



EDUCATION VS UNEMPLOYMENT, LAYOFF DURING COVID-19

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Abstract: "Education is the passport to the future, for tomorrow belongs to those who prepare for it today."
—Malcolm X.

Since independence, the Government of India has been putting numerous efforts into educating the workforce of the country keeping the above thought in mind. The policymakers of India had a belief that by educating the large workforce of the country, they not only can solve the problems of poverty and unemployment but also can reap demographic dividend on time, as it has been witnessed that there exist positive returns on education.

But the speedy development of not only India but the whole world was shaken by the upcoming of covid-19 pandemic majorly from the beginning of the year 2020 till the end of 2021. This pandemic laid off many and others faced cutoffs in their salaries. Some businesses had to be shut down while others flourished, especially those involved in health and pharmaceuticals related activities.

Index Terms - Education, unemployment, covid-19, employability.

I. INTRODUCTION

The COVID-19 pandemic has had a significant impact on the global economy, causing widespread job losses and unemployment. However, it is difficult to generalize whether COVID-19 made educated or uneducated people more unemployed, as the pandemic's impact on employment has varied across industries, regions, sectors of employment, nature of the job in which the person was engaged and the gender of the worker. So, an interesting question emerges does education provides some type of guarantee against unemployment?

In some industries, such as hospitality and travel, which were hard hit by the pandemic, both educated and uneducated workers may have experienced significant job losses. However, in other sectors such as healthcare and technology, there may have been a greater demand for skilled and educated workers.

Furthermore, the pandemic has also highlighted existing inequalities in the labor market. Workers in lower-wage jobs and those with less job security have been more vulnerable to job loss during the pandemic, regardless of their education level.

In 2022, Maharashtra had the highest employability, i.e., the state with the greatest number of graduates eligible to be employed, followed by Uttar Pradesh and Kerala with employability at 66, 65 and 64 per cent respectively. (Rathore, 2022)

These states, i.e., Maharashtra, Uttar Pradesh and Kerala had unemployment rates of 3.5%, 4.5% and 5.9% respectively, which was relatively low as compared to other parts of India. The unemployment rate was highest for Haryana at 37.4% whereas Orissa had the least rate of unemployment at 0.9%. So, this suggests that having graduation has something or other to do with remaining employed even during worse situations.

According to National Statistical Office's 16th Periodic Labor Force Survey, in the quarter that ended on September 30, 2022, India's unemployment rate for working-age labor force in urban areas dropped from 9.8% to 7.2%, indicating a sustained recovery from the corona virus pandemic. From July to September, the unemployment rate for female workforce in urban areas dropped from 11.6% to 9.4% and for males dropped from 9.3% to 6.6% a year ago.

The paper will make it possible for readers to determine the breadth and variation in the intensity of layoffs based on their degree of education. The study only examines whether education affects a person's work position within the periods under consideration; it does not explore the potential benefits of education as a hedge against unemployment. This paper is dedicated to providing a bird's eye view of the impact of covid-19 on unemployment. Section 2 replicates sources of data and section 3 shows the articles related to our paper. Section 4 deals into the data and methodology with the results of our model. Finally, section 5 encapsulates our findings and concludes the paper.

II. Data and Sources of Data

We have collected data from the Centre for Monitoring Indian Economy, Periodic Labor Force Survey Reports and the 78th round of the National Sample Survey of India for the duration of 2019-2021. We have taken the data from 2019 to 2021 so that we can see the effect of education on unemployment during Covid-19. The data collected includes information on the level of education, State of an individual, literacy rate, migration, gender, and region that is urban and rural.

As Covid-19 was an unexpected event for which the Indian government was not prepared. The corona virus pandemic is viewed as a "natural experiment" for the sake of our research, allowing us to conduct a causal effect analysis. Fixed effects are traits that are the same for all individuals; traits like age, sex, or ethnicity don't vary or change over time at a predictable rate. In our analysis, gender and region show a fixed effect whereas the state is a control variable as it's a variable that is not of interest to the study's objectives but is controlled because it could influence the outcomes.

III. Theoretical framework

According to the Centre for Monitoring Indian Economy, the April 2020 lockdown resulted in the layoff of nearly 12.2 crore Indians. Majority of these were small dealers working for themselves or wage labor, who are also among the least educated segments of the labor force. This poses the question of whether education protects against the prospect of unemployment. Given the recent course of events, COVID-19 is thought to have caused tremendous damage throughout the world, which was regarded to be incredibly costly in terms of a horrifying increase in layoffs. Therefore, it is in this context that we examine the role of education, which is hypothesis may, over time, operate as a barrier against virus-stimulated layoffs.

