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# A user opinion survey on the probable impact of COVID-19 on long-distance travel in India

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**ABSTRACT**

The transportation sector has been severely crippled by the COVID-19 crisis in India. Due to the strict enforcement of a nation-wide lockdown, the operators of long-distance transport in India by road, rail, and air have suffered leading to loss of jobs and pay cuts. As the year 2020 reaches an end, the severity of the pandemic began to subside and the common modes of long-distance travel such as trains, flights, buses, and taxis are now operational up to some extent. However, people are exercising caution while traveling amidst the pandemic, especially long-distance travel. This study aims to understand the mind-set and behavior of individuals traveling long-distances amidst the pandemic, also referred to as the 'New Normal.' Hence, a user opinion survey was conducted to comprehend the probable impact of COVID-19 on long-distance travel in India. The results revealed a significant change in the respondents' travel behavior and frequency of travel. The travel by air and own car are being preferred over other modes of transport. 'Comfort and Hygiene' is now the most important factor that affects the mode choice of travel followed by the cost and travel time.

**KEYWORDS**

COVID-19; long-distance travel; travel frequency; travel behavior; mode choice; user preference studies

## Introduction

'Transportation' is one of the key factors for the COVID-19 to become a global pandemic (Hendrickson and Rilett 2020). The pandemic abruptly halted the transportation systems all over the world (Zhang 2020; Bucsky 2020). In India, a nationwide lockdown was initiated from the 25$^{th}$ of March 2020 up to the 1$^{st}$ of June 2020. All forms of public transport such as bus, metro, train, and air were suspended during this period and personal vehicle movement was strictly regulated. As of December 14 2020, 9.88 million people were reported to be infected with COVID-19 in India, the second-largest infected country in the world next to the USA. A total of 1,43,355 fatalities have occurred in India due to the pandemic. The country stands third in the number of fatalities, occurring next only to the USA and Brazil (Who.int 2020). Many people who were working or studying at far-off locations were stranded and unable to return to their homes during the lockdown phase.

The public transportation services resumed cautiously in a phased manner from June 2020 despite the ongoing pandemic which is referred to as the 'New Normal.' Even in December 2020, a significant number of employees work from home, especially in the information technology and software industry. Educational institutes have adopted online teaching-learning and evaluation methods. Business meetings and conferences have gone virtual. Due to these circumstances, there is a huge demand and supply gap in public transportation services, and the travel demand for the same has not yet reached the pre-COVID-19 levels. The majority of people are hesitant to travel out-station as it is ascertained that the COVID-19 infections can spread during traveling for longer durations. Also, traveling long-distance necessitates the use of multimodal travel, which could further increase the probability of transmission of COVID-19.

In India, the different modes available for long-distance travel are road, rail, and air. Development of High-Speed Railway (HSR) along the routes of Mumbai–Ahmedabad is in progress whereas different other routes have also been identified for the development of the HSR. HSR is well awaited in India and has been included in the present study as it will be operational in the near future. Plans have been made to connect the major cities of India using the elevated HSR (Nhsrcl.in 2020). The HSR significantly reduces inter-city travel time as they are capable of traveling at speeds of more than 200–250 km per hour (Cao and Zhu 2017). Also, the HSR is expected to create employment opportunities and growth for the economy (Chang and Jung 2016; Chen and De Abreu E Silva 2013). The COVID-19 catastrophe may bring new challenges in the urban transportation sector and the way people around the world travel, especially for long-distance journeys with high travel demand, as it increases the risk of virus transmission due to longer travel times. Hence, this paper focuses on understanding the travel behavior of people while traveling long distances during the 'New Normal' situation through a user opinion survey.

## Literature review

As the COVID-19 progressed from a local epidemic to a full-blown pandemic, majority of the countries around the globe took several common measures to curb the pandemic. Restrictions on traveling, closure of educational institutes, social distancing, and wearing face masks in public were the most common measures adopted by the governments. Some countries like China, India, UK, Italy, etc., imposed strict lockdown and curfew,

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