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**Changing Characteristics of the Indian Labour Market: Issues and Challenges in the Backdrop of Covid-19 (online)**

Guest Editor: Niti Mehta



Sardar Patel Institute of Economic and Social Research (SPIESR), Ahmedabad

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# INDIA'S RURAL EMPLOYMENT SCENARIO: CHALLENGES AND OPPORTUNITIES

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**Abstract:** Sectoral transformation from a rural subsistence agriculture based economy to an urban monetised industrial and service led economy is generally accepted as signs of development. It is also expected that these changes will accompany the economic growth process in a reasonably capitalistic economy like India, at least after the neo-liberal structural adjustment programmes started since 1990s. However, India's rural employment scenario is an enigma. While GDP share of agriculture has dwindled remarkably, its share in employment does not show signs of similar decline. Whatever changes have taken place are also questioned as to whether they are signs of positive dynamism or that of distress. This paper attempts to examine the complexity of changes in rural labour market in India over the last decade to untangle this riddle. A multi-pronged strategy of human capital formation, transforming rural non-farm business and augment returns from agriculture is necessary to improve the scenario. Opportunities are there but structural challenges must be overcome to reach those goals.

**Keywords:** Rural employment, Rural labour market, Rural transportation

## 1. Introduction

The necessity of converting a rural agrarian subsistence economy to a non-farm monetised economy for ushering in development is well accepted. This has to work on two fronts – the production system and the employment system. Importance of industrial and service sectors in GDP is expected to rise and that of primary activities decline as an economy matures. A similar movement of workers from primary to secondary and then to tertiary sectors is also expected to accompany this product side transformation. While India has succeeded in transforming its GDP composition, its performance in sectoral transformation of labour market is far from satisfactory. It is true that the share of agriculture and allied activities have come down from more than 85 per cent in early 1980s to little more than 50 per cent in 2018, but compared to the change in GDP composition or to other countries at similar levels of development, this reduction is too little. In addition, researchers have questioned the desirability of this process too as labour shift may be forced and distress-

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driven rather than due to pull factors (a forceful argument by Abraham, 2009 and also by Jatav and Sen, 2010). In recent years arguments have been put out regarding the job-less growth and even job-loss growth in India in which the brunt is borne by the rural labour market. Against that backdrop, this paper explores the changing pattern of rural employment scenario in India over the last decade using large sample survey data from National Sample Survey Office (NSSO) of India. We observe that the changes occurring in the countryside are dualistic in nature. While some of the transformations are in response to dynamism and opportunities, some others are due to stagnation and lack of opportunities in agriculture. Thus there are signs of both change and continuity. The fast changing economic situation are creating opportunities in the countryside but in absence of coherent strategies and adequate human capital formation, the challenges seem to be substantial.

## 2. Current Literature and Objectives of Present Study

India's rural economy has been centred around agriculture ever since the beginning of settled life in the subcontinent; social, political, and technological progress have occurred around this central activity. It is therefore no wonder that rural economy, especially the agricultural sector, and rural employment scenario has a rich and ever increasing body of research. Most of these have dwelt on the situation of rural labour, either briefly or at length [see Coppard (2001) for an excellent survey of literature focussed on rural non-farm sector]. Other notable ones include Sastry (2002), Bhaumik (2002), Chadha and Sahoo (2002), Bhalla (2003), Deshingkar and Farrington (2006), Jha (2006), Abraham (2009), Eswaran et al. (2009), Ranjan (2009), Himanshu et al. (2011), Binswanger-Mkhize (2013), Thomas and Jayesh (2016), Kaur et al. (2019), Swaminathan (2020).

Almost all these studies report a declining share of agriculture and farming among rural workers and movement onto secondary and tertiary sectors. In this paper we try to understand the current situation by looking at parameters like employment status, sectoral & occupational distributions, wage & consumption levels, and education & skill levels over the last decade, i.e. 2011-18 period using NSSO data.

## 3. Results and Discussion

### *3.1 Aggregate Employment Scenario*

The study period of 2011-12 to 2018-19 has seen a decelerating trend in Indian economy when compared to the earlier decade. While in the earlier decade GDP grew at about 8.5 per cent per annum, in the decade under consideration, it dropped to less than 7 per cent per annum. However, even this moderate rise in production did not lead to any improvement in the employment situation. Aggregate worker-population ratio declined from 35.4 per cent in 2011 to 34 per cent in 2018. As a result Unemployment rate increased from 2.7 per cent to 6.3 per cent.

Using the labour market parameters from NSSO and using the estimated/projected population figures from MoHFW, absolute number of workers can be estimated. It is observed that while population increased by about 38 million during 2011-18, labourforce increased by about 11.5 million. However, number of workers declined by 6.4 million during this time, thereby adding about 18 million individuals to the rank of unemployed. This broad trend does not reveal that the problem is mainly a rural one – the job loss has been entirely in the rural areas (a decline of about 15 million workers) while urban areas have witnessed an increase of 8 million workers. While a part of this can be attributed to rural-urban migration (rural labourforce decreased by 3.5 million during this period), it does not account for majority of the job-loss witnessed. The core reason is that Agriculture is losing workers at a fast rate while the slack is not being picked up by other non-farm sectors in rural

areas. The situation will be clearer if we dissect the anatomy of employment scenario in rural areas further.

### *3.2 Employment Status*

A marginal drop in Labour Force Participation rate (LFPR) in rural India was witnessed during 2011-18 accompanied by a fall in employment rate as well, indicating lower absorption of rural labour into productive jobs (Table 1). This has resulted in a decline of about 15 million workers in the rural areas during this period. But what is more revealing is that the job-loss has been driven entirely by a decline in number of Casual Workers showing a decrease by 30 million during the period. While self-employeds (cultivators, craftsmen, petty traders, professionals, etc.) showed a marginal increase, regular workers increased by about 13 million. A large part of the increase in regular workers was because of employment of teachers and medical personnel in rural areas during the decade as part of the rural social sector push.

**Table 1: Rural Work Participation and Employment Types (as proportion of 6+ population)**

| Category | 2011-12 | | | 2018-19 | | |
|---|---|---|---|---|---|---|
| | Male | Female | All | Male | Female | All |
| Not in Labour force@ | 45.3 | 81.9 | 63.2 | 45.3 | 83.0 | 63.8 |
| Unemployed# | 1.2 | 0.5 | 0.8 | 3.2 | 0.7 | 2.0 |
| Self Employed^ | 29.0 | 9.4 | 19.4 | 29.4 | 9.1 | 19.5 |
| Casual Labourer^ | 19.1 | 6.8 | 13.1 | 14.7 | 5.1 | 9.9 |
| Regular Salaried Worker^ | 5.4 | 1.3 | 3.4 | 7.4 | 2.1 | 4.8 |

*Note:* @ percentage of population; # percentage of labour force; ^ percentage of workers
*Source:* Authors' calculation based on NSSO (2012, 2018)

This is in sharp contrast to the trends of earlier decade where self-employment and regular salaried jobs had declined along with a rise in casual wage labour.

Thus the broad picture is that of decreased work participation, further slower labour absorption, increased unemployment and a reversal of the casualisation process witnessed earlier (Table 2).

**Table 2: Absolute Changes in Rural Labour Market – 2011-18 (in millions)**

| | Change between 2011-18 | | |
|---|---|---|---|
| Category | Male | Female | All |
| LABOURFORCE | 0.8 | (-)4.3 | (-)3.5 |
| ALL WORKERS | (-)9.3 | (-)5.4 | (-)14.7 |
| Self Employed | 2.5 | (-)0.7 | 1.8 |
| Casual Labourer | (-)21.5 | (-)8.0 | (-)29.5 |
| Regular Salaried Worker | 9.6 | 3.4 | 13.0 |
| UNEMPLOYED | 10.1 | 1.0 | 11.1 |

*Source:* Same as Table 1

### *3.3 Sectoral and Occupational Changes*

During this period the long trend of workers moving out of agriculture has continued, and agriculture now accounted for a little more than half of all rural workers compared to more than

four-fifth in early 1980s. Sectors that have gained from this outflow are Construction (+2 percentage points), Trade, Hotel, & Restaurant (+1.8 pp), Community, Social & Personal Services (+1.6 pp) and Transport & Communication (+0.9 pp). But what is appalling is the decline Table 3 in share of Manufacturing in total rural employment (Table 3 and 4).

**Table 3: Proportion of Rural Employment by Major NIC Sectors**

| Category | 2011-12 | | | 2018-19 | | |
|---|---|---|---|---|---|---|
| | Male | Female | All | Male | Female | All |
| Agriculture, incl F & F | 59.3 | 74.6 | 63.0 | 53.0 | 69.9 | 56.9 |
| Mining | 0.6 | 0.4 | 0.5 | 0.4 | 0.2 | 0.4 |
| Construction | 13.1 | 5.1 | 11.2 | 15.6 | 5.3 | 13.2 |
| Manufacturing | 8.2 | 9.6 | 8.5 | 7.4 | 9.2 | 7.8 |
| Elec, Gas & Water | 0.3 | 0.1 | 0.3 | 0.4 | 0.2 | 0.4 |
| Transport, St & Comm | 4.3 | 0.2 | 3.3 | 5.5 | 0.2 | 4.2 |
| Fin & Business Services | 1.0 | 0.2 | 0.9 | 1.6 | 0.4 | 1.4 |
| Trade, Hotel & Resta | 7.8 | 3.5 | 6.7 | 9.7 | 4.8 | 8.5 |
| CS&P Services | 5.4 | 6.4 | 5.6 | 6.4 | 9.8 | 7.2 |

*Note:* Columns do not add up to 100 due to rounding off and leaving out of minor sectors.
*Source:* Same as Table 1

**Table 4: Growth in Rural Employment by Major NIC Sectors – 2011-18 (CAGR)**

| | % per annum | | |
|---|---|---|---|
| Category | Male | Female | All |
| Agricultural incl F & F | (-)2.1 | (-)1.9 | (-)2.0 |
| Mining | (-)4.4 | (-)7.5 | (-)4.9 |
| Construction | 2.0 | (-)0.4 | 1.7 |
| Manufacturing | (-)2.0 | (-)1.5 | (-)1.8 |
| Elec, Gas & Water | 3.8 | 8.2 | 4.2 |
| Transport, St & Comm | 3.0 | 1.3 | 3.0 |
| Fin & Business Services | 6.2 | 7.3 | 6.3 |
| Trade, Hotel & Resta | 2.6 | 3.8 | 2.8 |
| CS&P Services | 2.0 | 5.2 | 2.9 |

*Source:* Same as Table 1

This has been paralleled by changes in occupational divisions also (Table 5 and 6). While farming as an occupation declined in importance, major gainers have been Production & Construction related jobs and Administrative & Managerial jobs (share of both increased by 1.5 percentage points), Technical & Professional jobs (+1.4 pp), Sales and Transport sector jobs (both showing a 1.2 pp rise in share).