Swati Dhingra and Fjolla Kondirolli highlight the impact of the COVID-19 pandemic on youth unemployment in India. It says that the rise in unemployment has increased the likelihood of long-term unemployment and loss of livelihood, threatening income growth and well-being. This is a concern in many emerging economies, where the majority of the labor is informally employed and has no access to unemployment benefits, and where youth unemployment is a growing issue. They highlight the fact that young people are particularly vulnerable to job losses during economic downturns and that the pandemic has led to a significant increase in job losses in India. The authors also discuss the challenges faced by young people in accessing education and training opportunities during the pandemic, which further exacerbates the problem of youth unemployment. They conclude by calling for policy interventions to address the problem of youth unemployment in India, including investment in education and training programs, and support for small and medium-sized enterprises that are more likely to employ young people.

Rosa Abraham, Amit Basole, and Surbhi Kesar analyse the impact of the COVID-19 pandemic on employment in India. Using data from the Periodic Labor Force Survey conducted by the National Statistical Office, the study finds that the pandemic led to a significant reduction in employment opportunities, particularly for women, urban workers, and those with lower levels of education. Moreover, the authors observe evidence of increased informality and reduced earnings among those who remain employed. The article highlights the importance of providing support to the affected workers, especially women, and those with lower levels of education. The study suggests that the government should implement policies promoting job creation and supporting workers who have lost their jobs. It is crucial to ensure that those who are employed are earning a decent wage, and informal workers are protected by providing them with social security benefits. In conclusion, the study emphasizes the need for immediate action to address the pandemic's economic impact on India's labour market, especially for the most vulnerable groups of workers.

Khan and Arokkiaraj (2021) emphasized the forced and involuntary nature of reverse migration as a result of the unexpected lockdown, the government's lack of planning and preparation, the careless conduct of the employers, and the hatred of the community against the migrants. Most of them were not eligible for relief package payments because they lacked migration data and weren't registered in assistance programs. The COVID-19 situation has made a number of the migrant groups' pre-existing issues worse, causing them to consistently suffer at various stages of their reverse movement.

The article – Impact of Covid-19 on the Indian Economy: An Interim Assessment by S. Mahendra Dev and Rajeswari Sengupta evaluate the Covid-19 pandemic's effects on the Indian economy. It explores the effects of the epidemic on several industries, such as agriculture, manufacturing, services, and the unorganized sector, and it views how well the Indian government's policy response to the pandemic has worked to lessen its effects. The authors contend that the drop-in economic activity and employment across numerous sectors indicate that the epidemic has had a substantial impact on the Indian economy. The article emphasizes how the Indian government's policy response has fallen short, especially for the unorganized sector, which has been severely impacted by the pandemic. According to the authors, the Indian government should concentrate on generating employment opportunities and aiding the unorganized sector, which has been disproportionately affected by the pandemic. To be more prepared for upcoming pandemics, the essay also urges for increased investment in health infrastructure.

A Study on Impact of COVID-19 Pandemic on Unemployment in India" by Dr Mohd Akhter Ali and M. Kamraju show the impact of COVID-19 on employment in India by using a quantitative research design using secondary data from the Centre for Monitoring Indian Economy (CMIE) and the National Sample Survey Organization (NSSO). To evaluate how the pandemic has affected unemployment, the authors use a variety of statistical techniques, such as regression analysis. The epidemic, according to the authors, significantly impacted employment in India, with jobless rates rising across all states and industries. The report also emphasizes how the epidemic has affected weaker populations like women, children, and undocumented workers. The study does have certain restrictions, though. First off, the study relies on secondary data sources, and the authors don't go into great depth about how these sources obtain their data. Furthermore, the study only looks at the period up to October 2020, and since then, there have been significant changes in India's employment landscape. In conclusion, the study offers insightful information about how COVID-19 affects unemployment in India. To completely comprehend the impact of the pandemic on employment in India, more research is likely to be required, according to the study's limitations.

Forbes India Article on India and Unemployment: Covid-19 And Its Impact on The Indian Workforce draws attention to the effects on migrant workers and daily wages earner. To examine how the pandemic has affected employment in India, the author analyses data from several sources, including the National Statistics Office (NSO) and the Centre for Monitoring Indian Economy (CMIE). The paper offers helpful insights into how the epidemic has affected employment in India, with a marked rise in unemployment rates in a variety of industries and areas. The piece also emphasizes how the pandemic has affected weaker populations like women, children, and undocumented workers. The study also looks at how government initiatives and policies might be used to address how the pandemic has affected employment in India. The Pradhan Mantri Garib Kalyan Yojana (PMGKY) and the Atmanirbhar Bharat Abhiyan are only a couple of the policy initiatives the author explores and assesses as effective in reducing the pandemic's effects on employment.

