

# COVID-19 and Perfect Lockdown in India: Impact on India's Workforce

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**Abstract:** The present study estimates the magnitude of workers in India up to March 2020. An attempt has been made to provide total number of man-hour and gross earnings losses during perfect lockdowne.g., 25<sup>th</sup> March 2020 to 14<sup>th</sup> April 2020 all over India. The study assessed that about 47 billion man hour losses for actual work force and 12 million man hour losses for additional workers were witnessed at all India level during perfect lockdown. The study further calculated that gross earning losses for self-employed and casual workers were about Rs. 1917.45 billion and Rs. 576.59 billion respectively during this period. It is imperative to monitor the magnitude of losses for lockdown in the past and their implications for Indian economy and its workers at all India level. The present study is based on secondary sources of data, which has been collected from the Ministry of Statistics and Programming Implementation, office of the Registrar General and Census Commissioner, and Labour Bureau.

**Keywords:** COVID-19, lockdown, workforce, man-hour losses, gross earning losses

## INTRODUCTION

The Government of India observed a nationwide lockdown for twenty days in March 24, 2020 for the entire 130 crores Indian population as a preventive step to contain COVID-19 pandemic across the board. All economic activities were halted with few exceptions for transportation and movement of essential goods and services. All occupations, industrial activities and emergency services with certain exceptions of medical, police and other essentials etc. were comprehensively suspended. The covid-19 lockdown situation being the worst mayhem since the Great Depression of 1930s hit several vital and prominent sectors viz. agriculture and allied sector, civil aviation, trade, tourism and MSME etc. to a large extent. In March 2020 our honorable finance minister announced a Rs. 1.7 lakh crore (US\$24 billion) stimulus package to provide help to those affected by the lockdown. The package was aimed to provide food security measures for poor households through direct cash transfers, free cereal and cooking gas for three months

In May 2020 our hon'ble PM announced a stimulus package of Rs. 20 trillion (US\$280 billion) for self-reliant India (GOI 2020). The economic package was meant for MSMEs, farmers, labourers, cottage industries and taxpayers. The covid-19 spread has left a trail of destruction among the Indian workers. With all industrial activities and workplaces closed down, many workers were left with no option but to return to their homes.

Various studies have been conducted to capture the implications of various pandemic at global level. Bloom and Mahal (1997) in their study tried to analyze the impact of the Spanish flu on output per capita and population changes in 13 Indian provinces. Karlsson M., Nilsson D. & Pichler S. (2014) analyzed the economic effects of the 1918 Spanish flu pandemic in terms of capital returns and earnings for Sweden economy. Since no specific study related to lockdown and Indian workers is available, an endeavor has been made to review all labour force survey reports as present in Indian context as sound policies based on available data sets can go a long way in strengthening and forecasting the economy.

### **RESEARCH METHODOLOGY**

The objective of the paper is to study the magnitude of workers in India on existing reliable datasets. Based on the estimated workers, man-hour and gross earning losses were captured. This study extensively analyzed the multiple data sources on workers as available at all India level. The data has been collected as per the following secondary sources:

- (a) Data pertaining to Periodic Labour Force survey for the period 2017-18. (Data Source: Ministry of Statistics and Programming Implementation).
- (b) Data related to employment-unemployment surveys for the period 2015-16. (Data Source: Labour Bureau).
- (c) Data pertaining to Census 2001 and 2011. (Data Source: Office of the Registrar General and Census Commissioner, India).

Under the Periodic Labour Force Survey, the labour force parameters have been estimated and expressed in the form of rates and per 1000 distribution of population aged 15 years and above. In order to depict these estimated rates in terms of absolute figures, population projection method has been utilized by using population census data (Census 2001, 2011) and corresponding decadal changes for population having age 15 years and above has been undertaken for this purpose.