**Table 5: Rural Employment by Major Occupation Groups**

| Category | 2011-12 | | | 2018-19 | | |
|---|---|---|---|---|---|---|
| | Male | Female | All | Male | Female | All |
| Admin & Managerial | 4.2 | 2.3 | 3.8 | 5.8 | 3.7 | 5.3 |
| Technical & Professional | 4.3 | 3.8 | 4.1 | 5.3 | 6.0 | 5.5 |
| Clerical | 1.0 | 0.3 | 0.8 | 1.2 | 0.6 | 1.1 |
| Sales | 4.9 | 2.0 | 4.2 | 6.2 | 2.6 | 5.4 |
| Service | 2.5 | 2.9 | 2.6 | 2.8 | 3.8 | 3.1 |
| Farming | 59.8 | 74.5 | 63.3 | 52.1 | 70.1 | 56.3 |
| Production | 13.0 | 11.6 | 12.7 | 15.1 | 11.2 | 14.2 |
| Transport | 3.7 | 0.1 | 2.8 | 5.2 | 0.1 | 4.0 |
| Others nec | 6.7 | 2.5 | 5.7 | 6.2 | 1.7 | 5.1 |

*Note:* Columns do not add up to 100 due to rounding off.
*Source:* Same as Table 1

**Table 6: Growth in Rural Employment by Major Occupation Groups – 2011-18 (CAGR)**

| | % per annum | | |
|---|---|---|---|
| Category | Male | Female | All |
| Admin & Managerial | 4.2 | 6.0 | 4.5 |
| Technical & Professional | 2.6 | 5.9 | 3.4 |
| Clerical | 2.4 | 8.4 | 3.1 |
| Sales | 2.9 | 3.0 | 2.9 |
| Service | 1.5 | 3.0 | 1.9 |
| Farming | -2.4 | -1.8 | -2.3 |
| Production | 1.7 | -1.4 | 1.1 |
| Transport | 4.7 | 2.3 | 4.7 |
| Others nec | -1.6 | -5.9 | -2.0 |

*Source:* Same as Table 1

But the changes in structure and composition have been too small and too slow. Thus while Agriculture shed about 30 million jobs during the period, sectors like Construction, Trade, Hotels & Restaurant, and Transport that are traditional recourse of poor pushed-out rural workers could engage only about 13-14 additional workers during this time. The situation was not helped by an absolute decline of 3.5 million jobs in rural Manufacturing.

### *3.4 Sectoral Shifts – Dynamism or Distress?*

It is sometimes argued that the sectoral movement from agriculture to other non-farm sectors is a sign of development and is bound to happen as an economy matures. But for that to be true the movement should be demand pull rather than supply-push in nature. Only when the new jobs are better in terms of occupational hierarchy and more remunerative can we say that the shift of workers are voluntary, in response to economic incentive and therefore a sign of dynamism in the economy. However, if we find that the new jobs are occupationally at the same or lower status, and are not sufficiently remunerative, we have to accept that the shift is involuntary and forced and is therefore a sign of rural distress. We already know that there has been an absolute decline in rural workers during the study period – a sign of distress rather than progress. But even then, within the rural labour market the movements reveal further signs of grief in the countryside (Table 7).

It is observed that while workers in agricultural sector have declined as a whole, there has been a rise in processing jobs within agro-sector indicating saturation, or even overflow, of farming/ cultivation in terms of labour absorption. At the same time, this is also a sign of shift up the value chain. While share of manufacturing sector employment has declined, within the sector the share of labourers has increased compared to artisans and self-employeds. Almost all of the increase in construction and service sector jobs have been for labourers and service-providers rather than in administrative/managerial jobs. For trade & hotels etc. sector too, increase has been mainly in the form of sales workers and servicemen and not for managerial jobs. For the transport sector too we observe a relatively higher rise in transport operators.

**Table 7: Employment Share by Industry and Occupation**

| NIC Category | 1983 | 2009 | 2011 | 2018 |
|---|---|---|---|---|
| Agriculture | ***85.2*** | ***66.6*** | ***63.0*** | ***56.9*** |
| Farming | 85.1 | 66.0 | 62.0 | 55.4 |
| Food Processing | 0.1 | 0.6 | 1.0 | 1.5 |
| Manufacturing | ***4.1*** | ***6.7*** | ***8.5*** | ***7.8*** |
| Labourers | 0.2 | 1.0 | 4.1 | 3.9 |
| Artisans | 3.8 | 5.1 | 3.4 | 2.8 |
| Admin | 0.1 | 0.6 | 1.0 | 1.1 |
| Construction | ***3.1*** | ***8.9*** | ***11.2*** | ***13.2*** |
| Labourers | 3.0 | 8.8 | 11.0 | 12.9 |
| Admin | 0.1 | 0.1 | 0.2 | 0.3 |
| Trade & Hotels | ***2.8*** | ***5.3*** | ***6.7*** | ***8.5*** |
| Workers | 2.7 | 3.9 | 4.8 | 6.2 |
| Admin | 0.1 | 1.4 | 1.9 | 2.3 |
| Transport, St & Comm | ***0.6*** | ***2.6*** | ***3.3*** | ***4.2*** |
| Operators | 0.5 | 0.9 | 2.9 | 3.6 |
| Admin | 0.1 | 1.7 | 0.4 | 0.6 |
| Services | **4.1** | **4.4** | **6.5** | **8.6** |
| Operators | 1.8 | 3.8 | 6.1 | 8.0 |
| Admin | 0.1 | 0.6 | 0.4 | 0.6 |
| Others | ***2.2*** | ***5.3*** | ***0.8*** | ***0.7*** |

*Source:* Same as Table 1

It is therefore evident that the movement of workers away from the agricultural sector involves mainly a shift of surplus farm-labour into other non-farm manual work, especially in construction, manufacturing, and transport. If this shift is demand induced and growth-driven then it would be dynamic and is likely to lead to a virtuous development trajectory. However, if the shift is supply induced and distress-driven, then the process is likely to create stagnation and crisis in the countryside. Let us examine the data and evidence in this regard.

We can get some idea about the process if we look at sources of income and consumption pattern along with the employment trends. The myth that shift of workers from agro-labour to non-agro labour is *always* beneficial is perpetuated by the fact that households whose predominant source of income is agricultural labour have the least average consumption level among all types of households. There are also evidences to show that productivity, wages and working conditions

is generally higher in the non-farm sector than in the farm sector (Fisher and Mahajan 1998). The hierarchy generally applicable in rural India runs as follows – Regular Salaried households are at the top of the pile, enjoying perhaps the highest socio-economic status in the countryside. They are followed by self-employed non-agricultural households and self-employed agricultural households or cultivators in that order. Then comes the non-agricultural labourer households while the agricultural labourer households are at the bottom of the ladder. Shift of workers from the bottom towards the top would be a welcome trend and in reality we have witnessed a long run declining trend in proportion of households reporting cultivation as their predominant source of income and a rise in proportions of households reporting self-employment in non-agriculture and regular salaried job as their predominant sources of income. However, the period between 2011-18 has been quite different. While there is a substantial drop in proportion of households reporting agricultural labour as their predominant source of income, the proportion halved from over 20 per cent in 2011-12 to about 10 per cent in 2018-19, the share of self-employed in agriculture or cultivators has gone up (Table 8).

**Table 8: Households by Predominant Source of Income**

| | 2011 | 2018 |
|---|---|---|
| Regular Salaried | 10.0 | 13.4 |
| Self-employed in Non-Agriculture | 17.3 | 16.0 |
| Self Employed in Agriculture | 38.3 | 39.7 |
| Non-Agricultural Labourer | 14.4 | 20.1 |
| Agricultural Labourer | 20.0 | 10.8 |
| All Total | 100.0 | 100.0 |

*Source:* Same as Table 1.

