DEPARTMENT OF BUSINESS ECONOMICS

UNIVERSITY OF DELHI

RESEARCH PROJECT REPORT

Effect Analysis of COVID-19 on Education with Respect to Different Income, Gender, Region and Employment in India

SUBMITTED TO: PROF. YAMINI GUPT

Submitted by:
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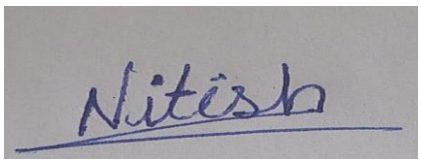
CERTIFICATE OF DECLARATION

This is to certify that the report entitled "**Effect analysis of covid-19 on education with respect to different income, Gender, rural /urban Area and Employment in India**" which is submitted in partial fulfilment of the requirement for the award of degree of MBA (Business Economics) to the Department of Business Economics, South Campus, University of Delhi, comprises only my original work and due acknowledgment has been given
in the text to all other materials used. This work has not been submitted/ published anywhere else.

Name and Signature of the Supervisor



Candidate Name of Candidate:

Nitish Sou

Enrollment No.: 21DFBEMBBE000012

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On a final note, I'd like to record my obligation toward my department and colleagues to provide me with a conducive support structure and opinions to conduct this research work.

Any omission in this acknowledgment doesn't mean any lack of gratitude from my end. This project has been a great learning opportunity and I thank everyone who contributed to the completion whether directly or indirectly.

Name of the Candidate: **Nitish Sou**

Enrolment No.: 21DFBEMBBE000012

Place: **New Delhi**

Executive Summary

The pandemic COVID-19 is the most impactful incident in history after the Second World War, which has shattered every aspect of human life. The risk we face is becoming more linked as the world becomes more interconnected. The COVID-19 pandemic has crossed national borders.

This research project aims to analyse the effects of the COVID-19 pandemic on education in India, with a particular focus on different income levels, genders, rural/urban areas, and employment status. The study is based on a review of the relevant literature and empirical data collected from various sources, including surveys, government reports, and media reports.

The findings of the study reveal that the COVID-19 pandemic has had a significant impact on education in India, affecting students from all income levels, genders, and geographic locations. The closure of schools and universities has disrupted the education of millions of students across the country, leading to a significant learning loss.

The study found that students from low-income families have been disproportionately affected by the pandemic due to the lack of access to digital devices and internet connectivity, which has hindered their ability to participate in online learning. Furthermore, female students have been more adversely affected by the pandemic than male students, primarily due to traditional gender roles and social norms that limit their access to education.

The study also revealed that the impact of the pandemic on education has been more severe in rural areas than in urban areas, primarily due to the lack of infrastructure and resources in rural schools. The closure of schools has also had a significant impact on the employment of teachers, with many losing their jobs or experiencing a reduction in income.

The research project concludes that the COVID-19 pandemic has had a profound and long-lasting impact on education in India, with its effects felt across different income levels, genders, rural/urban areas, and employment status. The study highlights the urgent need for the government to address the existing inequalities in the education system and invest in digital infrastructure and resources to ensure that all students have access to quality education, regardless of their background or location.

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1. Introduction

1.1 Background

The pandemic COVID-19 is the most impactful incident in history after the Second World War, which has shattered every aspect of human life. The COVID-19 lockdowns have disrupted traditional schooling in most countries, causing the largest disruption of education systems in history, affecting almost 1600 million students in over 190 countries across all continents. More than 90% of the world's student population have got impacted by closures of School, colleges and other learning institutes, with rates as high as 99 percent in low and lower-middle income countries. The crisis exacerbates existing educational inequities by limiting possibilities for many of the most vulnerable children, teenagers, and adults — those living in poverty or rural areas, girls, refugees, people with disabilities, and those forcibly displaced – to continue their education. The losses in learning also threaten to extend beyond this generation, wiping out decades of achievement, particularly in boosting girls' and young women's access to and retention in education.

Similarly, the academic disruption has had and will continue to have far-reaching consequences outside of the classroom. Closures of educational institutions obstruct the delivery of critical services to children and communities, such as access to nutritious food. Education financing may confront significant issues as fiscal constraints rise and development assistance is strained, compounding enormous pre COVID-19 education budget imbalances. For low- and lower-middle-income countries, the gap has stretched to a staggering $148 billion per year, and it might now widen by as much as one-third. This crisis, on the other hand, has sparked innovation in the education sector. From radio and television to take-home packages, we've seen inventive techniques to ensuring education and training continuity. Distance learning solutions were established as a result of swift responses from governments and partners all around the world, including the Global Education Coalition organised by UNESCO, to ensure education continuity. We've also been reminded of the critical role of teachers, as well as the ongoing responsibility that governments and other key partners have to education workers.

Nonetheless, these shifts have revealed that the bright future of learning, as well as the rapid changes in modes of providing high-quality education, are inextricably linked to the imperative of leaving no one behind. Especially for children and teens who are unable to study due to a lack of resources or an enabling environment. It is true for teachers and their need for better training in new educational delivery and support approaches.

As we know Education has been a **key component** to measure development changes over time and between countries. Its **effects** range from **poverty** and **inequality reductions** to paving the way for **sustained economic growth.** Other benefits of education include **higher wages, social mobility, useful life skills,**

improved discipline and willingness to change.

- *Indian government has imposed one of the **longest school closures** globally as it suffered through multiple waves of the COVID-19 pandemic. These school closures **have revealed the inequities between urban and rural populations**, as well as **between girls and boys,** in adapting to online learning tools.* A more **distressing** impact has been the surge in the number of **dropouts**. Prior to the pandemic, education in rural areas was seen as a **trade-off**, where going to school meant an inability to help parents earn a **living on the farm** or in a shop.

- During the pandemic, many families were **unemployed**, **financially stressed or in debt**. This gives rise to the possibility that many parents in the rural areas may not send their children back to school so as to help the family financially.The pandemic has hit everyone but the affects vary from person to person and people from marginalized communities are affected disproportionately, especially the women. The already existing unequal structures of the society are exposed by this pandemic. The affect of lockdown on the educational system across the country, leading to the closures of all educational institutions has further worsened the condition of female education in India. This work deals with the major impact of COVID 19 pandemic on female And rural education in the country

1.2 Relevance of the Study

- Through the findings of this research project, we will be able to identify the impact of COVID-19 on School and college students With respect to different income class and gender, jobless which will help us understand a overall impact that students in rural area and girl student have had to face in times of the COVID.
- To identify how covid led employment loss and migration which led to income loss of family. This led to different effect on education in male/ female student in different rural area or urban area**.**

Figure 1 Conceptual framework of study

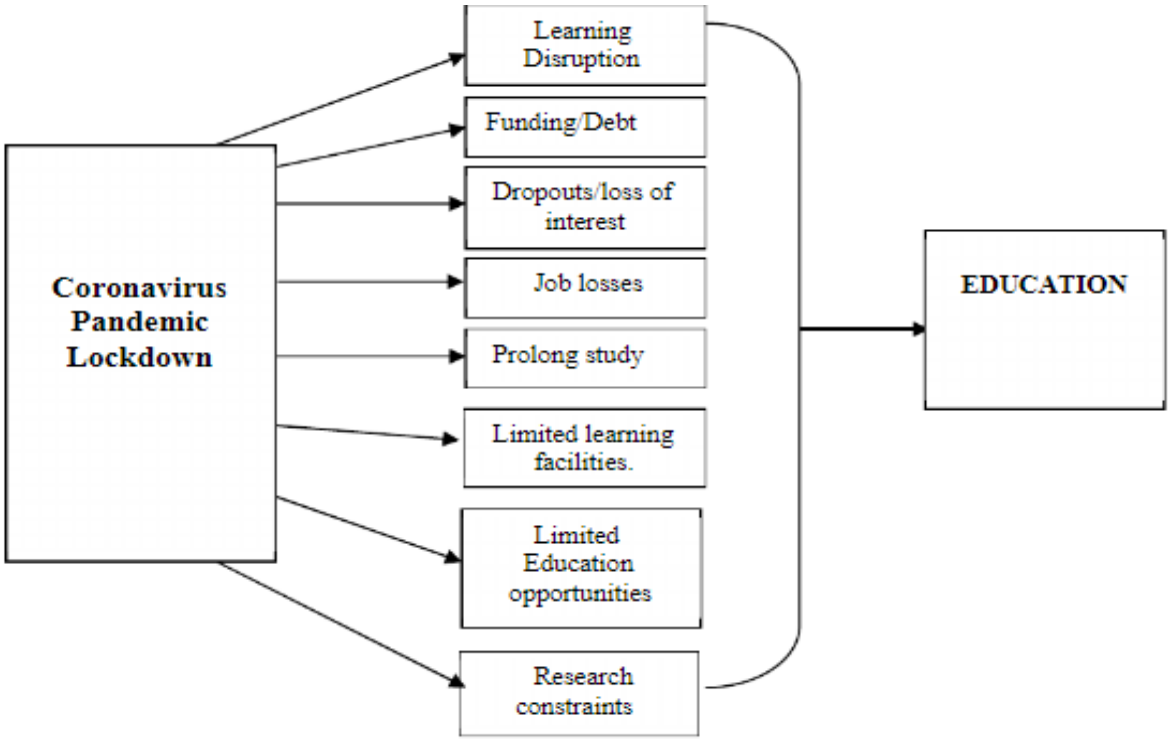


Figure 1: Conceptual Framework of the Study (Source: Researcher)

1.3 Scope of the Study

The study will help us understand the impact of COVID-19 on the education sector by analysing demographic & other variables and the influence of variables to understand the role of income gender and region. This study will further help understand various measures taken by the Government of India for the education sector during this. The study will focus on various variables such as dropout rates, gender disparity, income level, and region to understand their influence on the education sector during the pandemic. The study will also analyse the overall impact of the COVID-19 pandemic on student participation in class and extracurricular activities, interaction with teachers, mental health, and changes in future plans.

The research will further investigate the effectiveness of government-based e-learning platforms such as NPTEL, SWAYAM, and E-PGPATHSHALA in helping students in their

learning. The study will also conduct a comprehensive analysis of the differences in access to education during the COVID-19 pandemic across rural, semi-urban, and urban regions in India.

Additionally, the research will explore the relationship between gender and access to education during the COVID-19 pandemic in India. The study will also analyze the policy changes and support needed to ensure equitable access to education during the pandemic for marginalized communities in India.

The proposed study will employ both secondary data, including government statistics and media articles, and primary surveys to ensure a comprehensive analysis of the research variables. The findings of this study will help policymakers and stakeholders in the education sector to formulate effective policies and interventions to address the challenges posed by the COVID-19 pandemic on the education sector in India.

2. Literature Review

2.1 Introduction

As The COVID-19 pandemic has caused massive disruptions in the education sector worldwide, including in India. The Indian government implemented a nationwide lockdown as a preventive measure, which had a significant impact on education. However, it has also highlighted the need for investment in the education sector to ensure the continuity of learning.

Many countries worldwide have invested huge amounts of money in the education sector to boost the skill sets of their citizens and uplift their countries. However, in India, the education sector is run by bureaucrats who have no experience, leading to a lack of innovation and progress. The education system is becoming more bureaucratized, which is causing it to fall behind.

To address this issue, modern systems equipped with scientific technologies and scrupulous teachers are necessary. Proper investment in education is crucial, but it should be utilized in a proper manner. However, internet availability is a major hindrance to the progress of education in India. The majority of the population in rural areas do not have access to 4G internet services, which has hindered online learning.

The COVID-19 pandemic has led to the adoption of online learning methods in India, but these methods are not accessible to everyone due to poor internet infrastructure. Many teachers have attempted to teach through platforms such as Google Classroom and YouTube, but this requires fast internet speed, which is not available to everyone. Additionally, not everyone in the country can afford smartphones to attend

online lectures.