For the categories of persons at All-India level, projected population based on March 2020 (the month of lockdown) has been derived by using the following formula:

$$A_t = A_0 \{ [1 + (R/100)] ^ (M/120) \}$$

Where,

A<sub>0</sub> = Census population having age 15 years and above as on March 1, 2011;

R = Percentage decadal change in population (having age 15 years and above) between 2001 and 2011;

M = Number of months between census 2011 and March, 2020;

A<sub>t</sub> = Projected population having age 15 years and above as on March, 2020.

### **LIMITATIONS OF THE STUDY**

As considerable efforts have been made to identify the latest data from labour force surveys, certain data gaps pertaining to labour force parameters were witnessed during study viz. National Industrial Classification (NIC) and National Classification of Occupation, average earnings, man-hours in rural/ urban as well as public/private works for Current Weekly Status (CWS) /Unusual Principal and Subsidiary Status (UPSS) approaches. However, concerted efforts are made to arrive at close estimates at all India level for better policymaking.

### **DISCUSSIONS AND DATA ANALYSIS**

The present study attempts to highlight sector and economic activity wise workers in India. Besides, an effort has been made to capture information on magnitude of workers and man-hour and gross earning losses during perfect lockdown. Tables 1 to table 6 reveal data on the former while tables 7 to table 11 provide information on the latter.

### **GENDER WISE DISTRIBUTION OF WORKERS IN INDIA**

The gender wise distribution refers to the allocation of work to men and woman in the country. It also provides the present status of socio-economic condition of woman and men. According to Census 2011, the workforce participation rate for female is 25.51 percent against 53.26 percent for males. It is better e.g., 30.02 percent compared with 53.02 percent for males compared with 53.03 percent males (Census, 2011). It is important to know about the participation of males and females in a country, so that corrective decision may be taken for overall growth of the nation.

The following table number-I presents the gender wise distribution of workers in India. Table 1 reveals the total number of estimated workers age of 15 years and above as on March 2020 based on UPSS and CWS

methods. Under UPSS approach, out of the total estimated workers e.g., 48.20 crores, about 66 percent workers belong to rural areas wherein the male workers comprises of 24.06 crores and the female workers comprises of 7.63 crores. About 34 percent workers belong to urban area wherein 13.14 are male workers and rest 3.38 workers are females. Under CWS approach, out of 45.49 crores workers, about the same trend has been observed where 29.57 crore workers belong to rural area where the male workers are 23.09 crores and female workers are 6.47 crores. On the other hand, about 16.02 crores workers belong to urban areas where male workers are found to be 12.85 crores and female workers are found to be 3.17 crores.

**Table 1: Gender wise Distribution of Workers in India (UPSS and CWS Approaches)**

	(In crores)		
<i>Workers</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
<i>UPSS Method</i>			
(Rural + Urban)	37.20	11.00	48.20
(Rural)	24.06	7.63	31.69
(Urban)	13.14	3.38	16.51
<i>CWS Method</i>			
(Rural + Urban)	35.94	9.65	45.59
(Rural)	23.09	6.47	29.57
(Urban)	12.85	3.17	16.02

*Source:* Author's Projections based on Periodic Labour Force Survey (PLFS data)

*Note:* Age 15 Years & above based on UPSS and CWS method (March, 2020)

## **ECONOMIC ACTIVITY WISE DISTRIBUTION WORKERS**

About half of the workforce in India is still employed in agriculture, while other half is almost distributed between the two other sectors industry and services. While the share of Indians working in agriculture is declining but it is still the main sector of employment (H. Plecher, 2020). Table 2 presents the economic activity wise total number of workers.

If we make a glance at Table 2, we may find that on the basis of UPSS method, about half of the workforce is self employed which comprises of 17.54 crores own account workers and 5.33 crores are found to be helpers at all India level. Under self-employed category, about 77 percent of workers are found to be male workers and rests are female self-employed workers. Besides, about one fourth of workers (about 10.33 crore) worker are found to be casual workers and the total number of estimated regular workers are 15 crores at all India level.