**Table 9: MPCE by Predominant Source of Income (constant 2011-12 prices)**

| | MPCE (Rs per month) | | CAGR (% per annum) |
|---|---|---|---|
| | 2011 | 2018 | |
| Regular Salaried | 1615 | 1611 | -0.04 |
| Self-employed in Non-Agriculture | 1240 | 1296 | 0.63 |
| Self Employed in Agriculture | 1218 | 1132 | -1.04 |
| Non-Agricultural Labourer | 1043 | 1035 | -0.11 |
| Agricultural Labourer | 963 | 1026 | 0.91 |
| Aggregate | 1192 | 1216 | 0.29 |

*Note:* At constant 2011-12 prices, deflated using CPIAL/RL linked series
*Source:* Same as Table 1

There is a drop in share of households reporting self-employment in non-agriculture as their predominant source of income. But when we look at the trend in MPCE, the results seem paradoxical (Table 9). While average MPCE has remained stagnant at the aggregate level, we find that MPCE has declined for those types of households whose share has gone up! Thus, salaried job households, cultivator households and non-agricultural labour households have witnessed a fall in MPCE levels though proportions of households declaring these as their predominant source of income have increased. MPCE of agricultural labour households and self-employed in non-agriculture households are going up but proportion of households reporting these jobs as their major income source is declining. This is only possible if majority of the non-agricultural workers are engaged in low paying irregular jobs, and households have a diversified labour-use pattern with

some family members (who are surplus farm labour) taking up whatever off-farm work is available to supplement family income. This logic is supported by the fact that wage increase during this decade has been lower in non-agricultural occupations compared to agricultural occupations (Table 10). The process at play is thus a distress driven supply push of surplus agricultural labourers into non-farm jobs that are irregular and ill-paid and does not contribute much to the gross household income. Added to this is the fact that while share of non-agro-labour households are going up, their average consumption level is going down. This is clearly leading to increased inequality in the countryside with pauperisation of the masses and increased riches for a select few.

**Table 10: Real Wage by Activities (constant 2011-12 prices)**

| Occupation | Daily Wage (Rs per day) | | CAGR (%) |
|---|---|---|---|
| | 2013-14 | 2018-19 | 2013-18 |
| ***Agricultural Occupations*** | | | |
| Ploughing | 178 | 208 | 3.2 |
| Sowing (incl Transplanting) | 154 | 188 | 4.1 |
| Harvesting (incl Threshing) | 157 | 185 | 3.4 |
| Picking (incl commercial crops) | 139 | 171 | 4.3 |
| ***Non-agricultural Occupations*** | | | |
| Carpenter | 258 | 277 | 1.5 |
| Blacksmith | 208 | 228 | 1.9 |
| Mason | 284 | 307 | 1.6 |
| Weavers | 188 | 195 | 0.8 |
| Beedi Makers | 131 | 133 | 0.4 |
| Bamboo/Cane basket weavers | 169 | 164 | -0.6 |
| Handicraft workers | 229 | 252 | 1.9 |
| Plumbers | 308 | 288 | -1.3 |
| Electrician | 289 | 278 | -0.8 |
| Construction workers | 211 | 216 | 0.5 |
| LMV & Tractor drivers | 223 | 234 | 1.0 |
| Unskilled Non-agro labourers | 185 | 187 | 0.2 |
| Sweepers | 141 | 151 | 1.3 |

*Note:* At constant 2011-12 prices, deflated using CPIAL/RL linked series
*Source:*Same as Table 1

All these indicate that rural workers are not finding agricultural work and bereft of adequate human capital, the surplus labourers are either getting into low-productive, low-paid manual non-farm jobs or are falling back to self-cultivation of their marginal land holding for livelihood. The transformation process is therefore completely under duress and not something to be proud of.

## 4. Conclusion – Structural Challenges and Policy Options

What do we learn from the preceding analysis? Evidence clearly shows that the transformation process currently underway in the rural labour market in India is a distress driven one. The observed mobility of labour across sectors is mostly in response to declining demand of labour in agriculture and absence of remunerative non-farm jobs. The movements are thus from one low paying job to another with frequent seasonal switches between them. Such a transformation process is caused to a large extent by structural factors in the rural economy which we briefly enumerate below.

### *4.1 Structural Challenges*

The structural challenges that are faced in the rural economy are mostly related to the agriculture sector since it is still the dominating livelihood option for the rural masses. The first factor that needs mention is the adverse land man ratio which is deteriorating further. The average size of land-holding has decreased from approximately 2.3 hectares in 1970-71 to about 1.1 hectares in 2015-16. Not only the average has come down, the share of marginal and small holdings (below 2 hectares of land parcel) have increased to more than 85 per cent in 2015-16 (Tenth Agricultural Census, MoA, 2016). This makes most operational holdings unsuitable for mechanised farming techniques or taking up cultivation of cash crops, trapping them perennially in low productive food-grains cultivation for self-consumption. The second factor is the lack of capital formation in agriculture in recent decades. National Accounts Statistics shows that during the period 2011-18, Gross Capital Formation in Agriculture and allied activities declined in real terms from Rs. 2738.7 billion to Rs. 2737.5 billion (at constant 2011-12 prices). The share of public sector in this is just about 15 per cent (NAS, various years). This has happened as the government at Centre and States are increasingly focussing on sectors other than agriculture and even within agriculture at revenue expenditure like subsidies on inputs, MSP support, loan waivers etc. While these schemes are populist and helps the state governments (agriculture being in the State List in our Constitution) garner votes, this myopic view has manifested itself as crumbling agricultural infrastructure. Medium and micro irrigation projects are non-starters, while major irrigation projects are suffering from silted canals, reservoirs and sliding embankments. The third factor, which also relates to infrastructure, is the lack of proper agricultural storage system in the country. The storage and management of foodgrains are undertaken by Food Corporation of India, and there are ample reports of loss due to poor storage by FCI. According to NCCD (2015), India has 37.4 million tonnes of Cold Storage capacity in 2019-20, as opposed to a requirement of 35.1 million tonnes. However, more than two-third of these are for Potato only while multi-crop storage facility is just 32 per cent of the total. In addition, the regional distribution of storage capacities are also skewed and states like Karnataka, Maharashtra, Tamil Nadu that have a huge horticultural export potential lack storage facilities. Not only storage, elements of supply chain management like pre-storage cooling facilities and refrigerated transport are virtually non-existent in the countryside. It is therefore no surprise that about 15 per cent of horticulture products and 6-10 per cent of meat & fish are wasted after harvest. This also makes farmers vulnerable and averse to diversify into crops other than those covered by MSP. The fourth structural problem is lack of both rural industrialisation and rural service sector growth. While MSMEs in rural India are thwarted by lack of reliable infrastructure (frequent power cuts and *brown-outs*, pot-holed roads, being some of them), rural services sector are stifled as people in rural areas prefer to visit the nearby towns for their service needs. This lack of demand for *local* non-farm products and services in the rural areas has prevented dynamic transformation of the rural economy. The fifth structural factor that inhibits rural transformation is lack of trained and skilled manpower in the rural areas. Education and training facilities in the rural areas are poor, stuck in decades old routine and traditional learning processes, and even within that quality of teachers and teaching leaves much to be desired. There is no connect between the skill demand in the modern industrial and service sectors and those that are routinely meted out in the name of vocational education in rural areas. As a result, though industries often venture out to rural areas because of low price of land and other tax-sops, inadvertently the workers are either *immigrants* who put up in a *township* set up by the factory or commute from the nearby city. Locals, lacking the skill necessary to work in modern capital intensive machine-dominant factories, simply do not get any benefit of such industrialisation. Often, the inputs of the factories are also brought in from outside and as a result this industrialisation process does have neither

forward nor backward linkage with the rural economy.

### *4.2 Opportunities and Policy Options*

Even with such herculean challenges, there are opportunities galore. The size of the rural population itself is a large potential market – both for labour input and for selling the non-farm commodities. India's projected rural population in 2021 was about 900 million (MoHFW, 2020) – slightly higher than the entire population of Europe and three times the population of USA! If properly nurtured, this segment can drive India's economy to new heights. Second, the aspirations of rural India has increased in leaps and bounds and this drive for better lives can be tapped by the State to create an atmosphere of entrepreneurship in the rural areas. Third, the global economy is staring at a looming food crisis and there is great scope for exporting surplus foodgrains after keeping emergency food-stock. Fourth, there is a growing urban demand for organic eatables and traditional handwoven textiles and handicrafts. This provides ample scope for expansion of rural non-farm sector.

Under such situation, the policy thrust has to be multi-pronged. First, public capital formation in agriculture should be revived at the earliest since the small and marginal farmers (the largest segment in the countryside) lack private capital to make farming productive and profitable. Within that broad policy, thrust must be on creation and maintenance of fixed capital like agro infrastructure. Second, the agricultural input supply chain presently has been mostly privatised and left to the vagaries of open market, whereas information asymmetry and bottlenecks plague the marketing segment of agricultural produce. This was sought to be remedied by the introduction of farm sector reforms in recent years, but could not be implemented due to intense opposition from a section of the farmers who want the exclusivity of APMCs to continue. A pragmatic way out can be to expand the scope of APMCs and decentralising procurement of crops. Allowing contract farming under close monitoring of the government to prevent exploitation of rural farmers by corporates can also bring more income to the farmers. Third, skill formation among rural youth and imparting saleable technical and vocational skill will improve the human capital base of rural India and enable the rural workers shift to 'in-demand' jobs rather than queuing up for the already overcrowded low paying non-farm job market (mostly in construction, hotels, and transport sectors). Fourth, better infrastructure and credit facilities would also facilitate rural youth to take up entrepreneurial ventures. The group credit schemes linked to SHGs are mostly used for consumption and tiding over emergency medical expenses. Linking SHGs to productive activities like food processing, textile products, handicrafts and setting up a marketing chain to showcase and sale these products would help in rural income generation. The SARAS project of the Ministry of Rural Development of Union government has made fairly good progress in the last decade but its success is limited to specific regions and products. This has to be broad-based and integrated with KVIC programmes. In fact, Khadi as a brand has huge potential but its linkage with local artisans is again very region specific. The SABALA fairs in West Bengal, organised from block to taluka to district and to state levels have enabled SHGs throughout the state to have a stable income and may be replicated in other parts of the country. Fifth, setting up multi-utility service centres in the villages that would provide repair and maintenance services to myriad of farm and household machineries and gadgets can open up new vistas of job opportunities. However, contrary to popular perception, the changes in rural labour dynamics cannot neglect the agricultural sector though apparently its share in employment is declining. It is to be remembered that agricultural income is the driver of rural non-farm demand and only a sustained rise in agricultural profitability and income can usher in a growth spurt in rural transformation process. 75 years after the death of Mahatma Gandhi, it is time to revisit his idea of Gram Swaraj and embrace its spirit.