Therefore, this literature review aims to examine the impact of income level, gender, and regions on access to education during the COVID-19 pandemic in India. Furthermore, it seeks to evaluate the effectiveness of online learning platforms in mitigating disruptions to education caused by the pandemic and identify policy changes and support required to ensure equitable access to education for marginalized communities.

2.2 Previous Studies

Following studies have been conducted before on this topic We will carefully examine each of them-

Review of Literature: Pandemic COVID-19: An empirical analysis of impact on Indian higher education system (Churi, 2021) confirms the effects of COVID-19 on Higher Education Institutions in India. The study aimed to analyze the consequences of the pandemic on the teaching and learning system in different states of India and its impact on tertiary education as well. The author collected data through structured surveys and library analysis and analyzed it using chi-sq. The examination and analysis revealed that the viral outbreak has significant effects on Higher Education Institutions in India. Therefore, it can be concluded that the COVID-19 pandemic has had a profound impact on the education sector, particularly on tertiary education in India.

A study by Antipova (2022) analyzed the impact of COVID-19 on employment and unemployment across multi-dimensional social disadvantaged areas. The study considered economic conditions in regions with pre-existing inequalities and examined labor market outcomes. The author used a comparative assessment approach to analyze COVID-19-based labor market outcomes, including the rates of COVID-19-related employment and unemployment, and tested the hypothesis.

The findings revealed that some socio-economic and demographic conditions consistently and significantly impact some communities more often than others. Therefore, it can be concluded that the pandemic has had a significant impact on employment and unemployment, particularly in regions with pre-existing inequalities.

Tilak (2021) examined the progress of education in rural areas of India and compared it with that of urban areas. The author used statistical analysis with secondary data on education enrollment and literacy rate to reach the conclusions. In absolute as well as relative terms of rates of growth, the study noticed that with respect to all the four variates, viz., number of institutions, enrollments, teachers, more data needed for study. Therefore, the study concludes that education in rural areas of India needs more attention and further research.

A study by Wu and Yu (2021) investigated geographic and gender disparities in global education achievement during the COVID-19 pandemic. The objective was to study the global learning losses of students due to COVID-19 in 2020. The authors used harmonized test scores to measure cognitive competence of students, descriptive statistics of HTS in different regions and income-level groups to analyze the data. The findings revealed both global learning losses and gender inequality in learning scores due to the COVID-19 pandemic. Therefore, it can be concluded that the pandemic has resulted in significant learning losses worldwide, with gender disparities.

Singh (2021) investigated the status of women engineers in education and employment during the COVID-19 pandemic. The objective was to examine the link between higher education and gender-role attitudes in employment. The author used descriptive analysis of secondary data and an independent-samples t-Test is a statistical method to reach the conclusions. The findings revealed that the impact of COVID-19 is not significantly different between genders in engineering education and employment. Therefore, it can be concluded that the pandemic has not significantly affected the status of women engineers in education and employment.

K. Chaturvedi,(2021) aimed to assess and explore impact of COVID-19 on the students of different age groups: time spent on online classes and self-study, medium used for learning, sleeping habits, daily fitness routine, and the subsequent effects on weight, social life, and mental health.

Summary

This literature review indicates that COVID-19 has had a significant impact on access to education and employment in India, particularly for marginalized communities. The studies suggest that there are geographic and gender disparities in access to education and that policy changes are necessary to ensure equitable access to education during the pandemic.
The studies also reveal the need for modern systems equipped with scientific technologies and scrupulous teachers to address the challenges posed by the pandemic. Additionally, the review highlights the need for more data and analysis to fully understand the impact of COVID-19 on education in rural areas of India.

2.3 Research Gap

Hence, after going through from the above studies, reports, and articles, my research will aim to fill the research gap by observing the effect of COVID 19 on the Education analysing the variables such as dropout rates gender disparity, and other variables. this study will further help you understand various measures taken by Govt. of India for the education sector during this Pandemic.

Following Research Gap identified in our Literature review -

1. While the impact of the COVID-19 pandemic on education has been studied extensively in India, there is a limited understanding of the impact of income level on access to education during the pandemic.
2. Despite the availability of government-based e-learning platforms such as NPTEL, SWAYAM, and E-PGPATHSHALA, there is a lack of student-based surveys or studies on how these platforms have helped students in learning.
3. There is a lack of comprehensive analysis of the differences in access to education during the COVID-19 pandemic across rural, semi-urban, and urban regions in India.
4. There is inadequate knowledge about the relationship between gender and access to education during the COVID-19 pandemic in India.
5. There is scarce information on the policy changes and support needed to ensure equitable access to education during the COVID-19 pandemic for marginalized communities in India. There is a dearth of research on the effect of the COVID-19 pandemic on school enrolment beyond government or NSO data.
6. Most of the research conducted so far includes only secondary data, media articles, government statistics, or primary surveys, but not both types of data, leading to a potential research gap.

3. Objectives and Hypotheses

3.1 Objectives

Based on the Our research Gap in your survey, here are five potential research objectives:

1. To investigate the relationship income level, gender between and access to education during the COVID-19 pandemic in India.
2. To Analyse the differences in access to education during the COVID-19 pandemic across rural, semi-urban, and urban regions in India.
3. To evaluate the effectiveness of online learning platforms and resources in mitigating disruptions to education caused by the COVID-19 pandemic in India.
4. To Analyse participation and interaction of students in Curricular and extra-curricular activities during pandemic.
5. To identify support provided or resources used by students in learning during the covid-19.

These objectives could guide our research on the most important factors affecting access to education during the pandemic in India.

4. Research Methodology

The project methodology is based on three steps as follows:

4.1 Secondary Research:

The secondary research was conducted by analysing the data and surveys from the government and education ministry to understand the macro-level scenario of school and their enrollment of children there, and connectivity in schools during the pandemic.

4.2 Primary Research

Primary research was conducted to carry out the second objective of understanding the factors That are affected the learning of students during Covid. The following steps were undertaken for this:

- A questionnaire designed to gauge the opinions of customers was floated electronically using a google form format.
- Method of Stratified sampling and random sampling was used to select the sample.
- The questionnaire sought to understand the effect on education with demographic qualities.

I Collected data through phone survey and one to one interview with school children.

Descriptive Analysis and Exploratory Data Analysis:

Descriptive Statistical measures like Frequency Distribution Tables, Cross Tabulations, Bar Graphs and Pie Charts have been used to study the responses in detail and gain insights from data.

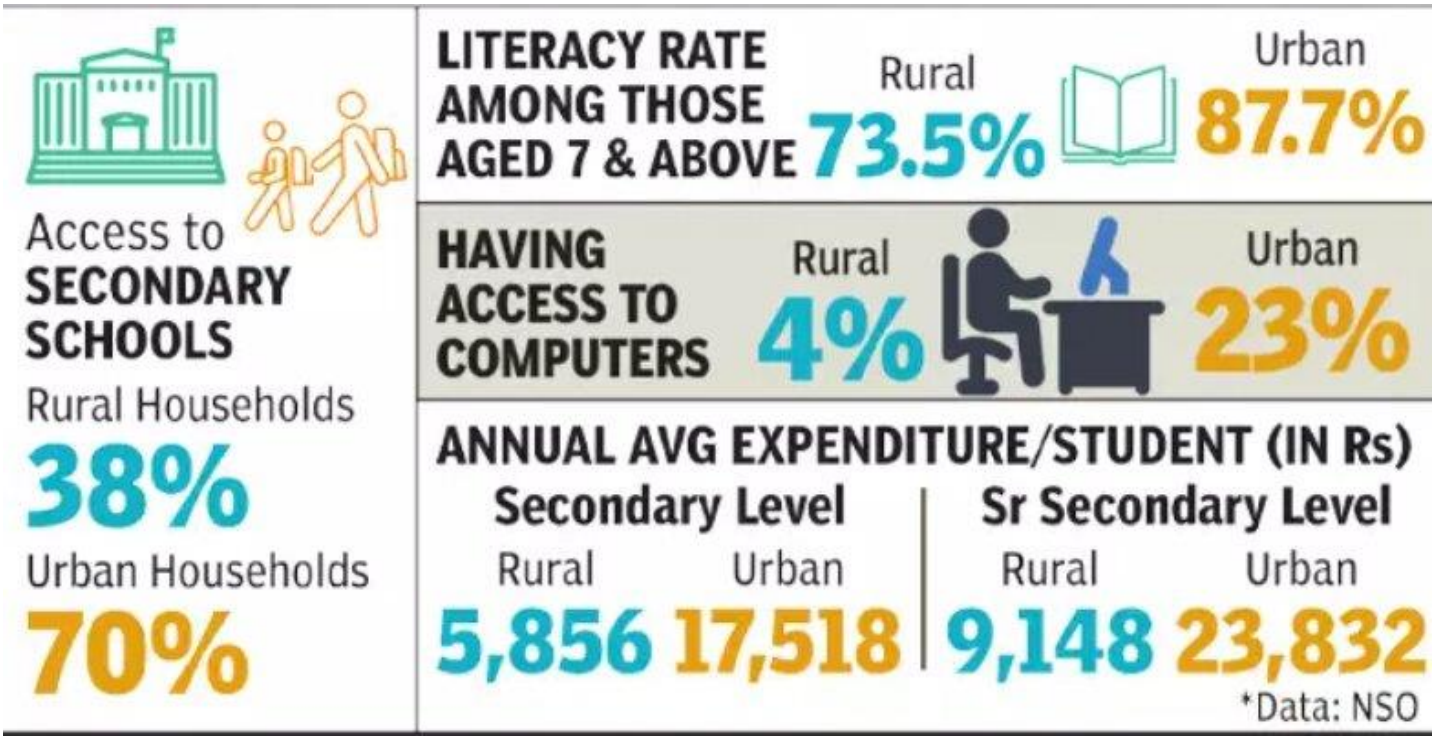
A frequency distribution summarizes the data in a tabular form representing the number of observations in each of the several non-overlapping categories or classes. Bar charts, pie charts, cross tabulations and more techniques have been adopted for effective display of data.

Data Sources and Description

5. Secondary Data Analysis

The Indian school Education System is one of the largest in the world with nearly 14.89 lakh schools, more than 95 lakh teachers and nearly 26.52 Crore students of pre-primary to higher secondary level from varied socio-economic backgrounds.

Figure 2 NSO Data Visualization



In NSO Survey , A sample of 64,519 rural households from 8,097 villages and 49,238 urban households from 6,188 blocks was surveyed all over India.

- This survey covered **both qualitative and quantitative aspects** related to educational attainment of the household members and educational services used by them.

5.1 Educational attainment of the household

1) **Internet access-**

   a. There is a major **digital divide within the country** across states, cities and villages, and income groups **(National Statistical Organisation Survey on Digital Education Divide).**

   b. Nearly **4% of rural households and 23% of urban households** possessed computers and **24% of the households in the country had internet access.(Just before COVID-19)**

c. Among persons of age 15-29 years, nearly **24% in rural areas and 56% in urban areas were able to operate a computer.**

2) **Education and Literacy Rates:**

a. **Literacy rate** among persons (aged 7 years and above) in India was about 77.7%. In rural areas, the literacy rate was 73.5% compared to 87.7% in urban areas **(Report on Literacy Rate).**

b. **Male literacy rate was higher** (84.7%) than female literacy rate (70.3%).

c. Only **5.7% were graduates or above in rural areas** while the percentage was 21.7% in urban areas.

3) **Access to schools, Attendance, Type of education:**

a. Only **38% of rural households have secondary schools within 1 km** of the house as compared to **70% for urban households.**

b. In rural areas **92.7%** of households and in urban areas, **87.2%** of households reported availability of primary school within 1 km from the house.

c. 96.1% of students were in general education and remaining were in technical/professional education.

d. **Gross Attendance Ratio (GAR)** at primary level was nearly 100% for both males and females in rural and urban areas.

i. For each level of education, GAR is the ratio of the number of persons attending in the level of education (For eg. Class I-V) to the number of persons in the corresponding official age-group (For eg. Total Population of age group 6-10).