**Table 2: Economic Activity Wise Total Number of Workers**

(In crores)

Gender	Economic activity wise workers (March, 2020)					
	Own Account Workers (1)	Helper (2)	Total Self-Employed Workers (3=1+2)	Regular Workers (4)	Casual Workers (5)	Total (3+4+5)
Rural Male	10.61	1.97	12.58	5.63	5.85	24.06
Rural Female	1.54	2.42	3.96	1.60	2.06	7.63
Rural Total	12.15	4.39	16.55	7.23	7.91	31.69
Urban Male	4.59	0.57	5.15	6.01	1.98	13.14
Urban Female	0.80	0.37	1.17	1.76	0.44	3.38
Urban Total	5.39	0.94	6.32	7.76	2.42	16.51
Total (Male)	15.20	2.54	17.74	11.64	7.83	37.20
Total (Female)	2.34	2.79	5.13	3.36	2.50	11.00
Grand Total	17.54	5.33	22.87	15.00	10.33	48.20

Source: Author's Projections based on Periodic Labour Force Survey (PLFS data)

Note: Economic activity wise workers based on UPSS method (March, 2020)

The above Table 3 highlighted the estimated economic activity wise estimated workforce based on CWS approach. The table reveals that about 51 percent of total workforce is self-employed

**Table 3: Economic Activity Wise Distribution of Workers**

(In crores)

Gender	Economic activity wise workers (March, 2020)					
	Own Account Workers (1)	Helper (2)	All Self-Employed Workers (3=1+2)	Regular Workers (4)	Casual Workers (5)	Total
Rural Male	10.92	2.12	13.37	3.35	6.37	23.09
Rural Female	1.29	2.25	3.65	0.80	2.03	6.47
<b>Rural Total</b>	12.22	4.37	17.02	4.14	8.41	29.57
Urban Male	4.36	0.54	5.08	5.97	1.80	12.84
Urban Female	0.70	0.32	1.08	1.74	0.35	3.17
<b>Urban Total</b>	5.07	0.86	6.16	7.71	2.15	16.02
Total (Male)	15.56	2.77	18.83	8.66	8.44	35.93
Total (Female)	2.01	2.73	4.91	2.33	2.51	9.75
Grand Total	17.28	5.23	23.18	11.86	10.56	45.59

Source: Author's Projections based on Periodic Labour Force Survey (PLFS data)

Note: Economic activity wise workers based on CWS method (as on March, 2020)

Which comprises of own account worker (38 percent) and the rest are helpers. The total number of casual and regular workers are comes out to be 10.56 crores and 11.86 crores respectively. During the perfect lockdown, the worst categories of affected workers were falling under self-employed and casual workers.

### SECTOR WISE DISTRIBUTION OF WORKFORCE IN INDIA

Table 4 summarized sector wise estimated workforce in India based on UPSS and CWS approaches as on March 2020. The table mentioned that about majority of workforce is employed in primary sector followed by tertiary and secondary sectors under both the approaches. Further, considerable amount of male and female rural workforce is engaged in primary sector whereas both male and female workers in urban areas are found to be engaging in service sector.

**Table 4: Sector Wise Distribution of Workforce in India(March, 2020)**

(In crores)

Approach/Workers	UPSS			CWS		
	Male			Male		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
Rural Workers	13.22	5.56	5.28	12.49	5.33	5.27
Urban Workers	0.71	4.73	7.70	0.67	4.56	7.61
(Rural + Urban) Workers	13.93	10.29	12.98	13.16	9.89	12.88
	Female			Female		
Rural Workers	5.59	1.04	1.00	4.58	0.91	0.99
Urban Workers	0.31	1.02	2.04	0.24	0.92	2.01
(Rural + Urban) Workers	5.90	2.06	3.04	4.82	1.83	3.00
	Total (Male+Female)			Total (Male+Female)		
Rural Workers	18.81	6.60	6.28	17.08	6.24	6.26
Urban Workers	1.02	5.75	9.74	0.91	5.48	9.62
(Rural + Urban) Workers	19.83	12.35	16.02	17.98	11.72	15.88

Source: Author's Projections based on Periodic Labour Force Survey (PLFS data)

### OCCUPATION WISE WORKFORCE IN INDIA

Table 5 summarized occupation wise workforce in India as on March, 2020 based on UPSS approach only as on March, 2020 as classification of

occupation was not permissible under CWS approach. The table mentioned that about majority of workforce (29 percent) is employed in skilled agricultural and fishery worker category and elementary occupation (24 percent) followed by craft and trades related workers (12 percent).