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# IMPACT OF COVID-19 PANDEMIC ON LABOUR MARKET OUTCOMES AMONG VULNERABLE HOUSEHOLDS: A CASE STUDY OF SLUM DWELLERS IN SELECT CITIES IN INDIA

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**Abstract:** The dual shock of the outbreak of COVID-19 and its associated lockdown had an adverse impact on the economy, especially on the urban labour market across the globe. In the Indian context, this external shock related to the pandemic outbreak had a strong and negative impact on the already weak labour market characterized by high unemployment rates and a large share of workers engaged in informal work.

The macro picture of the labour market based on secondary sources fails to unmask the nature and the extent of the impact on the employment conditions of low-income and less educated urban workers. To bridge the gap, this micro-study based on a survey of 1208 households living in slums of 10 cities intends to see the impact of lockdown on the livelihoods of urban households living in slums and their survival mechanisms to deal with their rapidly changing economic conditions. The study reveals that the principal source of income of a large share of slum households was affected during both phases of lockdown, but the impact was more severe during the first wave due to the stringency of the lockdown. The vulnerable casual wage workers, whose income levels vary depending on their daily participation in the labour market, have been affected more compared to the salaried workers with some job or income security. However, the second wave had harsh adversities on a large section of regular salaried workers, pushing them to the threshold of poverty. Overall, around two-thirds of the principal earning members of the surveyed households could resume their livelihood or diversify their livelihood opportunities in the subsequent period of the lockdown. It is noted that self-employment was a survival strategy for slum dwellers. Therefore, the policy focus needs to consider self-employment as a coping mechanism to economic shocks.

**Keywords:** COVID-19, Lockdowns, Urban labour market, Job loss, New poor, Survival mechanism and self-employment

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## 1. Introduction

At the beginning of 2020, the world experienced the outbreak of SARS-COVID—19, one of the worst pandemics in history, impacting millions of lives and livelihoods across different parts of the world. India reported its first case on January 30, 2020, in Kerala (PIB, 2020), which followed a gradual increase in infected cases across different parts of the country. A timely nationwide lockdown was instituted on March 25, 2020, to curb the virus's spread. The country-wide lockdown in March 2020 gave the nation only four hours' notice before national and interstate borders were sealed and most economic activity came to a halt. The lockdown has been one of the most stringent lockdowns in the world and, therefore, significantly affected the Indian economy at large.

The vast majority, especially informal workers situated on the lowest occupational ladder, had lost their employment due to the COVID-19-associated lockdowns that resulted in huge economic shock and the closure of a vast array of economic activities. According to ILO (2020) estimates, by April 2020, globally, 1.6 billion informal workers, comprising 76 per cent of the total number of workers in informal employment, have been affected due to the state-enforced lockdowns through the COVID-19 pandemic. It is also estimated that earnings have declined by around 60 per cent in total.

Consumer Pyramid Household Survey (CPHS) by the Centre for Monitoring Indian Economy (CMIE) estimated a loss of employment of 122 million in 2020 in India following the lockdowns (The Hindu, 2020). It is to be noted that the majority of its economic consequence is borne by the vulnerable workers. Almost 93 per cent of all the workers estimated to be engaged in the informal sector faced loss of employment or a decline in income. As the majority of these workers lack job security and earn fluctuating and meagre remuneration, the consequence of lockdown was enormous.

As the urban centres were severely affected due to the intensity of the outbreak of COVID-19, urban residents faced a worse impact on their livelihoods. The adverse effect was far more severe for the urban poor, primarily relying on the informal economy. Furthermore, the migrant labourers, especially from the bottom of the consumption pyramid, who were engaged in various work in urban and peri-urban areas, bore the worse consequences of the lockdown (Srivastava, 2020b). The conditions of seasonal migrants have been even more precarious. Except for a few engaged in essential services, most of the seasonal migrants lost their employment and were forced to return to their place of origin in the absence of adequate social protection measures at the destination. The migrants employed through contractors also lost their employment and experienced pending wages as a result of the lockdown (Srivastava, 2020a).

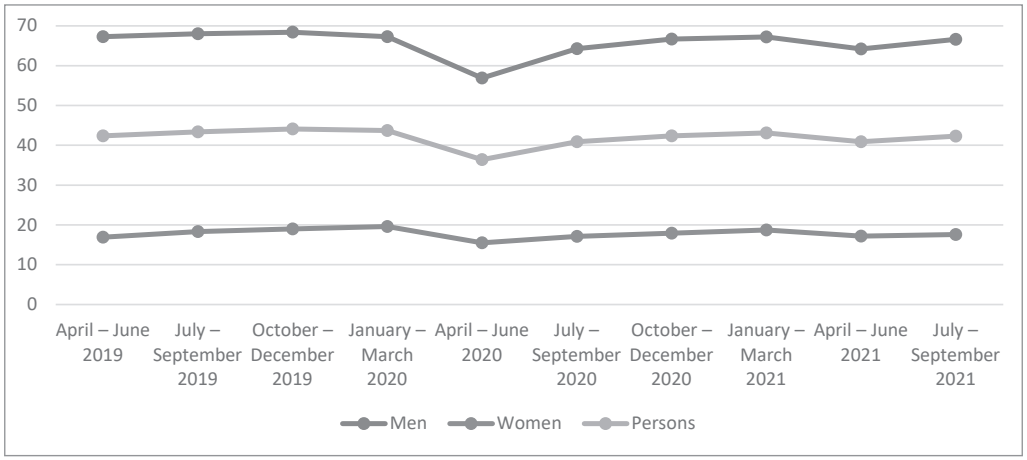
As we are witnessing recurring waves of the outbreak of the pandemic since its onset in 2020, we need to understand the impact of such external shocks on the livelihoods and family income of the urban poor in order to plan for inclusive and effective policy measures. Against this background, this paper aims to understand the impact of the COVID-19 outbreak and its associated lockdowns on the labour market in general and the livelihoods of the urban poor in particular.

## 2.Outbreak of COVID-19 and Labour Market Outcome: A Macro Scenario

The outbreak of COVID-19 and associated lockdowns had a long-lasting impact on the urban labour market of this country. According to the Centre for Monitoring Indian Economy (CMIE) figures, the lockdown enacted in March 2020 immediately rendered around 122 million people jobless (The Hindu, May 2020). Around 75 per cent of these were small traders and daily wage labourers, with little to no savings to see them through the lockdown jobless (ibid.).

Among the available nationally representative databases, *Periodic Labour Force Survey Quarterly Bulletins* also highlighted changes in urban labour market parameters during this period. It is to be noted that The Ministry of Statistics and Programme Implementation (MoSPI) started conducting the *Periodic Labour Force Survey (PLFS)* since 2017-18, which collects labour force information in urban areas and revisits 75 per cent of sample urban households in each quarter to prepare panel information on the labour market condition. The broad results are released in the form of the *Quarterly Bulletins of Periodic Labour Force Survey* for each of the quarters, highlighting the major labour market indicators for urban India. These quarterly bulletins provide estimations based on Casual Weekly Status (CWS) related to labour force participation, workforce participation and unemployment rates for the economically active age group of 15 years and above and the youth labour force (15-29 years). These quarterly bulletins provide critical evidence to understand the impact of COVID-19 on the urban labour market. To this purpose, this paper considers these bulletins for the period of September 2019 to September 2021, highlighting major changes in the labour market situation prior to and following the first and second waves of COVID-19 outbreaks and the associated lockdowns.

**Figure 1: Trends in Workforce Participation Rate (%) among 15 years and above, April-June 2019 to July-September 2021**




*Source:* Quarterly Bulletin of Periodic Labour Force Survey, 2019 to July-September 2021

### *2.1 Change in Workforce and Unemployment*

Figure 1 and 2 highlights the change in workforce participation rate (WPR) and unemployment rate (UR) for the period between April-June 2019 and July-September 2021, which covers the peaks of both the first wave in 2020 and the second wave in 2021. It is clearly noted that WPR in urban areas noted a sharp decline from 43.7 per cent to 36.4 per cent between January-March 2020 to April-June 2020, soon after the initiation of the nationwide lockdown during the first wave of the COVID-19 outbreak. Also UR increased from 9.1 per cent to 20.8 per cent between these two consecutive quarters, which clearly highlighted the extent of job loss during this period. In fact, CMIE monthly estimates reported a higher unemployment rate of almost 25 per cent for the month of April 2020 (https://www.cmie.com/). As per the CEDA-CMIE bulletin, more than 40 million people in urban India lost jobs in April 2020 (Bhardwaj, 2021).

However, the unemployment rate dropped from 20.8 per cent to 13.2 per cent in the following quarter (July-September 2020) as a result of the ease of the lockdown and the reopening of economic activities in a phased manner. As most sectors went through a decline in consumption-led demand, most of the sectors noted a large-scale retrenchment to cope with the crisis. Therefore, WPR took another quarter to reach its pre-COVID level as the labour absorption capacity of the market had gone down. Furthermore, the unemployment rate took a much more extended period to touch the pre-COVID rate (January-March 2020) and reached the pre-COVID levels only in January-March 2021. A decline in wage levels had pushed the economically inactive members to join the labour force to keep the household income afloat. UR again noted an increase during April-June 2021 quarter following the second wave of the COVID-19 outbreak and its associated lockdown. The unemployment rate became 12.6 per cent during this quarter, much lower compared to April-June 2020 quarter, as lockdown during this phase was regional and less stringent considering the devastating effect of lockdown during the first wave in 2020.