4) **Free education, Scholarships, Stipends:**

a. At all-India level nearly **14%** students attending formal education received scholarship/stipend/reimbursement.

b. **77%** of the students studying in Government institutions were receiving **free education.** Percentage of students studying in private unaided institutions and receiving free education was nearly 2% in rural areas and 1% in urban areas.

c. At **pre-primary** level nearly **33% students were getting free education** in India. At **primary** level, the proportion of students receiving free education was **62%**

5) **Private Coachings:**

a. Nearly 20% of students attending pre-primary and above level were taking private coaching in India.

b. Incidence of taking private coaching was maximum at secondary level (31% of male students and 29% of female students).

6) **Household expenditure on education:**

a. Average expenditure per student incurred during the current academic session (2017-18) for basic courses was nearly Rs. 8,331 for general courses, Rs. 50,307 for technical/professional courses.

b. The average annual expenditure on education for secondary school students is Rs. 9,013, of which Rs. 4,078 goes towards regular school fees.

c. About Rs. 1,632, or just over 18%, goes towards private coaching. In higher secondary school, students spend more than Rs. 2,500, also about 18% of the total expenditure, on private coaching.

7) **Persons currently not attending education:**

a. In India, percentages of persons in the age group of 3-35 years dropping out of studies were nearly 14% in rural areas and 10% in urban areas.

b. For the **males** of age 3-35 years **engagement in economic activities** was the most common major reason for currently not attending education, whereas for the females it was **engagement in domestic activities.**

Key Concerns

- **Digital Divide:** Online education is yet to develop as a common good and too-much reliance of this mode will only lead to selective reach of education.
- **Difference in literacy rate between men and women:** This not only leads to **increased gender divide** but also leads to low participation of women in the workforce and **research and development activities.** Also, as the reason for women dropping out of schools remains domestic, the deep-ingrained patriarchy in the society is still the major factor behind the gender divide.
- **Dependence on private coaching centres for education:** This leads to the affluent having more access to education thus increasing the disparities between different social groups. It also comprises the quality of education as the emphasis often shifts to employability only, while the real motive of education should be to enhance critical thinking along with developing skills of the students.
- **Heavy Household expenditure:** In spite of many government initiatives to promote and improve education in governmental institutions, the cost of education is still very high for a large population to afford. The percentage of students who are receiving free education is still not enough and many needy students are outside its coverage.
- **Rural and Urban Divide:** The huge differences in some parameters like internet access, ability to use the internet or physical access to schools show that the Urban and rural India have very different conditions. Accordingly, there is a need for separate policies which cater to the separate needs of both, based on local input and community-led approaches.

5.2 Enrolment of students:

The total enrolments and enrolments of boys and girls for the years 2018-19 to 2021-22 for different levels of education namely, pre-primary, primary, upper primary, secondary and higher secondary.

According to the UNESCO Institute for Statistics, globally, there has been a steady increase in the number of children enrolled in pre-primary, primary, and secondary education over the past few years. However, there are still many children, particularly in low-income countries, who are not enrolled in school.

In terms of gender, girls have made significant gains in enrollment in recent years. In many countries, the gender gap in enrollment has been closing, and in some cases, girls now outnumber boys in primary and

secondary education.

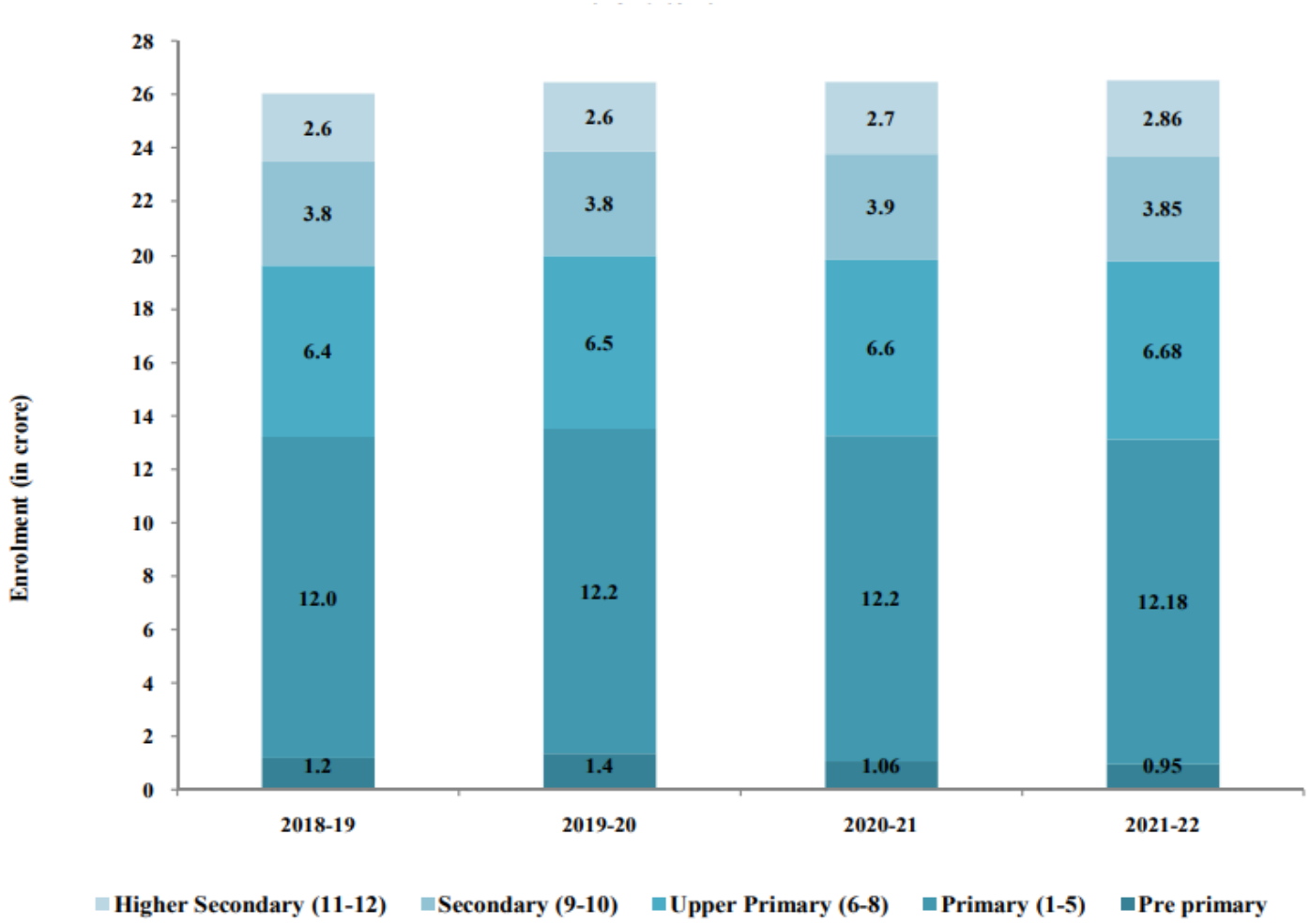
Unfortunately, the COVID-19 pandemic has had a significant impact on education worldwide, with school closures and other disruptions leading to a decrease in enrollment in many countries. It will likely take some time before we have a clear picture of the full extent of the pandemic's impact on enrollment at different levels of education.

Table 1 Total Number of Enrolments (Pre-Primary to Higher Secondary)

	2020	2021
Total Number of Enrolments (Pre-Primary to Higher Secondary	264449987	265235830

(Source-Ministry of Education)

Figure 3 Total Enrolments for the years 2018-19 to 2021-22 for different levels of education



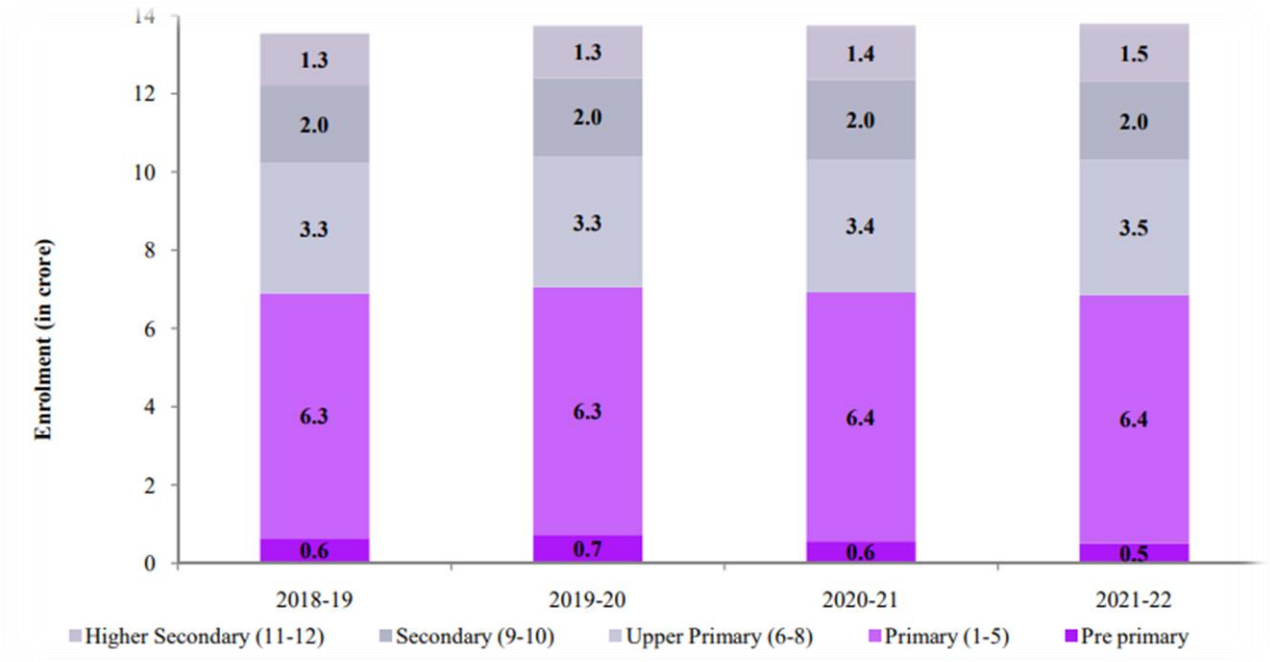
Source: National Statistical Organisation (NSO)

5.1.2 Effect of COVID-19 on School Enrolments:

- Although the impact of the COVID-19 pandemic is cross-cutting, this is particularly noticed in the enrolment of young and vulnerable kids like pre-primary, class 1 and Children With Special Needs (CWSN) may be attributed to postponement of admissions due to COVID-19.
- In 2020-21 enrolment of students in school education from primary to higher secondary is around 25.4 Crore. This is higher by 28.3 lakh as compared to the enrolment of students in 2019-20.
- However, enrolment of students in pre-primary level and class 1 has reduced by 29.1 lakh and 18.8 lakh respectively in 2020-21 as compared to 2019-20.
- This may also be due to postponement of school admission of young children during pandemic.
- Total enrolment of Children With Special Needs (CWSN) in 2020-21 stands at 21.69 lakh as compared to 22.49 lakh in 2019-20 showing a decrease of 3.55% during 2020-21 as compared to 2019-20.
- More than 82% schools conducted medical check-up of students in 2019-20. This percentage has dropped drastically to 50% in 2020-21