IV. RESEARCH METHODOLOGY

The methodology section outline the plan and method that how the study is conducted. The COVID-19 pandemic has significantly impacted the international economy and raised unemployment rates across the board. A fall in consumer demand, extensive business closures, and supply chain disruptions brought on by the pandemic resulted in job losses in a variety of economic sectors.

This article is unique in that the individuals being studied are those who were employed before India's state-wide shutdown. This selection of "study subjects" eliminates the need to consider factors that may affect labor market outcomes, such as education quality, the inherent ability of individuals, and other unobservable, because the individuals being considered must already have everything required for being employed.

Equations

The following regression equation is considered:

$$U_t = \alpha + \beta_1 \text{edulevel} + \beta_2 \text{state} + \beta_3 \text{Literacy} + \beta_4 \text{Migration} + \beta_5 \text{Region} + \beta_6 \text{gender} + \varepsilon$$

$$U_t = \alpha + \beta_1 \text{Schooling} + \beta_2 \text{GRAD} + \beta_3 \text{PhD} + \beta_4 \text{state} + \beta_5 \text{Literacy} + \beta_6 \text{Migration} + \beta_7 \text{Region} + \beta_8 \text{gender} + \varepsilon$$

The dependent variable indicates the likelihood of being laid off. The primary variable of interest, "edulevel," is treated as a continuous variable in the first equation, but education is divided into three categories in the second equation. Schooling has a value of 1 if the individual has only completed education till class 12, and 0 otherwise. If the individual has completed graduation, GRAD is set to be 1. PhD is valued 1 if the individual has done or is doing a PhD.

The male has a value of 1 if the individual is a female, and 0 otherwise. Rural is a dummy variable that takes the value 1 if the individual lives in an urban area; migration takes the value 1 if the individual have not migrated, and 0 otherwise. So these variables are dummy variables. Residents' state controls have been implemented since they may be key predictors of getting laid off.

V.RESULTS AND DISCUSSION

Given the recent course of events, COVID-19 is accused of wreaking tremendous damage all over the world, which was deemed incredibly costly in terms of an alarming increase in layoffs. In this context, we investigate the role of education, which we hypothesize can operate as a long-term protective shield against virus-stimulated layoffs.

5.1 Relationship between unemployment and literacy prior pandemic

Table 5.1.1 Regression Statistics and ANOVA

Regression Statistics	
Multiple R	0.834825
R Square	0.696933
Adjusted R Square	0.595911
Standard Error	0.000778
Observation	5

ANOVA					Significance			
	Df	SS	MS	F	F			
Regression	1	4.2E-06	4.17E-06	6.8988	0.078557			
Residual	3	1.8E-06	6.05E-07					
Total	4	6E-06						

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.061599	0.00251	24.57	0.0001	0.053623	0.069	0.0536	0.0695
Literacy Rate	-0.01033	0.00393	-2.626	0.0785	-0.02284	0.002	0.0228	0.0021

According to CMIE data, around 122 million individuals lost their jobs in April 2020, with 75% of them being daily wage workers (AM 2020). As Khan and Arokkiaraj (2021) describe, Delhi was a popular destination for migrants looking for work. Given that the bulk of them had to return to their hometowns, the "informal" lay-off in Delhi was enormous, as indicated in our data - being in Delhi significantly increased the risks of losing a job during the lockdown.

These data point to the unique nature of pandemic-related unemployment. Not only was unemployment mostly an urban occurrence in the early months of the epidemic, but it also disproportionately affected workers who did not require schooling to perform their tasks, such as those employed in the informal

sector. This finding is supported by the massive reverse movement that occurred in India during the start of the epidemic and according to our findings, education boosted the chances of maintaining a job.

Table 5.1.2 Descriptive Statistics

	<i>Unemployment Rate (%)</i>	<i>Literacy Rate</i>
Mean	0.05508	0.6313
Standard Error	0.000547	0.044235
Median	0.0558	0.6275
Standard Deviation	0.001224	0.098913
Sample Variance	1.5E-06	0.009784
Kurtosis	-1.24499	0.729778
Skewness	-0.95173	-0.71871
Range	0.0027	0.2615
Minimum	0.0533	0.4822
Maximum	0.056	0.7437
Largest(1)	0.056	0.7437
Smallest(1)	0.0533	0.4822
Confidence Level (95.0%)	0.001519	0.122817

Correlation between unemployment rate and literacy rate is -0.83483 from 1991 till 2018. This data suggests that higher literacy rate contributed to more employment prior to Covid-19.