**Table 5: Occupation Wise Workforce in India(March, 2020)**

(In crores)

Occupation	Rural			Urban			Total (Rural + Urban)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Legislators, senior officials & managers	1.23	0.22	1.45	2.02	0.33	2.36	3.25	0.55	3.81
Professionals	0.48	0.14	0.62	1.10	0.44	1.55	1.59	0.58	2.17
Technicians and associate professionals	0.49	0.31	0.79	0.87	0.39	1.27	1.36	0.70	2.06
Clerks	0.30	0.03	0.33	0.54	0.16	0.70	0.84	0.19	1.03
Service workers and shop and market sales workers	1.69	0.31	2.00	2.18	0.52	2.70	3.87	0.82	4.69
Skilled agricultural and fishery workers	9.75	3.60	13.34	0.49	0.16	0.66	10.24	3.76	14.00
Craft & trades related workers	2.41	0.50	2.91	2.47	0.56	3.04	4.88	1.07	5.95
Plant & machine operators & assemblers	1.35	0.04	1.39	1.46	0.06	1.53	2.81	0.10	2.91
Elementary occupations & Division	6.37	2.49	8.86	1.99	0.74	2.73	8.36	3.23	11.59
	24.06	7.63	31.70	13.14	3.38	16.52	37.21	11.01	48.22

Source: Author's Projections based on Periodic Labour Force Survey (PLFS) data

### MAN-HOUR LOSSES DURING FIRST LOCKDOWN

Table 6 provides information on number of man hour losses during first lockdown who were supposed to be actually worked during perfect lockdown of 21 days. Since the figures for man-hour losses (per week) were available for workers from the quarter's viz. January, 2018-March, 2018 and April 2018 – June 2018, average man-hour losses (per week) of two quarters were taken into account since it was the period much closer to the lockdown. The table highlighted that about 26.93 billion, 13.70 billion, and 6.73 billion man-hour losses were witnessed during perfect lockdown for own account, casual and helper category of workers who were supposed to be actually working had there been no perfect lockdown. Although 13.70 billion manhour losses are estimated for those regular workers who were

supposed to be actually worked but this figure may be less than that since around essential services were provided by regular workers during perfect lockdown.

**Table 6: Man-Hour Losses during First Lockdown (actually worked)**

Category	(in crores)			
	Own Account Workers	Helpers	Regular Workers	Casual Workers
Rural Male	1679.37	299.24	582.12	855.65
Rural Female	151.90	247.03	118.98	228.72
Rural Total	1831.27	546.27	701.10	1084.37
Urban Male	772.52	89.04	1078.03	243.96
Urban Female	89.21	37.94	275.18	42.06
Urban Total	861.73	126.98	1353.21	286.02
Total Male	2451.89	388.28	1660.15	1099.61
Total Female	241.11	284.97	394.16	270.78
Gross Total	2693.00	673.24	2054.31	1370.39

Source: Author's own calculations from PLFS (2017-18)

An effort has been made to capture NCO wise number of workers at three digit level for those workers who performed exemplary essential services during lockdown viz. medical and paramedical staff, police force, chemists and broad casting operators etc. (except sanitation workers). Taking into account their roles, they put around 3.9 billion estimated manhours during perfect lockdown.

Since sanitation workers were doing stupendous work during perfect lockdown their numbers could not be ascertained through NCO three-digit classification. Hence, number of sanitation workers were taken as 5 millions in urban areas (2018). As it is assumed that all the sanitation workers viz. regular and casual etc. were working during perfect lockdown in urban areas, it is estimated that they put around 1.4 billion man-hours during perfect lockdown in urban areas.