**Figure 2: Trends in Unemployment Rate (%) among 15 years and above, April-June 2019 to July-September 2021**


*Source:* Quarterly Bulletin of Periodic Labour Force Survey, April-June, 2019 to July-September 2021

***Impact on Women:*** A gender-disaggregated analysis highlights the precarious condition of women in the urban labour market in terms of a prolonged period of increased unemployment following the April-June 2020 quarter. In fact, there has been a declining trend in women's WPR even prior to the outbreak of the pandemic, mostly as a result of the stigma attached to women's participation in the labour market. Inadequate employment generation through the promotion of the labour-intensive manufacturing sector is also a reason behind low workforce participation among women in urban areas (Sarkar et al., 2019). Although women's participation in general is much lower than men's, the decline in WPR during the first wave of the pandemic in 2020 was much sharper among men compared to women. Desai et al. (2021), based on CMIE data, argued that men's sharp decline in WPR was due to the fact they are more concentrated in wage employment. However, the PLFS quarterly estimates highlight that UR among women was marginally higher during the April-June 2020 quarter (Figure 2). Although men suffered more than women during the lockdown (April-June 2020 quarter) in terms of job loss, their recovery in the job market was much faster than

women (Abraham et al., 2021). On the contrary, women had to go through a prolonged period of increased unemployment as new women entrants found it difficult in the already stressed labour market. As per PLFS quarterly estimates, UR remained 15.8 per cent among women during the next quarter (July-September 2020), more than 3 per cent points higher than men's. Furthermore, when men's unemployment rate came down to the pre-COVID level during January-March 2021, women's unemployment rates remained higher than their pre-COVID level by 1 per cent point. Also, during the second phase of the lockdown in 2021, women's unemployment rate became 14.3, higher than men's unemployment rate of 12.6 (Figure 2). Based on a Consumer Pyramid Household Survey (CPHS) by CMIE data, Abraham et al. (2021) also mentioned that a higher section of women found it difficult to get back into the workforce as compared to men.

***Impact of Lockdown on Youth:*** The impact of COVID-19-induced lockdown was much more pronounced on the youth (15-29 years) compared to all workers above 15 years. Even prior to the lockdown, the unemployment rate among youth was already higher by 12 per cent points (Figure 3), indicating the lack of labour absorption due to jobless growth in the recent decades. The unemployment rate among youth became 34.7 per cent during April-June, 2020, at least 14 per cent points higher than all 15 years and above labour force, indicating a far worse impact of a pandemic on youth employment. Based on the Consumer Pyramid Household survey (CPHS) by CMIE, Abraham et al. (2021) mentioned that youth (15-24 years) were four times more affected during lockdown compared to the adults (30-44 years) in the labour market.

### *2.2 Sectoral Shift in Composition of Workforce*

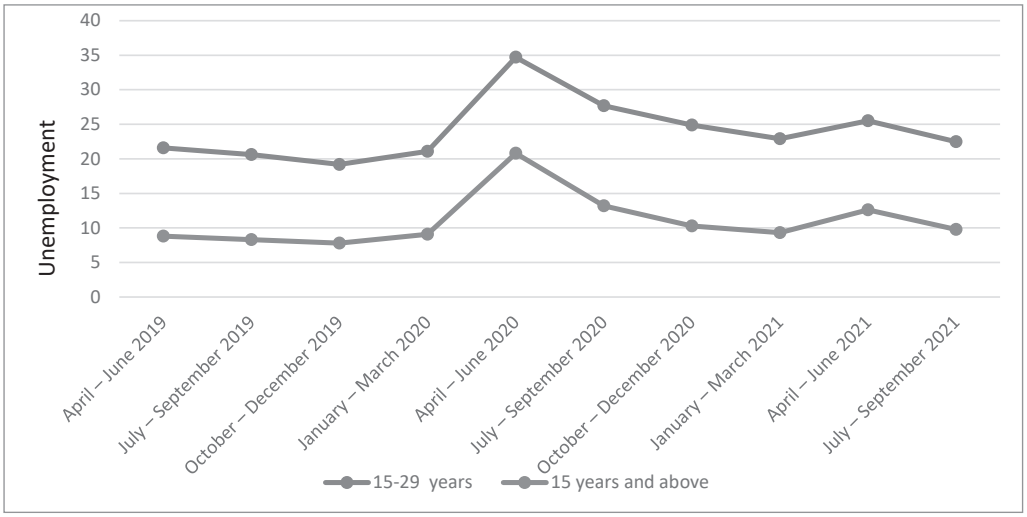
As the paper compares the change in the composition of the workforce in two phases covering the peak of the lockdowns, i.e., 1) Phase 1: January-March 2020 to July-September 2020, 2) Phase 2: January-March 2021 to July-September 2021, a substantial decline in casual wage employment could be noted during the peak quarters (April-June 2020 and April-June 2021) (Figures 4 and 5). A sudden decline in casual wage employment was an immediate impact of the lockdown, particularly during the first wave in 2020, due to the complete closure of the construction sector. CMIE data also highlighted the harsh impact of the lockdown borne by the daily wage labourers who faced maximum job loss (Bhardwaj, 2021). To be noted, the decline in the share of casual wage labourers during the second wave in 2021 was much lower because of the lenient nature of the lockdown during this phase.

Furthermore, both the quarters of the peak of the outbreaks noted a substantial share of self-employed workers who remained idle as a result of restricted mobility. Bhardwaj (2021) highlighted the harsh impact of the lockdown on the small traders. It is noted that 16.3 per cent of the workforce during the April-June 2020 quarter were self-employed workers who could not work and faced a massive decline in income (Figure 4). The corresponding figure was 6.3 per cent during April-June 2021, much lower than April-June 2020 (Figure 5). It could be noted that the subsequent quarters of the lockdown quarters noted a sharp decline in the share of idle self-employed workers. Contrary to the casual wage labourers, the share of regular salaried employment did not change drastically during this period as the published figures do not provide disaggregated figures for those salaried workers who could not work during the reference period.

The findings of the PLFS therefore indicate the broad changes in the labour force as a consequence of the outbreak of the pandemic. It is noted that the impact on the labour force during the second wave in 2021 was far less severe compared to the first wave in 2020, and it can be reflected in the unemployment rates and the extent of change in the workforce composition during this period. However, the quarterly bulletin released by MoSPI fails to capture the impact

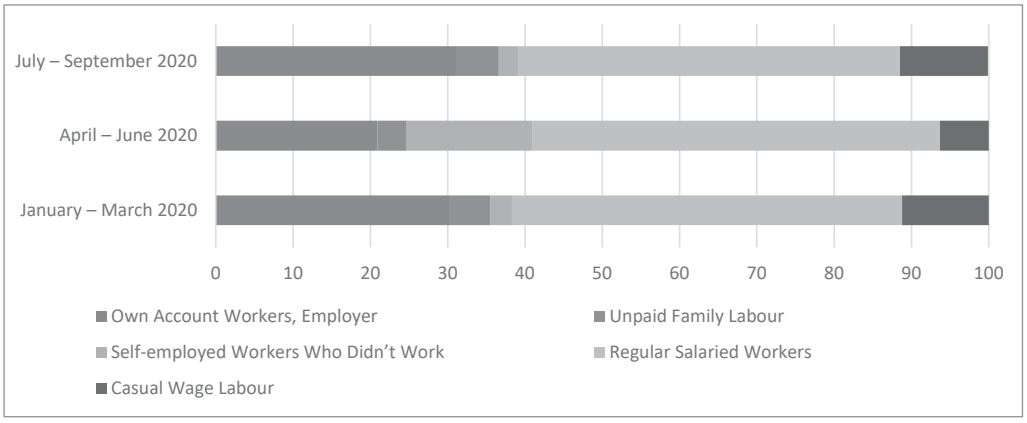
of lockdowns on a granular scale. Furthermore, the dearth of information related to the quality of employment and the background information of the workers fails to highlight the economic adversities faced by the urban poor.

**Figure 3: Trend in Unemployment Rate for Different Age-groups, April-June 2019 to July-September 2021**




*Source:* Quarterly Bulletin of Periodic Labour Force Survey, April-June, 2019 to July-September 2021

**Figure 4: Composition of Broad Types of Employment Before, During and After COVID-19 First Wave Lockdown, 2020**

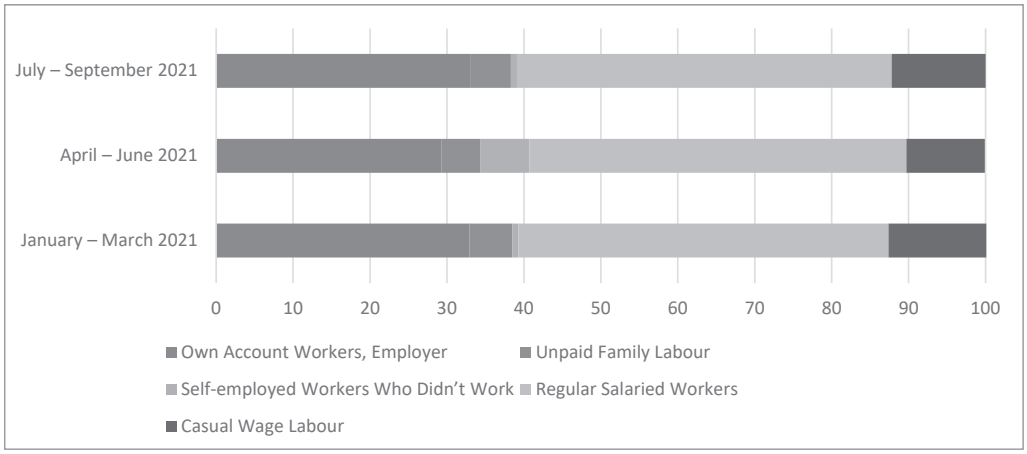



*Source:* Quarterly Bulletin of Periodic Labour Force Survey, April-June, 2019 to July-September 2021

Against this background, the current paper aims to fill this gap in the understanding and tries to explore the impact and intensity of the outbreak of COVID-19 on the livelihoods of the urban poor. The following sections of the paper are primarily based on a multi-locational primary survey of urban slum dwellers to understand the impact of COVID-19 and its associated lockdowns on the lives and livelihoods of the urban poor. The following part of the paper is divided into broadly four

sections. The first section discusses the study and the characteristics of the households surveyed. The following two sections explore the impact of the pandemic on livelihoods and the change in household income, respectively. The final section discusses the findings in a macroeconomic and policy context.