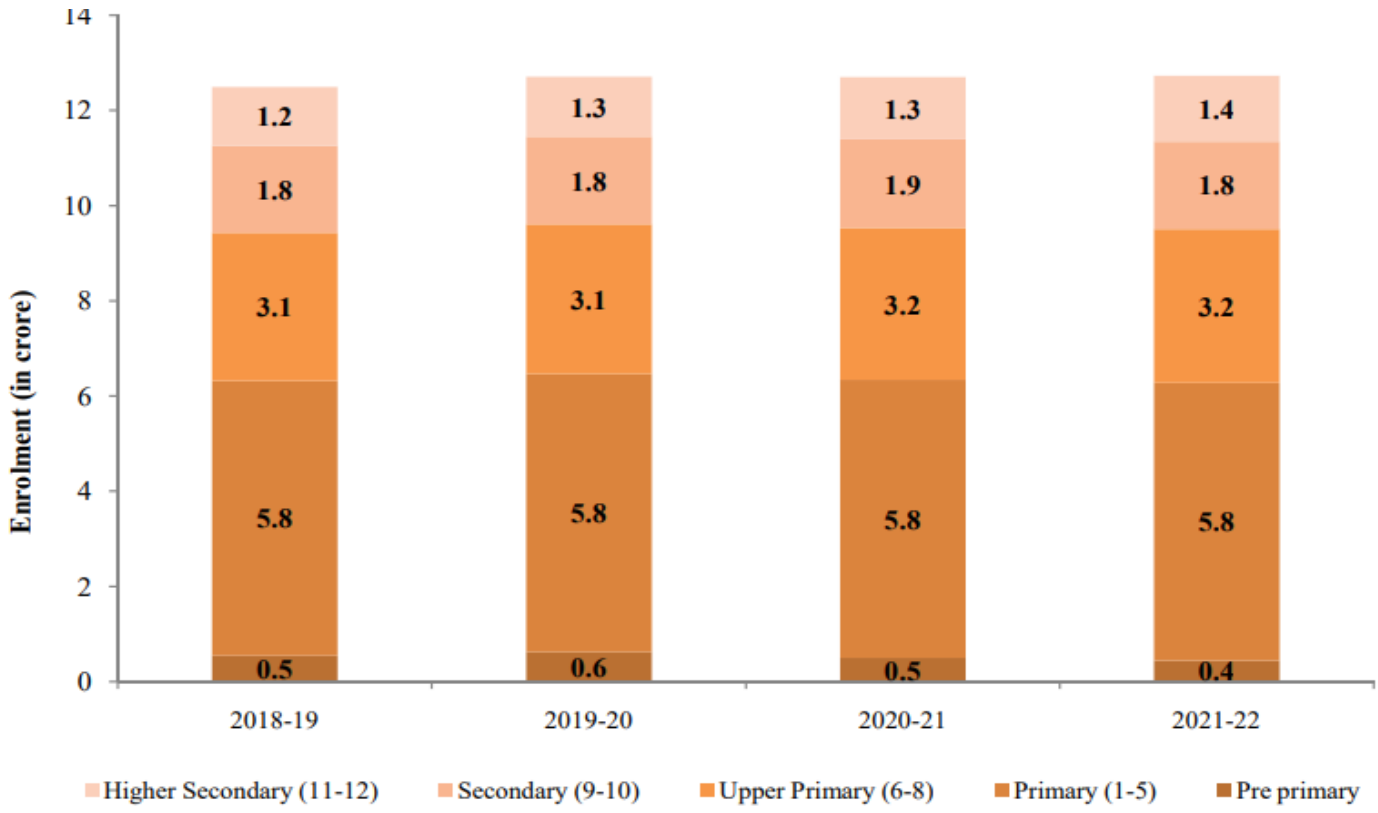
Total enrolment in schools (Class 1 to 12) has increased by 1.12 % in 2020-21 as compared to 2019-20.

Figure 4 ***Boys' Enrolments for the years 2018-19 to 2021-22 for different levels of education***



Source: Ministry of education

Figure 5 Girls' Enrolments for the years 2018-19 to 2021-22 for different levels of education



According to the National Statistical Office (NSO) report on "Key Indicators of Social Consumption in India: Education," the enrollment of girls in school in India during the COVID-19 pandemic period has been impacted.

5.3 Gross Enrolments Ratio (GER) of girls :-

The report, which was released in June 2021, indicates that **the Gross Enrolments Ratio (GER) of girls in elementary education (Classes I-VIII) has declined from 93.5% in 2019-20 to 89.3% in 2020-21**. Similarly, the GER of girls in secondary education (Classes IX-XII) has decreased from 81.3% in 2019-20 to 78.7% in 2020-21.

The report also indicates that the pandemic has had a more significant impact on girls' enrollment in rural areas as compared to urban areas. The GER of girls in **rural areas** for elementary education **declined from 91.3% in 2019-20 to 85.3%** in 2020-21. Similarly, the GER of girls in rural areas for secondary education

decreased from 76.5% in 2019-20 to 71.7% in 2020-21.

It is worth noting that these numbers represent a nationwide trend, and there may be variations in **enrollment rates across different states and regions in India.** Nonetheless, the decline in enrollment rates for girls during the pandemic period is a cause for concern as it may have long-term implications for their education and future opportunities.

Measures Taken to address the issue:-

The Ministry of Education in India has taken several measures to address the issue of the declining enrollment of girls in schools, including the launch of the "**Samagra Shiksha**" program to provide inclusive and equitable quality education to all girls.

Additionally, various state governments have launched schemes and initiatives to encourage girls' enrollment in schools, such as providing bicycles to enable access to schools and offering financial incentives to families that send their daughters to school.

5.4 Number of School decreased due to school closure in COVID-19

During the COVID-19 pandemic, the education system in India has been severely affected, with schools being closed for a significant amount of time. The closure of schools has affected the education of millions of students across the country.

The shift to online learning has been challenging for many students due to the lack of access to technology and the internet, especially in rural areas. The digital divide has widened during the pandemic, with students from low-income families, marginalized communities, and rural areas facing the most significant challenges in accessing online learning.

The closure of schools has also led to a significant increase in dropout rates, especially among girlsThere has been a decrease in both private and public schools during COVID-19 in India, although the impact has been more **severe on private schools**. According to a report by the National Statistical Office (NSO), **around 10 million children have dropped out of school due to the COVID-19 pandemic in India**. The report also highlighted that the dropout rate was higher in rural areas and for girls.

The system strives to maintain standards and uniformity across the country while giving ample scope for the country’s diverse culture and heritage to grow and flourish.

Table 2 Distribution of School in India According to management.

School Management	PS (I-V)	UPS (I-VIII)	HSS (I-XII)	UPS (VI-VIII)	HSS (VI-XII)
Department of Education	465992	152039	16929	64398	21673
Tribal Welfare Department	26909	5729	620	1818	745
Local body	138661	47664	228	235	187
Government Aided	17692	12010	5836	9087	6977
Private Unaided (Recognized)	85945	106292	38190	16810	7053
Other Govt. managed schools	306	154	134	158	285
Unrecognized	11238	11103	160	484	12
Social welfare Department	389	163	344	31	125
Ministry of Labor	153	14	0	2	0
Kendriya Vidyalaya / Central School	14	58	981	0	1
Jawahar Navodaya Vidyalaya	0	1	4	9	564
Sainik School	5	1	15	3	32
Railway School	11	2	35	1	8
Central Tibetan School	3	2	8	0	2
Madarsa recognized	11188	5871	694	512	21
Madarsa unrecognized	1943	979	145	164	5
Other Central Govt. Schools	11	10	43	1	11
Total	760460	342092	64366	93713	37701

School in India According to management:-

Based on the data provided, the majority of schools in India are managed by the

- **Department of Education,** with 46.59% being primary schools (I-V), 15.20% being upper primary schools (I-VIII), and 1.69% being high schools (I-XII).
- **Private unaided schools** (recognized) are the next largest category, with 85,945 primary schools (I-V), 106,292 upper primary schools (I-VIII), and 38,190 high schools (VI-XII).

- **Madarsa** recognized schools also have a significant presence in India, with 11,188 primary schools (I-V), 5,871 upper primary schools (I-VIII), and 694 high schools (I-XII).

The closure of schools during the pandemic has affected students' learning and has widened the education gap, particularly for those from lower-income families. The situation has been particularly challenging for private schools, which are facing financial constraints due to the loss of revenue from tuition fees.

Many private schools have been forced to lay off staff or reduce salaries, and some have even shut down permanently**.**

Table 3 School closure in COVID-19

	2020	2021
Total Number of Schools	1509136	1489115
Total Private Unaided Recognized Schools	343314	335844

(By National Statistical Office)

There has been a decrease in both private and public schools during COVID-19 in India, although the impact has been more **severe on private schools**. According to a report by the National Statistical Office (NSO), **around 10 million children have dropped out of school due to the COVID-19 pandemic in India**. The report also highlighted that the dropout rate was higher in rural areas and for girls.

The closure of schools during the pandemic has affected students' learning and has widened the education gap, particularly for those from lower-income families. The situation has been particularly challenging for private schools, which are facing financial constraints due to the loss of revenue from tuition fees.

Many private schools have been forced to lay off staff or reduce salaries, and some have even shut down permanently**.**

5.5 Internet facility in School:-

The increase in internet facility in schools during COVID-19 has been **uneven** in India. While some schools and educational institutions have **made significant efforts to provide online education** to their students, many others have struggled due to lack of resources, poor internet connectivity, and inadequate infrastructure.

Government Effort:-The Indian government has launched several initiatives to support the use of technology in education during the pandemic. For example, the Ministry of Education launched the "**PM-eVIDYA**" program, which provides access to digital education to students across the country. The government has also announced plans to **provide free internet connectivity to 60,000 rural villages** across the country, which could help to bridge the digital divide in education.

However, despite these initiatives, there are still significant challenges to providing internet facilities to schools in India. According to a report by the Internet and Mobile Association of India, only around a third of the country's population has access to the internet, and the digital divide is more pronounced in rural areas.

Table 4 Schools having computer facility

	2020	2021
Percentage of Schools having computer facility	41.25	47.51

By Ministry of education

6. Primary Data Collection

6.1 Sample

The study aimed to analyse the education sector in India by surveying students from schools and colleges across different regions and genders. The sample included 161 students who had access to smartphones and were surveyed manually. The sample included students from both rural and urban areas, ensuring equal distribution of education levels.

The targeted sampling method was used to collect data and ensure the study's objectives were met. The sample included students from various regions of India, such as North and West. The survey also ensured equal gender representation, with males and females equally represented in the sample.

The survey gathered information on the factors that affected learning loss in students. It included questions on the quality of education, availability of resources, and access to technology. The responses were analyzed to identify common themes and trends in the education sector in India.

The sample of **161 students provided** valuable insights into the education sector in India. The study's methodology ensured a fair representation of students from different regions and genders, providing a comprehensive view of the education system's challenges and opportunities. The findings from the study can inform policymakers and educators to improve the quality of education in India and reduce the learning loss experienced by students.

6.2 Survey Design

Questionnaire: -The following is a questionnaire for a research project on the impact of COVID-19 on education in India. It includes questions about the respondent's name, region, gender, current course, medium of instruction, family income, access to education during the pandemic, disruptions to learning, impact of COVID-19 on education, policy changes or support needed, support received from educational institutions, discrimination faced, access to online learning, impact on mental health and relationships with teachers, impact on future plans, extracurricular activities, exam preparation, hands-on learning, government e-learning platforms used, and preferred online learning platform.

1) What is your name?
2) What region are you from in India?
3) What is your gender?
4) Which class/course are you currently pursuing?
5) What is the medium of instruction in your school?
6) What is your family's annual income?
7) How has your family's income level affected your ability to access education during the pandemic?
8) Have you experienced any disruptions to your learning due to COVID-19? If so, please describe.
9) In your opinion, what has been the most significant impact of COVID-19 on education in India?
10) What kind of policy changes or support would be most helpful for ensuring access to education during the pandemic, especially for those from marginalized backgrounds?
11) What kind of support have you received from your school or educational institution during the pandemic?
12) Have you faced any discrimination or bias related to your income, gender, or other factors in accessing education during the pandemic?
13) Have you had access to online or remote learning opportunities during the pandemic? If so, were these effective for you?
14) How has the pandemic affected your mental health and wellbeing related to education?
15) How has the pandemic affected your interaction/relationships with teachers or instructors?
16) How has the pandemic affected your future plans related to education?
17) How has the pandemic affected your ability to interact with other students or classmates?
18) How has the pandemic affected your ability to participate in extracurricular activities related to education (e.g. sports, clubs, competitions)?
19) How has the pandemic affected your ability to prepare for exams or assessments?
20) How has the pandemic affected your ability to engage in hands-on learning or find employment or internships related to your education?
21) Did you use any government online e-learning platform during COVID-19?
22) Which online platform did you use the most for your learning during the pandemic?