Table 7 provides information on number of man hour losses during first lockdown who were supposed to be additionally worked during perfect lockdown of 21 days. Similarly, the figures for average manhour losses (per week) of two quarters viz. January, 2018-March, 2018 and April, 2018 – June, 2018 were taken into account through corresponding percentage of workers. The table highlighted that about 285.2 million, 118.7 million, and 93 million manhour losses were witnessed during perfect lockdown for own account, casual and helper category of workers who were supposed



**Table 7: Number of Man Hour Losses During First Lockdown (Additionally Worked)**  
(in crores)

<i>Category</i>	<i>Own Account Workers</i>	<i>Helpers</i>	<i>Regular Workers</i>	<i>Casual Workers</i>
Rural Male	21.76	6.90	4.40	8.32
Rural Female	2.82	2.42	1.98	1.56
Rural Total	24.58	9.32	6.38	9.89
Urban Male	5.04	0.66	3.69	1.71
Urban Female	1.81	0.35	2.78	0.35
Urban Total	6.85	1.01	6.47	2.06
Total Male	23.68	6.37	6.36	9.74
Total Female	4.84	2.93	3.98	2.14
Gross Total	28.52	9.30	10.34	11.87

*Source:* Author's own calculations

to be additionally working had there been no perfect lockdown. Under PLFS (2017-18), average earnings are available for self-employed, regular and casual workers etc. but in the paper gross earning losses were estimated for only self-employed and casual workers as it is assumed that regular workers were getting their earnings during the perfect lockdown period.

**Table 8: Gross Earnings Losses During First Lockdown For Self-Employed**  
(in crores)

<i>Self-employed Category</i>	<i>Average monthly earnings (in Rs.) (January-March, 2018)</i>	<i>Average monthly Earnings (in Rs.) (April-June, 2018)</i>	<i>Average monthly Earnings(in Rs.) (January-June, 2018)</i>	<i>Gross Earnings loss (in Rs.)</i>
Rural Male Workers	6204.933	6759.788	6482.361	86673
Rural Female Workers	2885.001	2745.036	2815.019	10262
Rural Workers (Male+Female)	5837.909	6274.212	6056.061	96935
Urban Male Workers	11170.61	11385.41	11278.01	57331
Urban Female Workers	4516.813	4589.074	4552.944	4912
Urban Workers (Male+Female)	10213.73	10414.52	10314.12	62243
Rural + Urban (Male Workers)	8993.159	9343.95	9168.555	172633
Rural + Urban (Female Workers)	3919.174	3861.172	3890.173	19112
Rural + Urban (Male + Female) Workers	8335.887	8612.975	8474.431	191745

*Source:* Author's own calculations from PLFS (2017-18)

Table 8 provides information on Gross Earnings losses during first lockdown for self-employed category. As the figures for average monthly gross earnings (Rs.) during last 30 days from self-employed of two quarters viz. January, 2018-March, 2018 and April, 2018 – June, 2018 were available, gross earning losses (in Rs.) were estimated by taking average of average monthly gross earnings of two quarters since it was the period much closer to the lockdown as mentioned earlier. The table reveals that about Rs. 191745 crore gross earning losses were accrued to self-employed category during perfect lockdown. As no classification was made for casual workers in public and other than public work in Periodic Labour Force Survey, percentage distribution for casual workers in public and other than public work was obtained from the latest source i.e. 5th Employment-Unemployment Survey (2015-16).