**Figure 5: Composition of Broad Types of Employment Before, During and After COVID-19 Second Wave Lockdown, 2021**




*Source:* Quarterly Bulletin of Periodic Labour Force Survey, April-June, 2019 to July-September 2021

## 3. The Study

The following sections of the paper are primarily based on a primary survey titled 'Rapid Survey of Slum Dwellers in Indian Cities, 2021' conducted by the National Institute of Urban Affairs in August-September 2021, which aims to understand the impact of COVID-19 and its associated lockdown on the lives and livelihoods of the urban poor. As the intensity of the outbreak of COVID-19 was far more severe in big cities and the big cities exhibited higher levels of inequalities, the survey was limited to select metropolitan cities. The sample survey covered 1208 slum households living in various slum clusters in 10 selected cities in India, i.e. Aurangabad, Bengaluru, Bhopal, Delhi, Indore, Jammu, Jodhpur, Lucknow, Pune and Ranchi (Table 1 and Figure 6). The survey was based on a purposive random sampling method, where a total of 100 samples from each of the cities were selected from different slum clusters with a representative proportion of notified and non-notified slums representing the socio-economic and geographical variations of the city.

This study collected labour market-related information for two different periods, i.e., 1) the First wave of the pandemic and associated lockdown in 2020, and 2) the Second wave of the pandemic and associated lockdown in 2021. In addition, it collected information on the impact of lockdown on the employment of the household members, nature of the impact, resumption of work in the post-lockdown period, degree of decline in the family and other related information separately for each of the periods.

However, the major limitation of the study is that the survey is solely focused on the situation of the metropolitan cities and does not shed light on the impact of the pandemic on the livelihoods of slum dwellers in non-metropolitan and other urban centres of smaller size. The study also does not include other categories of urban poor, i.e. homeless or those living on construction sites.

**Figure 6: Study Locations of Rapid Survey of Slum Dwellers in Indian Cities, 2021**


**Table 1: Distribution (In No.) of Surveyed Households**

| | Non-notified Slum | Notified Slum | Total |
|---|---|---|---|
| Aurangabad | 0 | 121 | 121 |
| Bangaluru | 40 | 81 | 121 |
| Bhopal | 88 | 35 | 123 |
| Delhi | 41 | 79 | 120 |
| Indore | 53 | 70 | 123 |
| Jammu | 78 | 42 | 120 |
| Jodhpur | 44 | 76 | 120 |
| Lucknow | 26 | 94 | 120 |
| Pune | 0 | 120 | 120 |
| Ranchi | 0 | 120 | 120 |
| Total | 370 | 838 | 1208 |

*Source:* NIUA- Primary survey, 2021

Each of the selected households was surveyed using a structured questionnaire, which collected information on various facets of the lockdown and its impact on the lives and livelihoods of the slum dwellers.

### *3.1 Characteristics of the Surveyed Households*

Table 2 highlights that economic disadvantage is one of the dominant characteristics of the surveyed slum households. It is noted that the average Monthly Per Capita Expenditure of surveyed households in the pre-COVID-19 period was merely Rs. 1906.5. In terms of the principal source of household income, 37 per cent of households were primarily dependent on self-employment, mostly dependent on small trading and service provisions and 25.7 per cent households were dependent on casual wage labour. However, 32.7 per cent of the surveyed households were dependent on regular salaried work, mostly engaged in informal sector enterprises, lacking all the social security benefits.

It is also noted that more than 36.1 per cent of the surveyed slum households belonged to Scheduled Caste (SC), and another 27.6 per cent of surveyed slum households belonged to Other Backward Classes (OBC). On the contrary, only 19.6 per cent of the surveyed households belonged to the forward social group. Furthermore, 78.8 per cent of households were male-headed households, and the remaining 21.2 per cent were female-headed households (Table 2).

## 4. Impact of COVID-19 on Livelihood of the Urban Slum Dwellers

The outbreak of the pandemic posed a serious threat to the sources of livelihood of the urban slum dwellers. The external shock of strict lockdowns during the peaks of the outbreak exposed a large number of workers to a world of uncertainty. A majority of slum dwellers were already in precarious employment in terms of lack of job and social security even before the onset of the pandemic in the beginning of 2020. The first external shock came in March 2020, with the enactment of nationwide lockdown following the outbreak of COVID-19. Moreover, the stringency of lockdown imposed restrictions on most of the economic activities, at least for the month of April 2020. With the ease of lockdown in the following months, the labour market situation started to improve to a certain extent. However, periodic and more localized lockdowns continued for the following months and had its prolonged impact on the labour market.

**Table 2: Household Characteristics of the Surveyed Slum Households**

| HH Characteristics | | Mean | |
|---|---|---|---|
| Average HH Size | | 6 | |
| Average Per Capita HH Expenditure (before March 2020) (Rs.) | | 1906.5 | |
| | | **Frequency** | **Percentage (%)** |
| Social Group | Scheduled Caste | 436 | 36.09 |
| | Scheduled Tribes | 202 | 16.72 |
| | Other Backward Classes | 333 | 27.57 |
| | General | 237 | 19.62 |
| Gender of HH Head | Female | 256 | 21.19 |
| | Male | 952 | 78.81 |
| Employment Type of Principal Earning Member | Self-employed | 447 | 37 |
| | Regular Wage/salary | 395 | 32.7 |
| | Daily/weekly Wage Earner | 310 | 25.66 |
| | Others | 56 | 4.63 |

*Source:* Primary survey, August-September, 2021; N: 1208

The household survey indicated that the employment of members from 95 per cent of the surveyed slum households was affected during the lockdown in both phases (Figure 7). However, the nature of the impact on employment had been different for different households, and there are also differences in the nature of impact between the two waves of the pandemics.

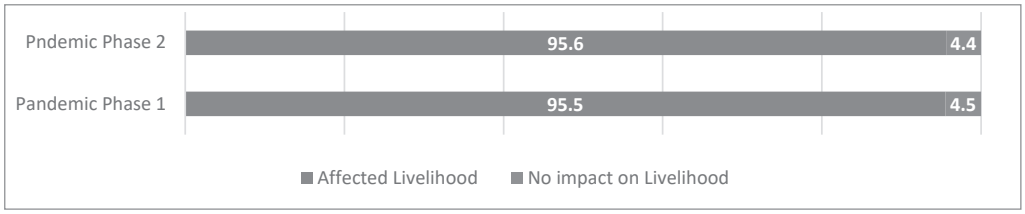
The survey collected information related to the exact nature of the impact on the employment of slum dwellers, which can be broadly categorized as 1) loss of job, 2) pending salary, 3) no work, no payment, 4) reduction of wage/salary, 5) increased workload without an increase in payment, 6) changed sector, 7) increased income, and 8) others.

It is seen that during the first wave in 2020, two-thirds of the slum households mentioned that there was no work (Figure 8) as the principal employment of nearly two-thirds of the households was either self-employment or casual wage work. Both these types of employment faced the major brunt of the lockdown (Bhardwaj, 2021). Furthermore, a third of slum households mentioned the loss of jobs, and around 20 per cent of households experienced a reduction in salary/wages. As most of the slum dwellers were employed in informal sector enterprises, they faced mass retrenchment and reduction in remuneration as a consequence of the economic downfall caused by the lockdown. Around 10 per cent of households also mentioned pending salary. Furthermore, 17 per cent of households mentioned that members experienced increased workload to cope with the decreased income. Also, 8.6 per cent of households mentioned that they had changed the sector of employment as they lost their employment during the first wave (Figure 8).

Although 95 per cent of households' livelihoods were affected in both the waves, the impact was less severe during the second wave in 2021 compared to the previous wave in 2020 (Figure 8). Although 55.9 per cent of the surveyed households suffered the problem of dearth of work and payment, their share was much lesser compared to the previous wave in 2020. Also, the length of unemployment was much shorter compared to the first wave. Similarly, a lesser share of the surveyed households mentioned job loss during the second wave compared to the first wave. However, 27 per cent of households mentioned a reduction in wage/payment, and another 24.3 per cent of households mentioned increased workload without any increase in salary/payment during this wave, which was higher than the first wave. Although the impact was less harsh in terms of absolute loss

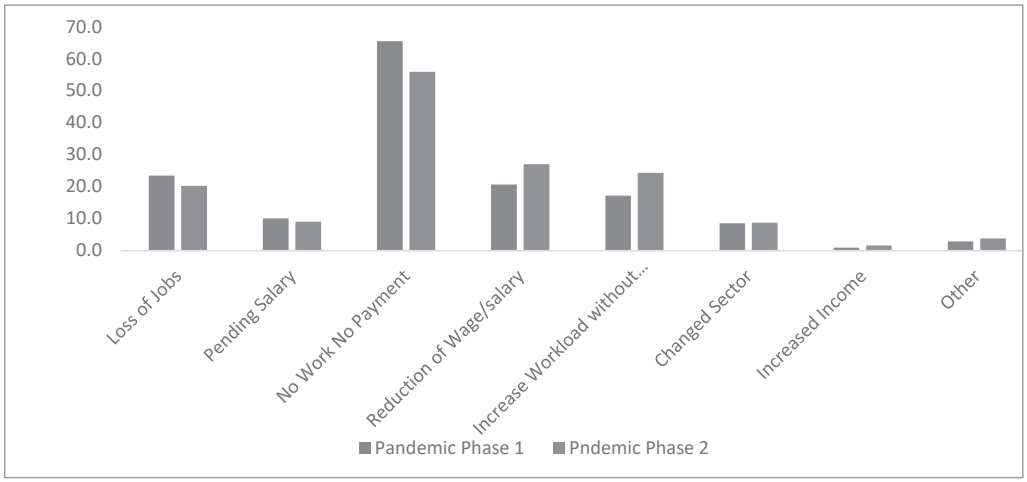
of livelihood, poor households had to bear the brunt of the economic uncertainties in both the waves.

