impact in the early days of 2020 as a result of COVID-19. from which a projected 13% drop is expected. Concurrently, the smart watch has steadily developed in terms of fitness and health as well as the usefulness of having information on-display at all times. The 5-year CAGR for smart watches is expected to be 11.4%. Apple will continue to lag behind because it provides a highly connected environment, several OS upgrades, and the ability to track the condition and fitness of its goods. Many other smart watch manufacturers, like Oppo, rely on customising Android to operate on their devices in addition to Apple. Over the course of the prediction, smart watches running on Android are anticipated to make up slightly more than 25% of the market.

Android-based smart watches are anticipated to hold a market share of more than 25% over the projection period. By 2023, the size of the worldwide market for wearable medical devices might reach USD 27,200 million. In 2017, its valuation was USD 7,859.4 million. Throughout the forecast period, a 23% CAGR is anticipated.

In India, the market has grown at a quicker rate in 2015. In addition, the number of wristbands and smart watches is growing, they are becoming more and more popular, and in 2019 they have a significant market share. The key elements propelling the market's growth include fitness, high-speed internet connectivity, and knowledge of technical advancements. Prior to the transition from wired earbuds to wireless communication or wireless technologies, ear wear devices were less common.

### **3.Conclusion:**

This research paper discusses the effects of the corona virus on the market for wearable technology and explains how this helps to stop the infection from spreading. Devices that are comfortable to wear on the body are called wearable technology. These gadgets, which include the Samsung Gear 2, Fit Bit Flex, Jawbone UP, Google Glass, Google, LECHAL GPS Shoes, Spot save Wristband, and others, are mostly used for sensor-based data tracking. After doing extensive study, we came to the conclusion that while COVID will have an influence on the market in 2020, demand for it will be strong in the next years. Additionally, this gadget is incredibly beneficial; it made doctors' jobs easier and allowed for less risky treatment of patients. Public gatherings and social distances are now governed by rules. For this reason, medical professionals are turning to telemedicine, which allows them to treat patients from a distance without spreading any viruses. The development of telemedicine and apps that integrate artificial intelligence (AI) into systems to support medical professionals has stimulated the growth of the wearable medical device industry. Activity trackers had a larger market share in 2017, however throughout the course of the forecast period, smart clothing is expected to grow at the fastest rate.

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