Table 9 provides information on Gross Earnings losses during first lockdown for casual labour category (in other than Public Work). As the figures for daily average earnings (Rs.) for casual worker (in other than Public Work) during two quarters viz. January, 2018-March, and

**Table 9: Gross Earnings Losses During First Lockdown for Casual Labourers (Other Than Public Work)**

<i>Casual Labourers (other than Public Work)</i>	(in crores)			
	<i>Daily Average Earnings (in Rs.) (January- March, 2018)</i>	<i>Daily Average Earnings (in Rs.) (April- June, 2018)</i>	<i>Daily Average Earnings (in Rs.) (January- June, 2018)</i>	<i>Gross Earning Losses</i>
Rural Male Workers	270	282	276	34285
Rural Female Workers	175	179	177	7170
Rural Workers (Male +Female)	249	262	256	41455
Urban Male Workers	328	335	332	11510
Urban Female Workers	189	201	195	1387
Urban Workers (Male+Female)	307	316	311	12897
Rural + Urban (Male Workers)	280	291	286	46946
Rural + Urban (Female Workers)	177	181	179	8996
Rural + Urban (Male + Female) Workers	258	271	265	55942

Source: Author's own calculations from PLFS (2017-18) and 5<sup>th</sup> EUS (2015-16)

April, 2018 – June, 2018 were available under PLFS, gross earning losses (in Rs.) were estimated by taking average of daily average earnings of these

two quarters as stated earlier. The table reveals that about, Rs. 55942 crore gross earning losses were accrued to casual workers during perfect lockdown.

Table 10 presents the total number of gross earnings losses during first lockdown for casual labourers. Since daily average earnings classification was made for casual workers in public work for only rural areas vis-à-vis MGNREGS and other than MGNREGS casual workers in PLFS for the quarters January-March, 2018 and April-June, 2018, average daily earnings from January-June, 2018 were made for rural casual workers who worked in MGNREGA and other than MGNREGS casual workers. The table stated that about Rs. 1756 crores gross earning losses were estimated to be faced by rural casual workers in public work during perfect lockdown where male rural workers witnesses about Rs. 1452 crores and females about Rs. 304 crores.

**Table 10: Total Number of Gross Earnings Losses During First Lockdown for Casual Labourers (In Public Work)**

<i>Activities</i>	<i>January-March, 2018</i>	<i>April-June, 2018</i>	<i>Average Daily Earnings (January, 2018-June 2018)</i>	<i>Average MGNREGS and other MGNREGS Earnings</i>	(in crores)
					<i>Gross losses during lockdown</i>
<b>Rural Male</b>					
MGNREGS Work	171	142	156	151	1452
Other than MGNREGS Work	152	138	145		
<b>Rural Female</b>					
MGNREGS Work	165	131	148	137	304
Other than MGNREGS Work	134	119	126		
<b>Rural (Male+Female)</b>					
MGNREGS	168	136	152	144	1756
Other than MGNREGS	143	129	136		

Source: Author's own calculations based on PLFS (2017-18) and 5<sup>th</sup> EUS (2015-16)

## CONCLUSION ANDWAY FORWARD

COVID-19 has changed the world order. Wheels of economic growth have now come to a standstill condition. There are the concerns that lives can be

lost in hunger or sacrificed in lockdown. India is facing its biggest crisis in decades, with a three-week lockdown initially, but due to extending further in a nation of 1.3 billion people likely to result in economic recession, millions of job losses and possible starvation among the poor people.

The magnitude of workers in India up to March 2020 has been assessed in the present study. The sector wise and economic activity wise distribution of workers has been studied at all India level. Further, the study calculated total number of man-hour and gross earnings losses during first lockdown i.e. only for twenty days (25<sup>th</sup> March, 2020- 14<sup>th</sup> April, 2020). The paper estimated that about 59 billion man hour losses for actual work force and additional workers were witnessed at all India level during perfect lockdown. It was found that gross earning losses for self-employed and casual workers were Rs. 2495 billion during perfect lockdown at all India level. Key workforce parameters as mentioned in the paper may be estimated and assessed for further examination to arrive at meaningful results for partial and further extension of lockdown period in wake of labour supply shocks. Moreover, forecasting of man-hour and gross earning losses may be attempted in future to gauge the impact of Covid-19 on India's work force.

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