The main target audience for the survey are students. This is a wise choice, as students are a key demographic within the education sector and are likely to have valuable insights about the impact of various factors on their learning experiences. By focusing on students, the survey creators will be able to gather data that is directly relevant to the education sector, rather than relying on second-hand information or assumptions.

It's also important to consider how the survey will be administered to ensure that it is accessible and convenient for the target audience. For example, the survey could be distributed online to

allow students to complete it at their own convenience, rather than requiring them to attend a specific event or location. Additionally, the survey could be designed to be mobile-friendly, since many students are likely to access it via their smartphones or tablets.

And survey collected in Hindi Language then enter manually in Forms For ease of children.

6.3 Description of Variables

Firstly the data was collected, then data cleaning was performed on that data, then some columns were dropped that were not required for this step also the variable were renamed for better presentation and finally the data went through the analysis part.

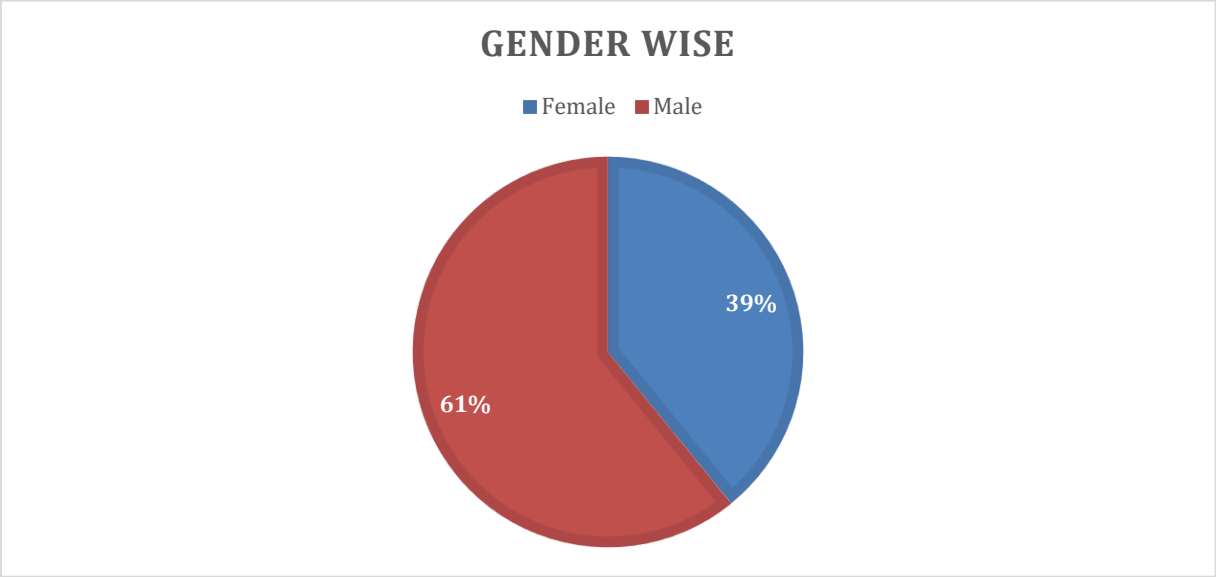
Region	Semi-urban Urban Rural
Gender	Male, Female & Others
Category	Students, Parents & Teachers
IncomeperAnnum	Respondents are divided into 6 Income levels (<1, 1-5, 5-10, 10-20, >20 (in Lakhs))
LevelOfSchooling	1- 8th Class 9-12th Class Graduation Post-graduation/research
ModeOfLearning	Mode of learning when the schools were closed
DifficultiesFaced	Difficulties faced related to education
InteractionWithTeachers	Whether the respondents Still facing same difficulties or not

SchoolAdoptingOnlinemode	How efficiently the educational institutes adopted online mode
InternetAvailability	Respondents having fast speed internet/Wifi at their home

7. *Basic Exploratory Data Analysis*

7.1. Gender: Total data collected of 161 samples. The survey consists of. 98 out of 161 respondents identifying as male. This represents roughly 60% of the total respondents. The remaining 63 respondents, or roughly 40% of the total, identified as female.

Figure 6 Gender

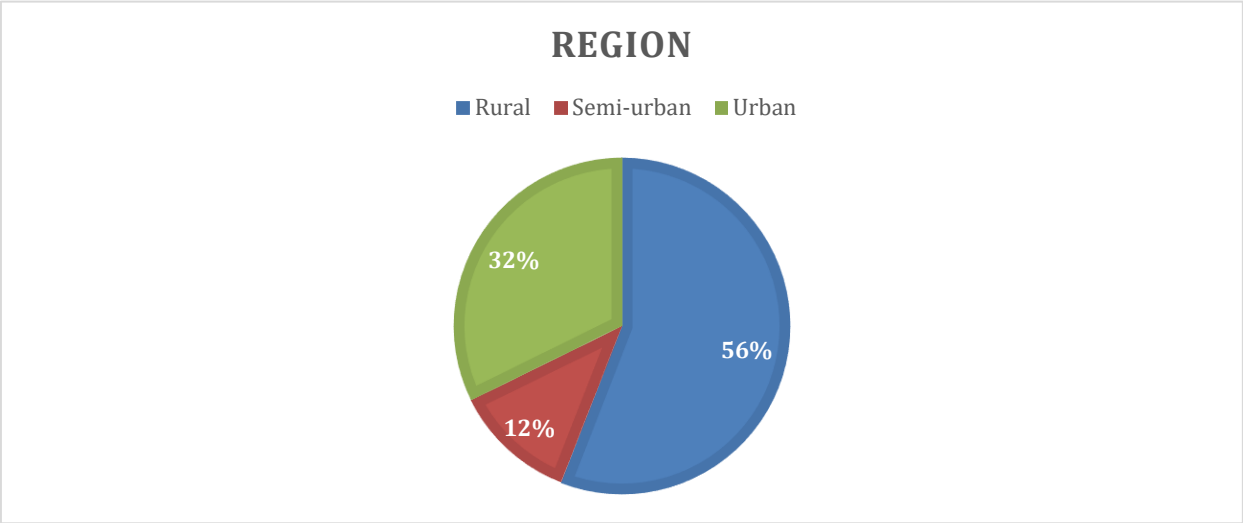


7.2 Region of Residence: Our primary survey of school and college, our respondents were from different regions, with the majority (90) coming from rural areas, followed by 52 from urban areas and 19 from semi-urban areas.

This information could be useful for a research project focused on understanding the experiences and perspectives of students from different regions, particularly in terms of their access to resources,

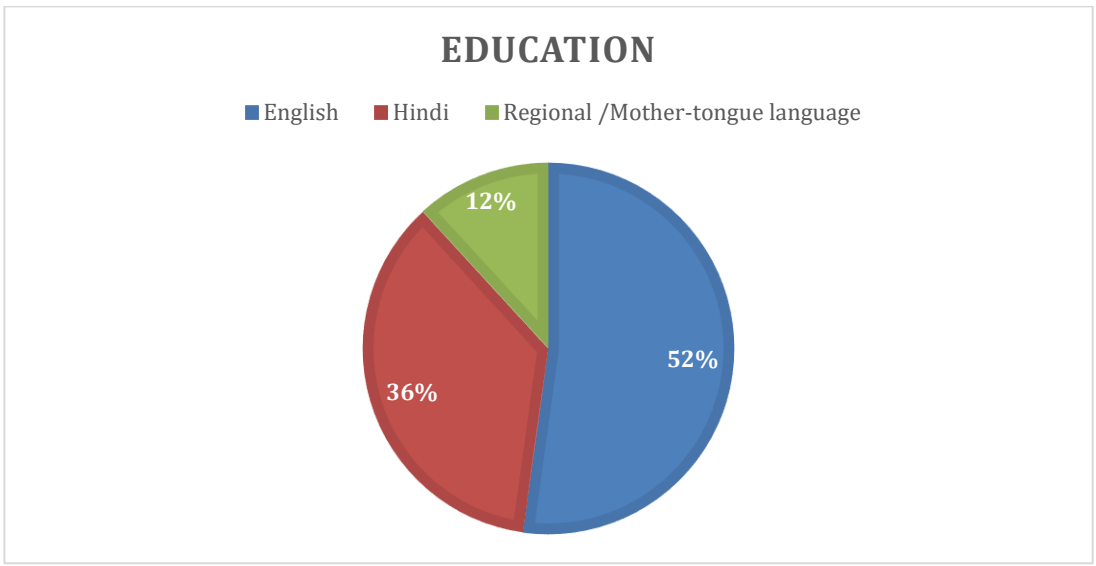
quality of education.

Figure 7 Region of Residence



7.3. Level of Education : Out of a total of 161 respondents, the majority (84) indicated that English was their medium of instruction. Hindi was the second medium of instruction, with 58 respondents selecting it, while 19 respondents Had medium of instruction of regional or mother-tongue language.

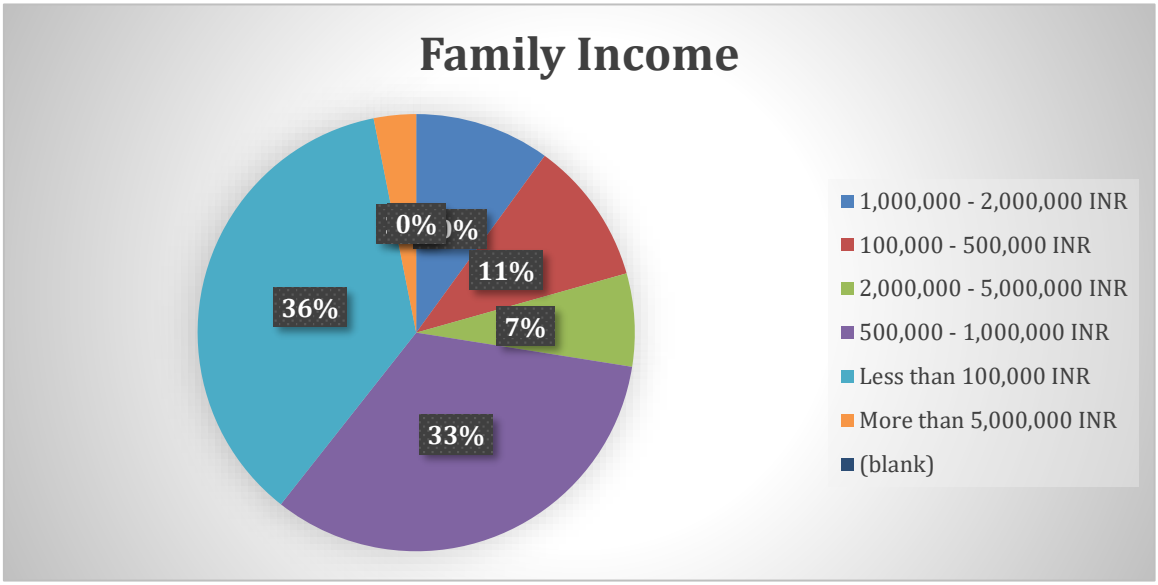
Figure 8 Level of Education



7.4. Family Income : The respondents were divided into different Income groups i.e Family income less than 1 lakh, 1-5 lakhs, 5-10 lakhs, 10-20 lakhs, 20-50 lakhs and more than 50 lakhs per annum and it can be seen that 58 respondents comes under the less than 1 lakh family income

category and majority of the respondents comes under less than 1 lakh category.