Table 5.2 Summary output of employment in various sectors

<i>Regression Statistics</i>	
Multiple R	0.99295954
R Square	0.98596865
Adjusted R Square	0.98246082
Standard Error	0.71968599
Observations	5
	11

ANOVA

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	291.165507	145.582753	281.076040	3.87612E-08
Residual	8	4.14358344	0.51794793	6	
Total	10	295.309090	9		

As shown in Table 5.3, education has a statistically significant influence in predicting the likelihood of being layoff during covid-19 pandemic. While being more educated lowered the risks of being laid off by 4.3% in 2020-2021. Apart from education, the literacy rate has a significant influence during the layoff as a large part of Indian employment is in the informal sector (daily earning worker). Whereas living in the urban region

increases the chances of layoff by 35%. The layoff data that we are examining shows that the layoff was indifferent between males and females that is getting layoff do not depend on gender.

Table 5.3 Results of Regression

Factor	Layoff	
	U1	U2
Edulevel	0.894	1.245
Literacy Rate	2.278***	2.570***
Migration	0.193***	0.216***
<i>Male</i>	1.114	0.853
<i>Rural</i>	1.213***	1.628***
<i>State</i>	-	-
Bihar	1.091	.684***
Chhattisgarh	2.350***	1.455**
Delhi	3.910	1.601
Gujarat	2.740***	4.553***
Haryana	1.917	1.486
Himachal Pradesh	0.510***	0.232***
Jharkhand	0.799	1.003
Karnataka	1.266***	0.764
Kerala	0.919	0.669***
Madhya Pradesh	1.477***	0.736
Maharashtra	0.807	0.799
Orissa	0.352***	0.247***
Punjab	3.690***	4.513***
Rajasthan	0.312***	0.492***
Tamil Nadu	1.261	0.891
Telangana	0.550***	0.385***
Uttar Pradesh	2.306***	1.601***
West Bengal	0.924**	0.867

Table 5.4 Results of Regression

Factors	Layoff	
	U1	U2
Schooling	1.239	0.749
	(0.463)	(0.313)
GRAD	1.036	0.971
	(0.253)	(0.177)
PhD	0.791	0.876
	(0.313)	(0.226)
Literacy Rate	3.378	3.097
	(4.966)	(4.387)
Migration	0.965	1.11
	(0.159)	(0.017)
Rural	0.992***	1.213***
	(0.043)	(0.061)
Male	0.965	1.71
	(0.159)	(0.239)
State controls	Yes	Yes

Table 5.4 indicates that the schooling of an individual is statistically important in predicting the likelihood of being laid off during covid-19 whereas if we take higher levels of education, as the level of education increases the chances of layoff during covid-19 decreases or we can state that higher education is statistically insignificant in predicting the layoff during covid-19 pandemic. This may be the case because

education is a significant factor in determining the type of employment one will have, but after that, it has little bearing on the likelihood that an individual will lose their job. This is because, after obtaining employment, only skill level matter and skill level is a continuous function of education.

Education significantly influences the likelihood of being laid off. Nevertheless, the chances of getting layoff during covid-19 highly depend on the level of education. If an individual has only done his/her schooling and not higher education then there is a high probability of getting layoff as compared to the individual who has done his/her graduation. During the lockdown, states with higher number of migrant workers saw a higher level of unemployment. It is also seen that there was no discrimination on the bases of gender when it come to layoff during covid-19. Our paper also highlights that individual living in an urban area has higher chances of getting layoff whereas the chances decrease as we move towards rural again. The reason for this can be the fact that a large amount of Indian population is employed in the agricultural sector.