**Figure 7: Distribution of HH (%) as per Impact of Pandemic on Livelihood**




*Source:* Primary survey, August-September, 2021; N: 1208

**Figure 8: Distribution of HHs (%) as per Nature of Impact on Livelihood Cause by Pandemic**




*Note:* Multiple response question, each of the category is representing share of HHs (%) responses yes to this category. Total sum of the percentage is more than 100%

*Source:* Primary survey, August-September, 2021; N: 1208

A further disaggregation by the activity type of the principal household members reveals that different types of households experienced very different types of challenges during these two periods (Table 3). It is noted that the first wave had been harsh for all types of households, though casual wage labourer households faced the harshest impact. Around 70 per cent of the casual wage labour households mentioned that they had neither any work nor any payment during this period. Because of the stringency of the lockdown, more than 60 per cent of regular salaried and self-employed households also mentioned the dearth of work during this period. Furthermore, 43.6 per cent of the households with casual wage employment as principal activity mentioned job loss during the first wave in 2020, much higher than the regular salaried households and self-employed households. On the contrary, around 30 per cent of regular salaried households reported a reduction in salary and increased workload, highlighting the precarious nature of salaried employment among slum households. To be noted, the self-employed households were comparatively more resilient.

**Table 3: Nature of Impact on Livelihood across Different Types of Households**

| | Daily/weekly | Regular wage | Self-employed | Others | Total |
|---|---|---|---|---|---|
| | | | Pandemic Wave I | | |
| Loss of jobs | 43.6 | 24.1 | 11.6 | 20.0 | 23.6 |
| Pending salary | 16.9 | 9.3 | 7.3 | 7.3 | 10.2 |
| No work, no payment | 71.8 | 67.1 | 65.4 | 34.5 | 66.0 |
| Reduction of wage/salary | 21.4 | 28.2 | 14.8 | 14.5 | 20.9 |
| Increased work-load without increase in pay | 21.4 | 29.3 | 5.7 | 7.3 | 17.4 |
| Had to change sector of work | 8.3 | 8.0 | 8.0 | 20.0 | 8.6 |
| Increased income | 0.8 | 0.5 | 1.4 | 1.8 | 1.0 |
| Other | 0.8 | 2.6 | 3.6 | 9.1 | 2.9 |
| Can't say | 1.5 | 3.4 | 6.8 | 18.2 | 5.0 |
| | | | Pandemic wave II | | |
| Loss of jobs | 38.7 | 19.4 | 10.3 | 20.0 | 20.4 |
| Pending salary | 15.8 | 9.1 | 4.6 | 14.5 | 9.2 |
| No work, no payment | 70.3 | 55.7 | 51.5 | 32.7 | 56.4 |
| Reduction of wage/salary | 27.1 | 36.8 | 20.0 | 18.2 | 27.2 |
| Increased work-load without increase in pay | 24.1 | 32.1 | 18.9 | 18.2 | 24.5 |
| Had to change sector of work | 9.8 | 8.8 | 7.1 | 18.2 | 8.8 |
| Increased income | 0.4 | 0.5 | 3.6 | 0.0 | 1.7 |
| Other | 4.1 | 5.2 | 2.3 | 5.5 | 3.8 |
| Can't say | 2.3 | 2.1 | 7.7 | 16.4 | 5.0 |

*Note:* Multiple response question, each of the category is representing share of HHs (%) responses yes to this category. Total sum of the percentage is more than 100 per cent

*Source:* Primary survey, August-September, 2021; N: 1208

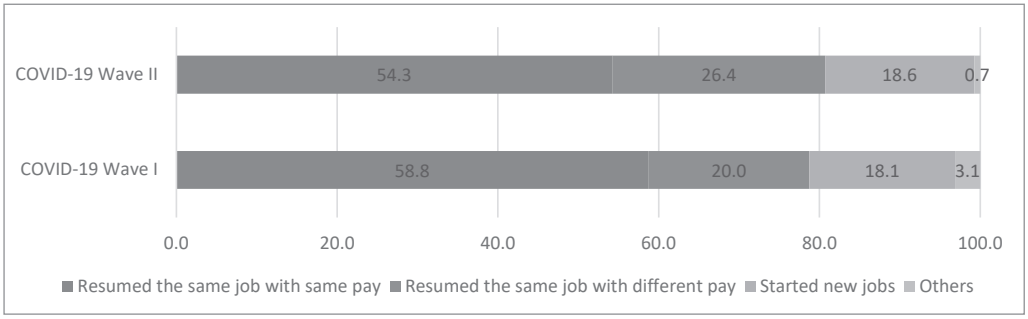
Except for the casual wage labourer households, the remaining households reported lesser harsh challenges during the second wave in 2021. Similar to the first wave, 70 per cent of casual wage labourer households reported a dearth of work as well as payment during the second wave, which was much higher compared to 55 per cent of regular salaried households and 51.5 per cent of self-employed households. Although there is a decline in the share compared to the first wave, 38.7 per cent of casual wage labourer households and 19.4 per cent of regular salaried households faced job loss during the second wave. Although there is a decline in job loss and a dearth of jobs, an increased share of regular salaried households faced challenges related to a reduction in salary (36.8%) and increased workload (32.1%) (Table 3). This indicates that the regular salaried workers faced increased challenges as many enterprises had reduced their budget due to the economic crisis caused by the pandemic. Although a smaller fraction of the workers actually faced formal job loss, most of them were engaged in that kind of work where no remuneration and benefits are provided in such a period of external shock.

## 5. Resumption of Work

The open unemployment rate is lower among low-income households as a large section of the workers from these households went back to work as they could not afford prolonged period of joblessness. Although the impact of the pandemic and its associated lockdowns on livelihoods had been devastating during the peak of the lockdown in the first wave, around 60 per cent of the surveyed households, where household members faced a loss of jobs, resumed work in the post-lockdown period. On the contrary, one-third of the slum dwellers who faced job loss could not resume work even after the end of the lockdowns. This indicates the nature and extent of shock on the national economy and labour market, which has reduced the labour absorption capacity of the market.

A further disaggregated analysis across different types of households highlighted that resumption of work after the first wave of the pandemic was higher among regular salaried households compared to the others. It is noted that three-fourths of the regular salaried household could resume their work by the end of the lockdowns in both the phases. On the contrary, only 41.4 per cent of casual wage labourer households could get back to work by the end of the first wave, which is a result of reduced demand for casual workers in sectors like construction for a prolonged period. Contrary to the wage-earner households, 70.6 per cent of households with self-employment as the principal source of income could resume their work by the end of the lockdown in the first phase wave. However, the labour absorption capacity of self-employment was noted to decline during the second wave as only 62.2 per cent of self-employed households could resume their work (Figure 9).

**Figure 9: Distribution of HHs (%) as per Nature of Resumption of Livelihood**




*Source:* Primary survey, August-September, 2021; N: 1208

A further disaggregation highlighted that only 60 per cent of those who resumed work by the end of the pandemic joined the same work with the same level of pay. However, one-fifth of the workers joined the same work for reduced pay, which unmasks the increased precarity of the urban labour market in the post-lockdown period in 2020. In addition, 18 per cent started with a new job because they found a lack of demand in the sector of their previous employment. The absorption capacity of the urban labour market was noted to decline by the end of the second wave in 2021, probably as a result of a prolonged period of reduced consumption-led demand and economic crisis. Therefore, it is seen that only 54.3 per cent of the households who resumed work afterwards could join the same work for the same pay. On the other hand, more than a quarter of households resumed the same work with reduced pay. Furthermore, 18.6 per cent of households mentioned changing sectors of employment following the second wave (Figure 9).

A disaggregated analysis across different types of households highlights that 57.7 per cent of regular salaried households were able to join previous employment at the same pay by the end of the first wave. However, 23.9 per cent of regular salaried households who have resumed work could not return to their previous work because of either closure of the enterprise or retrenchment as a strategy adopted by the enterprises. Many started their own business during the first wave as a coping strategy. In addition, 17 per cent joined work at reduced pay. It is noted that regular salaried households had a worse impact during the second wave when only 51 per cent could resume the same work at the same level of payment. Furthermore, 28.1 per cent joined the work for reduced pay. Similar to the first phase, 21.1 per cent joined different work (Table 4).