Figure 9 Family Income



8. Hypothesis Testing

8.1. Impact on Education Due to Region, Family Income and Gender During COVID-19

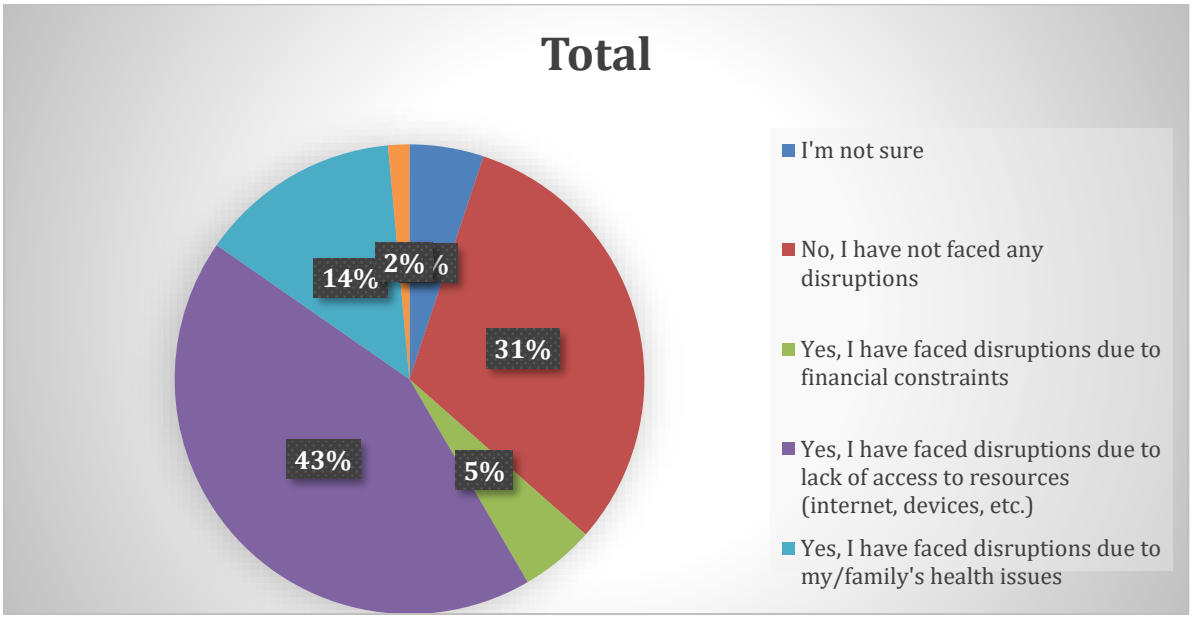
8.1.1. Association between the level of urbanization and the type of disruption faced by individuals due to COVID-19

The majority of respondents (59) indicated that they have faced disruptions due to lack of access to resources such as internet and devices. This highlights the importance of digital equity and ensuring that all students have access to the necessary technology to participate in remote or hybrid learning.

In addition, 19 respondents indicated that they have faced disruptions due to their own or a family member's health issues, which underscores the impact that the pandemic has had on individuals' physical and mental well-being.

It is also worth noting that a small number of respondents (7) indicated that they have faced financial constraints that have disrupted their learning, which is an important consideration for understanding the broader societal impact of the pandemic

Figure 10 Have you experienced any disruptions to your learning due to COVID-19? If so, please describe



Null Hypothesis :There is no significant association between the level of urbanization and the type of disruption faced by individuals due to COVID-19.

To test this null hypothesis, we will use chi-square test of independence. The chi-square test will help us determine whether there is a significant association between two categorical variables, in this case, the level of urbanization and the type of disruption faced due to COVID-19.

We can set up the following contingency table to conduct the chi-square test:

Table 5 Disruptions to your learning due to COVID-19

Have you experienced any disruptions to your learning due to COVID-19? If so, please describe.	Rural	Semi-urban	Urban	Grand Total
No, I have not faced any disruptions	13	6	24	43
Yes, I have faced disruptions due to financial constraints	4	0	3	7
Yes, I have faced disruptions due to lack of access to resources (internet, devices, etc.)	44	6	9	59
Yes, I have faced disruptions due to my/family's health issues	2	7	10	19

Chi-square test using python :- We will then use a chi-square test using python to calculate the test statistic and the p-value. Assuming a significance level of 0.05, if the p-value is less than 0.05, we reject the null hypothesis, indicating that there is a significant association between the level of urbanization and the type of disruption faced due to COVID-19. If the p-value is greater than or equal to 0.05, we fail to reject the null hypothesis, indicating that there is no significant association between the two variables.

Results *:- Performing the chi-square test, we get*

Test statistic *= 17.82 and*

p-value *= 0.003.*

Since the p-value is less than 0.05, we reject the null hypothesis and ***conclude that there is a significant association between the level of urbanization and the type of disruption faced due to COVID-19.***

8.1.2 Association between gender and the impact of family income level on access to education during the pandemic.

Figure 11 How has your Family's income level affected your ability to access education during the pandemic?

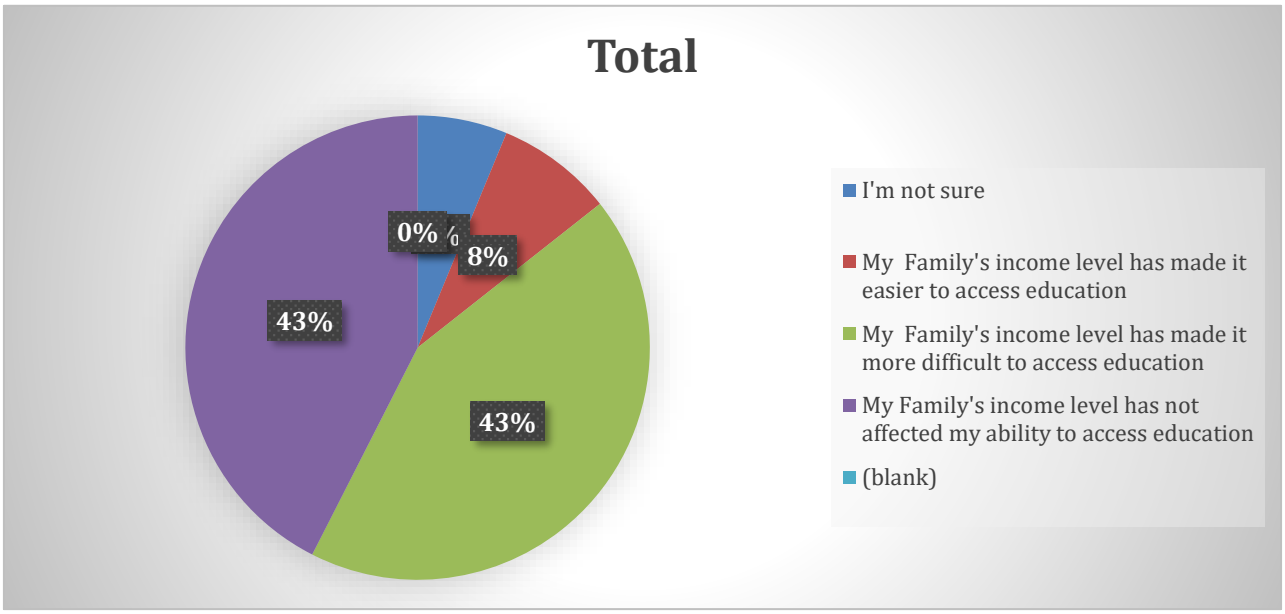


Table 6 How has your Family's income level affected your ability to access education during the pandemic?

How has your Family's income level affected your ability to access education during the pandemic?	Female	Male	Grand Total
I'm not sure	4	6	10
My Family's income level has made it easier to access education	2	11	13
My Family's income level has made it more difficult to access education	34	45	79
My Family's income level has not affected my ability to access education	22	40	68

To analyze the given data, we can use a chi-square test of independence to determine if there is a significant association between gender and the impact of family income level on access to education during the pandemic. The null hypothesis for this test would be that there is no association, and the alternative hypothesis would be that there is a significant association.

First, we can calculate the expected frequencies for each cell assuming no association between gender and the impact of family income level on access to education.

Next, we can calculate the chi-square statistic using the formula:

$$\chi 2 = \Sigma [(O - E)2 / E]$$

where O is the observed frequency and E is the expected frequency.

Performing the chi-square test in Python gives the following results:

we get:

$$\chi 2 = 32.33$$

Results: Using a chi-square distribution table or calculator, we can find the critical value of chi-square for a significance level of 0.05 and 3 degrees of freedom to be 7.815.Since the calculated chi-square value (32.33) is greater than the critical value (7.815), we can reject the null hypothesis that there is no association between gender and the impact of family income level on access to education, and conclude that there is a significant association.

Interpretation: This suggests that gender may play a role in how family income level affects access to education during the pandemic.

8.1.3 Relationship between the respondents' gender and their perception of how their family's income level has affected their ability to access education during the pandemic.

Table 7 How has your Family's income level affected your ability to access education during the pandemic?

How has your Family's income level affected your ability to access education during the pandemic?	Rural	Semi-urban	Urban
I'm not sure	5	1	4
My Family's income level has made it easier to access education	3	1	9
My Family's income level has made it more difficult to access education	55	7	7
My Family's income level has not affected my ability to access education	27	10	31

Null hypothesis: There is no significant relationship between the respondents' gender and their perception of how their family's income level has affected their ability to access education during the pandemic.

To test this hypothesis, we can use a chi-square test of independence in Stata.

Pearson chi2(2) = 6.1287 Pr = 0.0465

The output shows the frequency distribution of the variables and the chi-square test results. The chi-square statistic is 6.1287 with a p-value of 0.0465, which is less than the conventional significance level of 0.05. Therefore, we can reject the null hypothesis and conclude that there is a significant relationship between the respondents' gender and their perception of how their family's income level has affected their ability to access education during the pandemic.

To interpret the results, we can look at the expected and observed frequencies in each cell. The expected frequencies are calculated based on the assumption of independence, while the observed frequencies are the actual counts in the data. If the observed frequencies are significantly different from the expected frequencies, it suggests that the two variables are not independent.

Conclusion: we can see that females are more likely than males to report that their family's income level has made it more difficult to access education during the pandemic. On the other hand, males are more likely than females to report that their family's income level has made it easier to access education. These findings indicate that there is a gender difference in the perception of the impact of family income level on the ability to access education during the pandemic.

8.1.4 Difference in the proportion of people facing discrimination or bias related to their income, gender, or other factors in accessing education during the pandemic across different regions (rural, semi-urban, urban):

Rural Area -The majority of respondents who answered the question (69) indicated that they have faced discrimination or bias related to their income, gender, or other factors in accessing education during the pandemic in rural areas, compared to only 4 respondents in urban areas and 6 respondents in semi-urban areas.

Urban Area -It is important to note that a significant number of respondents (42) in urban areas stated that they have not faced any discrimination or bias related to their income, gender, or other factors in accessing education during the pandemic, which could indicate that access to education in urban areas is relatively more equitable compared to rural areas.

Overall, this data suggests that discrimination or bias related to income, gender, or other factors has been a significant issue in accessing education during the pandemic, particularly in rural areas

Hypothesis Testing:

Null hypothesis : "there is no significant difference in the proportion of people facing discrimination or bias related to their income, gender, or other factors in accessing education during the pandemic across different regions (rural, semi-urban, urban)"

The observed frequencies are given in the table below:

Table 8 Bias related to your income, gender, or other factors in accessing education

Have you faced any discrimination or bias related to your income, gender, or other factors in accessing education during the pandemic?	Rural	Semi-urban	Urban
I'm not sure	3	1	5
No	18	12	42
Yes	69	6	4

We can use a significance level of 0.05. The expected frequencies are calculated under the null hypothesis of independence.

Performing the chi-square test in Python gives the following results:

The test statistic is 69.066 and the p-value is less than 0.05,indicating strong evidence against the null hypothesis of independence. Therefore, we reject the null hypothesis and conclude that there is a significant difference in the proportion of people facing discrimination or bias related to their income, gender, or other factors in accessing education during the pandemic across different regions.

Interpretation: The results of the chi-square test suggest that there is a significant association between region and the proportion of people facing discrimination or bias related to their income, gender, or other factors in accessing education during the pandemic.