Figures

Figure1: sector wise share of employment

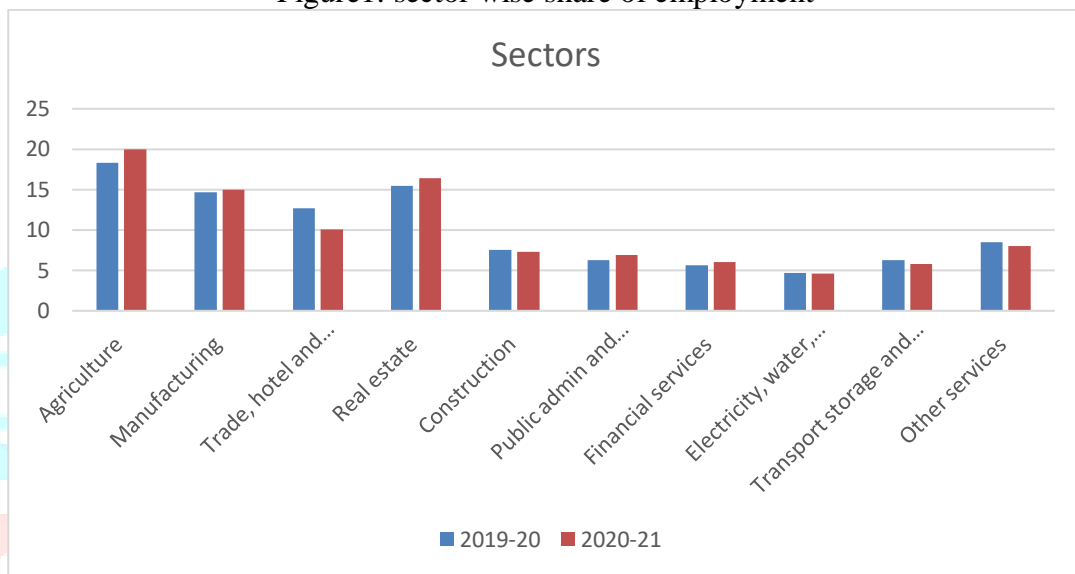


Figure 1 shows the share of different sectors in India. As we can see, the agriculture sector has the largest share in India followed by the manufacturing sector.

Figure 2: Percentage of individuals at different levels of education

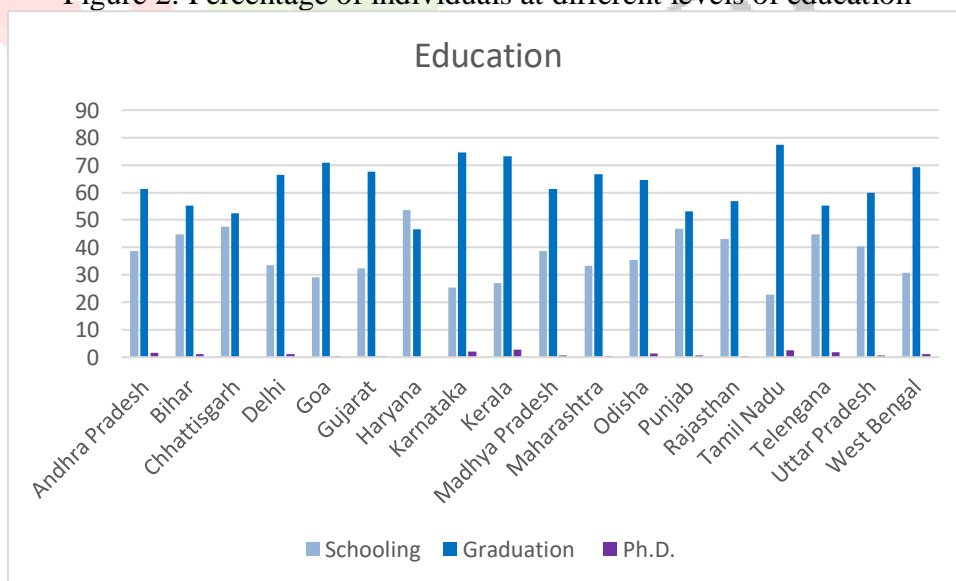


Figure 2 shows the percentage of individuals at different levels of education in different states. Here we can see that in Kerala, the number of people who have done their graduation is high as compared to any other state.

Figure 3: Percentage of employed males and females

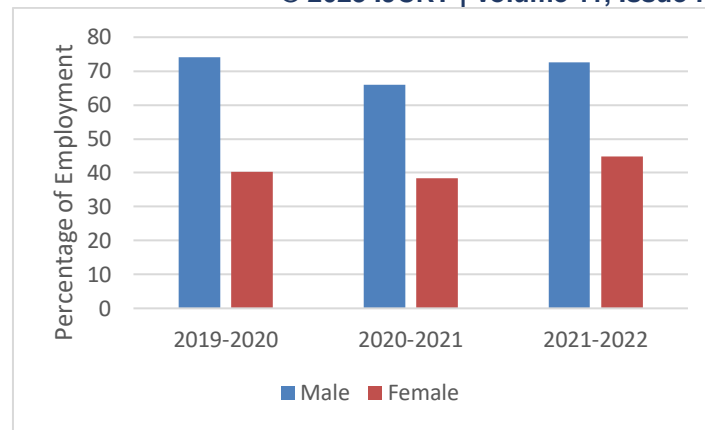


Figure 3 gives an overview of the percentage of males employed and the percentage of females employed. Here we can see that during the year 2019-2020, which was before the covid-19 pandemic, the percentage of males employed was 74.1%, which decreases significantly during 2020-2021 due to the sudden lockdown.

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