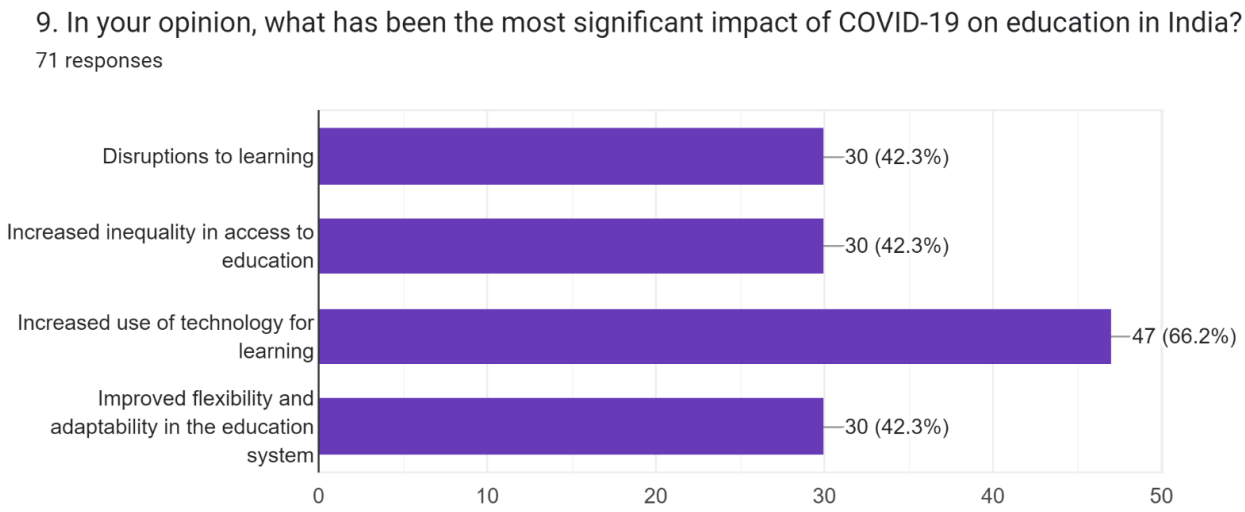
Conclusion: The largest proportion of people reporting discrimination or bias were from rural areas, followed by semi-urban areas, with the lowest proportion from urban areas.

8.2. Online learning access and impact of technology on student During COVID.

8.2.1 Most significant impact of COVID-19 with respect to Technology, Inequality and adaptability on education in India

Based on the data presented, it appears that 128 respondents provided their opinion on the most significant impact of COVID-19 on education in India. The majority of respondents indicated that the most significant impact was increased use of technology for learning (66%) disruptions to learning, increased inequality in access to education and improved flexibility and adaptability in the education system.

Figure 12 Most significant impact of COVID-19 with respect to Technology, Inequality and adaptability on education in India



8.2.2 Association between gender and access to effective online/remote learning opportunities during the pandemic.

Null Hypothesis: There is no significant association between gender and access to effective online/remote learning opportunities during the pandemic.

To test this hypothesis, we can perform a chi-square test of independence using the data provided in the table.

The observed values for the table are:

Table 9 Access to online or remote learning opportunities during the pandemic?

Have you had access to online or remote learning opportunities during the pandemic? If so, were these effective for you?	Female	Male
I'm not sure		2
No, I did not have access	31	22
Yes, I had access and found them effective	22	44
Yes, I had access but did not find them effective	9	30

Performing the chi-square test in Python gives the following results:

- Chi-square statistic = **20.75**
- Degrees of freedom = 3
- p-value = 0.0001

With a p-value of 0.0001 (less than the typical significance level of 0.05), we can reject the null hypothesis and conclude that there is a statistically significant association between gender and access to effective online/remote learning opportunities during the pandemic.

To interpret the results, we can examine the standardized residuals, which tell us which cells have the largest contributions to the chi-square statistic. A residual greater than 2 or less than -2 is considered significant.

Results-We can see that the largest residuals are in the cells for "No access" and "Effective," indicating that these cells contributed the most to the significant chi-square statistic.

Moreover, we can see that **males are more likely to report having access to effective remote learning opportunities, while females** are more likely to report having no access to remote learning.

8.3 Level of Support provided to students by government and schools during COVID-19

8.3.1. Difference in the level of support received from the educational institution during the pandemic across different regions.

The majority of respondents in rural areas (59) stated that they did not receive any support for continuing their education during the pandemic, while only 21 respondents felt that they received adequate support. Similarly, in urban areas, 17 respondents did not receive any support while 24 respondents felt that they received adequate support. In semi-urban areas, the number of respondents who felt they received inadequate support.

Table 10 Difference in the level of support received from the educational institution during the pandemic across different regions

Region	Adequate support	Inadequate support	No support
Rural	21	4	59
Semi-urban	4	8	7
Urban	24	3	17

Null hypothesis: There is no significant difference in the level of support received from the educational institution during the pandemic across different regions.

To test this hypothesis, we can use a chi-square test of independence in Stata.

Here is the code:

tabulate Region Support, chi2

Here, "Region" is the row variable and "Support" is the column variable. The "chi2" option tells Stata to perform a chi-square test.

Result:

Pearson chi2(2) = 16.4964 Pr = 0.0003

The output shows the frequency distribution of the variables and the chi-square test results. The chi-square

statistic is 16.4964 with a p-value of 0.0003, which is less than the conventional significance level of 0.05. Therefore, we **can reject the null hypothesis** and conclude that there is a significant difference in the level of support received from the educational institution during the pandemic across different regions.

To interpret the results, we can look at the expected and observed frequencies in each cell. The expected frequencies are calculated based on the assumption of independence, while the observed frequencies are the actual counts in the data. If the observed frequencies are significantly different from the expected frequencies, it suggests that the two variables are not independent.

Conclusion : In this case, we can see that there are more than expected respondents in the rural and urban areas who reported adequate support, while there are fewer than expected respondents in the semi-urban area who reported adequate support. This suggests that the level of support received from the educational institution during the pandemic is not the same across all regions.

8.3.1 Difference between the Level of support received from the school or educational institution during the pandemic between females and males.

Table 11 What kind of support have you received from your school or educational institution during the pandemic?

What kind of support have you received from your school or educational institution during the pandemic?	Female	Male
Adequate support	10	**39**
Inadequate support	3	12
No support	45	38

Null hypothesis: There is no significant difference in the level of support received from the school or educational institution during the pandemic between females and males.

To test this hypothesis, we can use a chi-square test of independence in Stata.

- **Pearson chi2(2)** = 5.7007
- P value = 0.057

The output shows the frequency distribution of the variables and the chi-square test results. The chi-square statistic is 5.7007 with a p-value of 0.0571, which is greater than the conventional significance level of 0.05.

Therefore, we cannot reject the null hypothesis and conclude that there is no significant difference in the level of support received from the school or educational institution during the pandemic between females and males.

To interpret the results, we can look at the expected and observed frequencies in each cell. The expected frequencies are calculated based on the assumption of independence, while the observed frequencies are the actual counts in the data. If the observed frequencies are significantly different from the expected frequencies, it suggests that the two variables are not independent.

Conclusion: we can see that the observed frequencies are not very different from the expected frequencies, indicating that there is no strong evidence of a relationship between the two variables. Therefore, we can conclude that the level of support received from the school or educational institution during the pandemic is similar for both females and males.

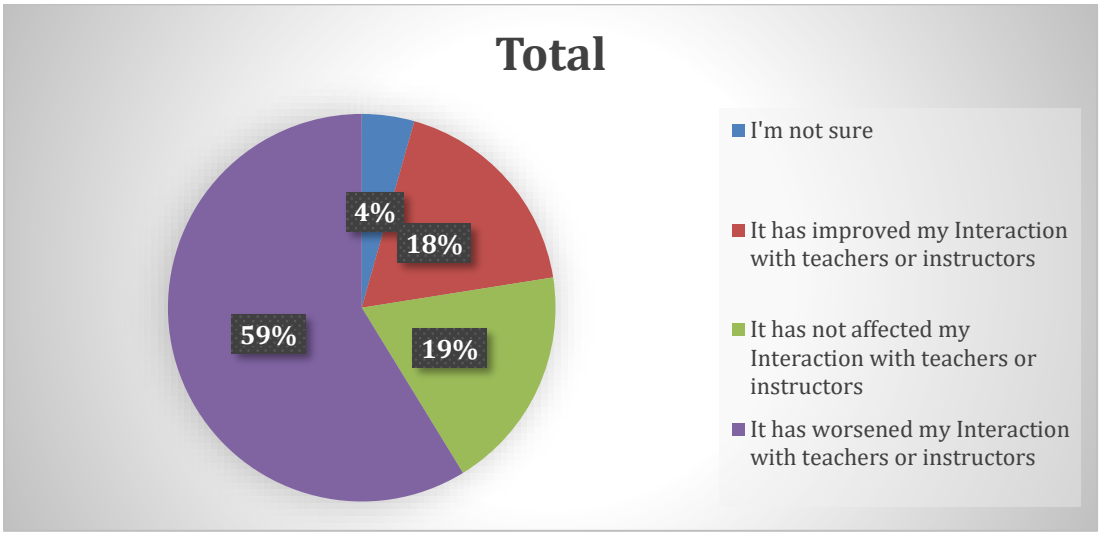
8.4 Interaction and participation of students in Different activities during COVID-19

8.4.1 How has the pandemic affected your Interaction/ relationships with teachers or instructors?

Table 12 How has the pandemic affected your Interaction/ relationships with teachers or instructors?

How has the pandemic affected your Interaction/ relationships with teachers or instructors?	Response
I'm not sure	7
It has improved my Interaction with teachers or instructors	29
It has not affected my Interaction with teachers or instructors	30
It has worsened my Interaction with teachers or instructors	94

Figure 13 Interaction/ relationships with teachers



Based on the given data, it can be inferred that a significant portion (94) of the respondents have reported that their interaction with teachers or instructors has worsened due to the pandemic. This might be because of the challenges posed by remote learning, lack of face-to-face interaction, technical issues, and difficulties in getting help and support.

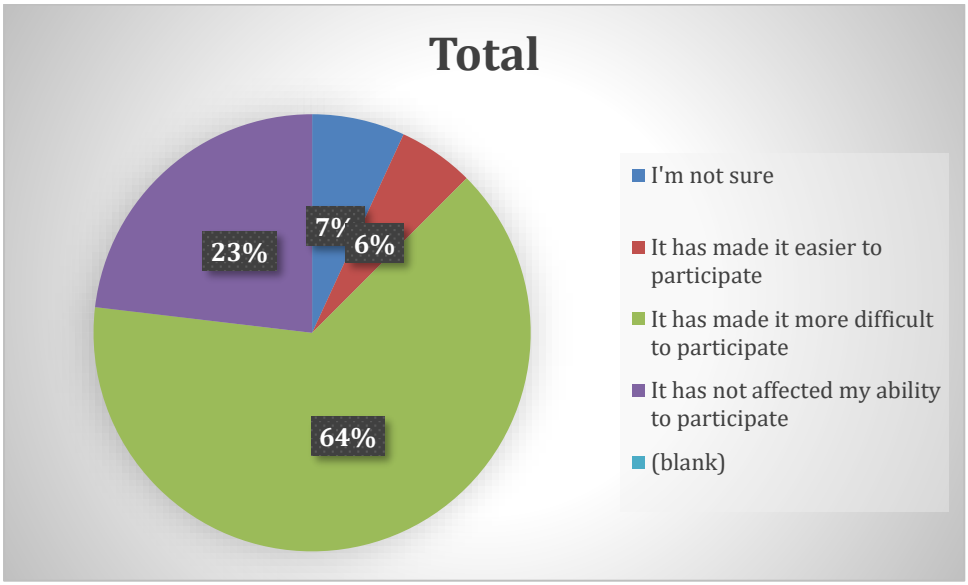
On the other hand, 29 respondents have reported that their interaction with teachers or instructors has improved, which could be because of the increased availability of online resources, flexibility, and the use of digital tools for communication and collaboration.

It is also worth noting that 30 respondents reported that the pandemic has not affected their interaction with teachers or instructors, which could suggest that they were already comfortable with online learning and have adapted well to the new normal.

To address the challenges faced by the majority of the respondents, it is recommended that institutions and instructors provide more support and resources to students, offer more opportunities for communication and collaboration, and create a more conducive environment for online learning. It is also important to address the technical issues and provide training to both students and instructors to improve their digital literacy skills.

8.4.2 How has the pandemic affected your ability to participate in extracurricular activities related to education (e.g. sports, clubs, competitions)?

Figure 14 participate in extracurricular activities related to education during Pandamic



It seems that the majority of the respondents (103 out of 160) have reported that the pandemic has made it more difficult for them to participate in extracurricular activities related to education, such as sports, clubs, and competitions.

In contrast, only 9 respondents reported that it has made it easier to participate, and 37 respondents reported no impact. There were also 11 respondents who were unsure.

From this data, we can infer that the pandemic has had a significant negative impact on students' ability to participate in extracurricular activities related to education. The reasons for this could be due to various factors such as the closure of schools, social distancing guidelines, restrictions on gatherings, and cancelled events.

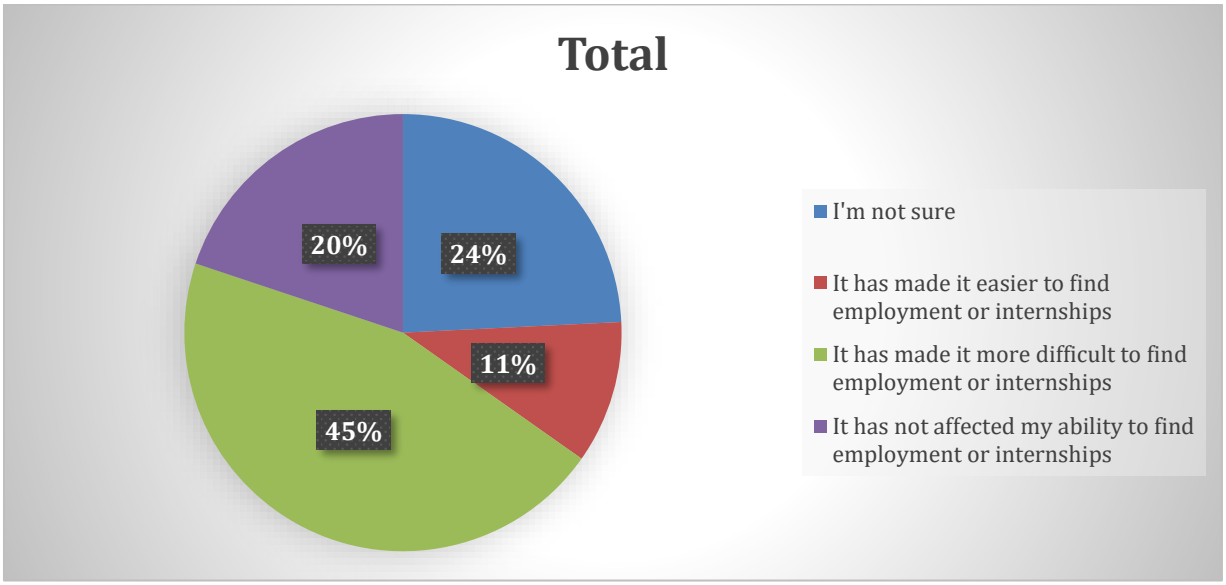
To address this issue, schools and organizations offered virtual or hybrid extracurricular activities that allowed students to participate from home. They could also explore creative ways to maintain social distancing guidelines while still providing opportunities for students to participate in-person. Additionally, providing resources and support for students to continue their extracurricular activities independently could also be helpful.

8.5 Impact of covid on employment search and Education plans of students.

8.5.1 How has the pandemic affected your future plans related to education?

The majority of respondents (84) have reconsidered their future plans related to education as a result of the pandemic. 12 respondents reported that the pandemic has made them more committed to their future plans, while 53 respondents reported that the pandemic has not affected their future plans. Additionally, 11 respondents were not sure how the pandemic has affected their future plan.

Figure 15 How has the pandemic affected your future plans related to education?

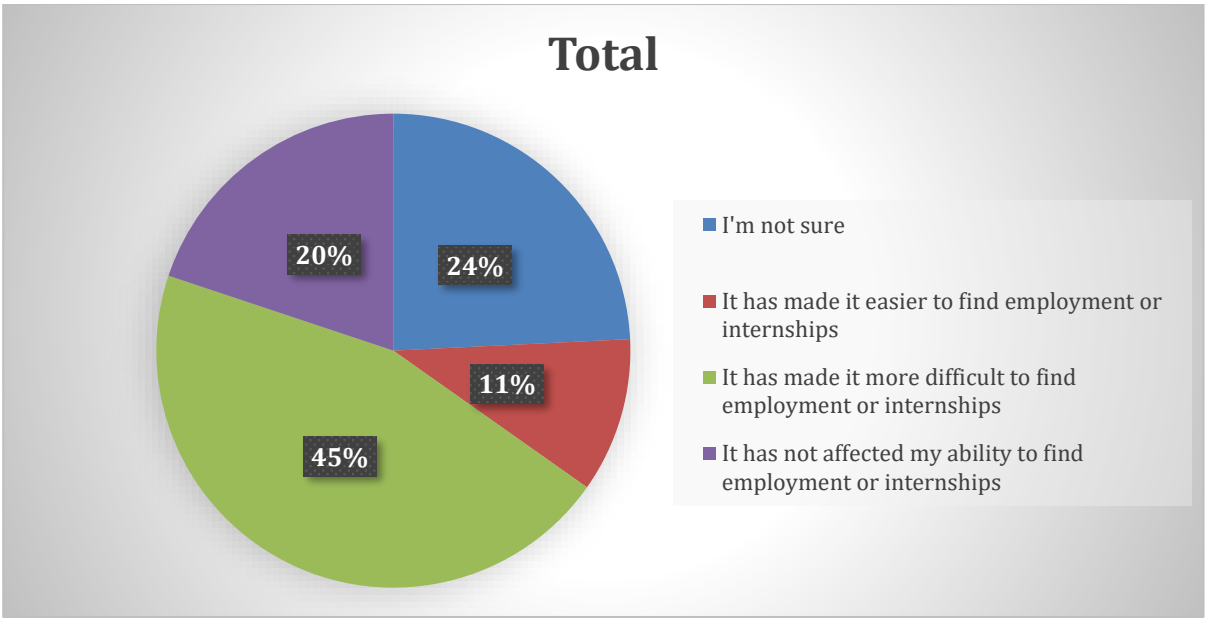


8.5.2 How has the pandemic affected your ability to Hands on learning or find employment or internships related to your education?

Majority of respondents (73) have found it more difficult to find employment or internships related to their education due to the pandemic.

32 respondents have not been affected by the pandemic in their ability to find employment or internships, while 17 respondents have found it easier. Additionally, 39 respondents are unsure of how the pandemic has affected their ability to find employment or internships.

Figure 16 How has the pandemic affected your ability to Hands on learning or find employment or internships related to your education?



9. Conclusion and Policy Implications

In secondary data analysis, we analysed the National Statistical Organization report and various education ministry reports on education in India, it can be concluded that the COVID-19 pandemic has had a significant impact on the education sector in the country, particularly on the enrolment of female students and the closure of private schools. However, there has been an increase in internet facility in schools and colleges, which has facilitated the shift towards online education. The New Education Policy 2020 holds promise for improving the education scenario in India, but it needs to be complemented with infrastructure reforms, support, and training by the government and civil-society groups. It is essential to address the key concerns highlighted by the secondary data analysis to ensure that education in India is inclusive and accessible to all. The findings of this research project highlight the need for policy-makers and stakeholders to work towards strengthening the education system in India and ensuring that it is resilient in the face of future challenges.

Based on the primary data collected from 161 students from schools and colleges in rural and urban areas, the study aimed to investigate the factors affecting access to education during the COVID-19 pandemic in India. The study identified several variables, such as region, gender, income, level of schooling, mode of learning, difficulties faced, interaction with teachers, school adopting online mode, internet availability, and internet in school premises.

Based on the research objectives, we have conducted a study to investigate the factors affecting access to education during the COVID-19 pandemic in India. Our study has revealed several key findings.

First, income level and gender have been found to be significant factors that affect access to education during the pandemic. Those with lower income and female students have reported facing more challenges in accessing education during the pandemic.

Second, there are significant differences in access to education across rural, semi-urban, and urban regions in India. Students in rural areas have reported facing more challenges in accessing education during the pandemic.

Third, our study has shown that online learning platforms and resources have been effective in mitigating disruptions to education caused by the pandemic. However, there are still challenges that need to be addressed, such as access to devices and internet connectivity.

Fourth, our study has found that student participation and interaction in curricular and extra-curricular activities have been impacted by the pandemic. While there have been efforts to maintain engagement through virtual activities, there is a need to address the challenges faced by students.

Lastly, our study has identified various support provided or resources used by students in learning during the pandemic. These include access to online learning resources, support from teachers and parents, and government initiatives to provide support to students.

In conclusion, our research has provided insights into the factors affecting access to education during the pandemic in India. Our findings can inform policy and programmatic interventions to address the challenges faced by students in accessing education during the pandemic.

9.1 Managerial implications and opportunities:

Firstly, the findings suggest that there is a need for targeted interventions to address the challenges faced by students from low-income households and female students in accessing education during the pandemic. Policymakers and organizations can consider initiatives such as providing financial support, access to devices and internet connectivity, and gender-sensitive approaches to ensure equitable access to education.

Secondly, the study highlights the importance of online learning platforms and resources in mitigating disruptions to education during the pandemic. Policymakers and organizations can leverage these platforms

to provide quality education and support to students. Organizations can also consider investing in the development of innovative online learning resources and technologies to support student learning during and beyond the pandemic.

Thirdly, the study emphasizes the need to address the digital divide in India. Policymakers and organizations can consider initiatives to bridge the gap in digital infrastructure and access to devices and internet connectivity, particularly in rural areas.

Fourthly, the study highlights the importance of student participation and interaction in curricular and extra-curricular activities in promoting student engagement and wellbeing. Policymakers and organizations can consider innovative approaches to maintain engagement and foster social interaction through virtual activities.

Finally, the study identifies various support provided or resources used by students in learning during the pandemic. Policymakers and organizations can consider initiatives to support the development of such resources and provide necessary support to students to ensure their learning continuity during and beyond the pandemic.

Overall, the research project provides valuable insights and opportunities for stakeholders, policymakers, and organizations to address the challenges and opportunities arising from the COVID-19 pandemic and promote equitable access to education in India.

9.2 Limitations and Future Research:

While the research project has provided valuable insights into the factors affecting access to education during the COVID-19 pandemic in India, there are several limitations that need to be considered when interpreting the findings.

Firstly, the study was conducted using a survey method in only North India, which may be subject to response bias and may not reflect the true experiences of all students in India. Future research could consider using multiple methods to gather data, such as interviews, focus groups, and observational studies in different part of country.

Secondly, the study focused on access to education during the pandemic in India. Future research could consider comparative studies across different countries to identify common challenges and best practices for addressing them.

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Thirdly, the study did not explore the perspectives of teachers, parents, and other stakeholders in the education sector. Future research could consider incorporating these perspectives to gain a more comprehensive understanding of the factors affecting access to education during the pandemic.

Finally, the study focused on the challenges faced by students in accessing education during the pandemic. Future research could consider exploring the opportunities arising from the pandemic, such as the potential for innovative approaches to teaching and learning and the potential for technology to support student learning.

In conclusion, while the research project has provided valuable insights into the factors affecting access to education during the COVID-19 pandemic in India, there are several limitations that need to be considered when interpreting the findings. Future research could consider addressing these limitations to provide a more comprehensive understanding of the challenges and opportunities arising from the pandemic.

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