**Table 4: Distribution of HHs (%) as per Nature of Resumption of Livelihood across Different Types of Households**

| | Pandemic Wave I | | | | Pandemic Wave II | | | |
|---|---|---|---|---|---|---|---|---|
| **HH Type** | **Resumed same work at same pay** | **Resumed same job at different pay** | **Started new work** | **Others** | **Resumed same work at same pay** | **Resumed same job at different pay** | **Started new work** | **Others** |
| Daily/weekly labour | 62.5 | 22.9 | 10.4 | 4.2 | 58.0 | 26.0 | 14.0 | 2.0 |
| Regular salaried | 57.7 | 16.9 | 23.9 | 1.4 | 50.9 | 28.1 | 21.1 | 0.0 |
| Self-employed | 55.6 | 22.2 | 19.4 | 2.8 | 53.6 | 25.0 | 21.4 | 0.0 |
| Total | 58.8 | 20.0 | 18.1 | 3.1 | 54.3 | 26.4 | 18.6 | 0.7 |

*Source:* Primary survey, August-September, 2021; N: 1208

It is seen that 22.2 per cent of self-employed households who resumed work by the end of the first wave noted a reduction in income. However, the figure became 25 per cent during the post-second wave, which indicated the impact of a prolonged period of the economic crisis on these households. Furthermore, 21.4 per cent of households who resumed work changed sector as these self-employed households tried to diversify their business with more profitable and resilient alternatives (Table 4). Many slum households started selling food items, vegetables, and masks as they noted an increased demand for these products.

## 6. Changes in Household Income

During the first wave of the outbreak of COVID-19 and its associated lockdown in March 2020, close to 60 per cent of the surveyed slum households reported a significant decline in family income, mainly as a result of the dearth of work and job loss caused by the pandemic. Furthermore, one-fifth of households reported a moderate and marginal decline in family income. On the contrary, only 10.7 per cent of surveyed households reported no impact on the household income owing to the lockdown (Figure 10).

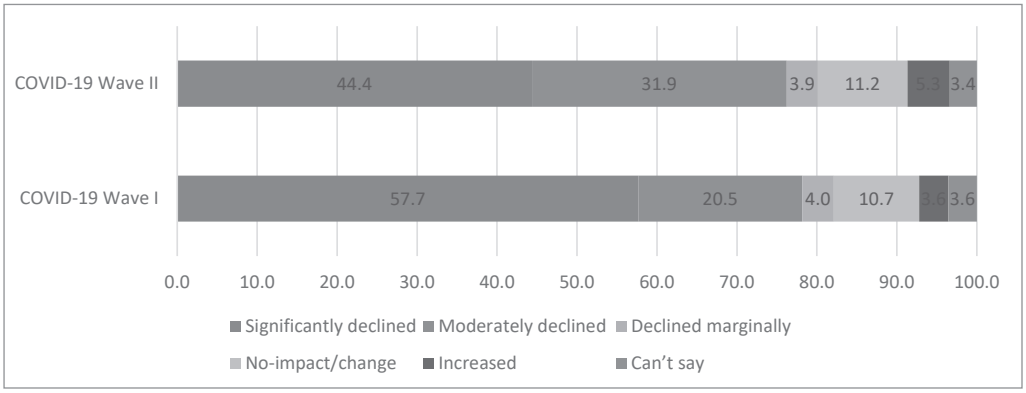
As the severity of lockdown was lesser during the second wave in 2021, only 44.4 per cent of the surveyed households reported a significant decline, much lower than the first wave. On the other hand, 31.9 per cent of households reported a moderate decline in household income, mostly owing to a reduction in wage/salary experienced by a large section of the surveyed households (Figure 10).

The first wave and its associated lockdown had a severe impact across all types of slum households, and around 60 per cent of households reported a significant decline in household income. In comparison with regular salaried households, a higher share of casual wage labourers and self-employed households reported a moderate decline in household income. On the other hand,

17.2 per cent of regular salaried households had no impact of the first wave of the lockdown on these households' income levels, which indicates that a section of regular salaried households had comparatively secure employment (Table 5).

Compared to the first wave, the second wave had a varied impact on the household income of the slum dwellers. During the second wave of the outbreak in 2021, the majority of the impact was borne by the regular wage households, as half of these households reported a significant decline in household income, indicating the impact of continued reduced salary payment. Similarly, around 46 per cent of the casual wage labourer households also reported a significant decline in their income levels. On the other hand, only 38.5 per cent of self-employed households faced a significant decline in household income. However, around 40 per cent of self-employed households reported a moderate decline in household income (Table 5).

**Figure 10: Distribution of HHs (%) as per Degree of Decline in Family Income**




*Source:* Primary survey, August-September, 2021; N: 1208

**Table 5: Distribution of HHs (%) as per Degree of Decline in Family Income across Different Types of HHs**

| | Daily/weekly wage earners | Regular wage earners | Self employed | Others | Total |
|---|---|---|---|---|---|
| | | Pandemic Wave I | | | |
| No-impact/change | 10.6 | 17.2 | 4.9 | 10.7 | 10.7 |
| Significantly declined | 56.8 | 60.5 | 58.8 | 33.9 | 57.7 |
| Moderately declined | 24.2 | 13.4 | 21.9 | 37.5 | 20.4 |
| Declined marginally | 6.8 | 4.8 | 1.8 | 0.0 | 4.0 |
| Increased | 0.0 | 1.5 | 7.2 | 10.7 | 3.6 |
| Can't say | 1.6 | 2.5 | 5.4 | 7.1 | 3.6 |
| | | Pandemic Wave II | | | |
| No-impact/change | 10.3 | 18.0 | 5.8 | 10.7 | 11.2 |
| Significantly declined | 46.1 | 51.9 | 38.5 | 28.6 | 44.4 |
| Moderately declined | 32.6 | 20.8 | 40.3 | 39.3 | 31.9 |
| Declined marginally | 6.5 | 3.8 | 2.7 | 0.0 | 3.9 |
| Increased | 2.3 | 3.0 | 8.7 | 10.7 | 5.3 |
| Can't say | 2.3 | 2.5 | 4.0 | 10.7 | 3.4 |

*Source:* Primary survey, August-September, 2021; N: 1208

Among all the types of households, 7.2 per cent and 8.7 per cent of self-employed households experienced increased household income in the first and second wave, respectively, much higher than regular and casual wage households. This indicates the potential of self-employment to act as a shock absorber during this period (Table 5).

### *6.1 Slipping into Vicious Cycle of Poverty and Emergence of 'New Poor'*

As two-thirds of the surveyed households faced a significant decline in their family income during these two waves, almost 60 per cent of the surveyed households reported to be Below the Poverty Line[1] (BPL) in August 2021, just prior to the survey. The remaining 22.3 per cent of the household fell in the category who were above the poverty line but below the 1.5-time cut-off figure (Figure 11). This category is termed as 'moderately poor' as these households seem to be at a higher risk of slipping into a vicious cycle of poverty in case of prolonged economic vulnerability or any future shock.

A disaggregated analysis across different types of households reveals that the share of BPL households is marginally higher among households with regular salaried employment as the principal source of income compared to casual wage labour and self-employed households (Figure 11). This indicates the impact of a decline in income and reduced pay for a prolonged period on the household income of the regular salaried households. Furthermore, 27 per cent of the self-employed households fall in the moderately poor category. This indicates that despite a large section of self-employed households, who managed to escape poverty with diversified livelihood strategies, very few managed to flourish. Although petty trading can absorb a large number of workers, it provides minimal income opportunities. On the other hand, 22.1 per cent of the regular salaried households belonged to the non-poor[2] category as well, which indicates that the regular salaried category is very diverse.

***6.2 Income decline and risk of 'Moderately Poor':*** A further delving reveals that almost 60 per cent of the post-COVID BPL households noted a significant decline in household income during the first wave in 2020. Most of these households slipped into the BPL category owing to the economic shock received during this phase. Notably, almost 70 per cent of the households who were categorized as moderately poor in the post-COVID period noted a significant decline in household income during the first wave, which highlights the precarious condition of these households to such kinds of external shocks. Most probably, the non-poor households with precarious employment fell into this category as a result of the pandemic. On the other hand, 23.1 per cent of the post-COVID non-poor households had no impact on the first wave of pandemic-induced lockdown (Table 6).

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[1] Usual monthly per-capita consumption expenditure (UMPCE) last month (August 2021) prior to the survey has been used to classify households as per three economic classes:

Below Poverty Line (BPL), Moderate Poor (MP), Non-poor (NP)

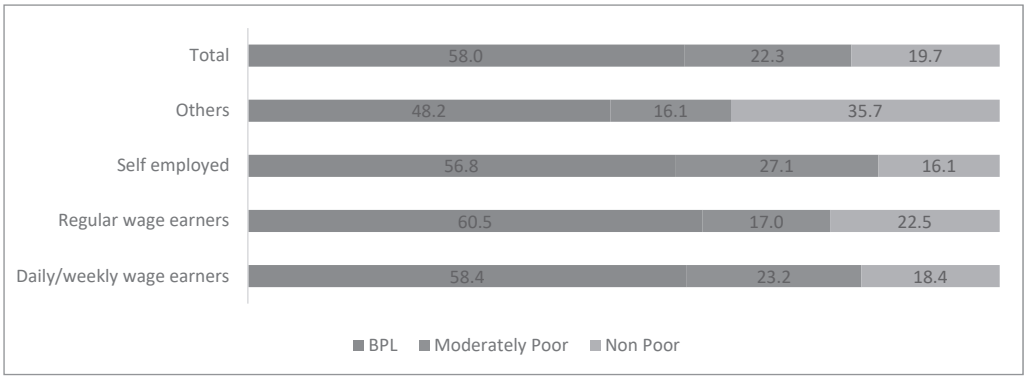
The poverty line value (state-specific for rural and urban separately) as calculated by the erstwhile Planning Commission (2011), Government of India has been adjusted to the inflation for the month of August 2021 Categories for economic status

Below Poverty Line (BPL): UMPCE below inflation-adjusted poverty line Rs. 1672 Moderate Poor (MP): UMPCE is above the poverty line but below the cut-off figured out as poverty line value added with half of poverty line value. For example, the poverty line value for the country is Rs. 1672 (inflation-adjusted for August 2021). Then, the lower limit for this class is Rs 1672, and the upper limit would be Rs. (1672 + (1672/2)) which is exactly Rs. 2508

Non-poor (NP): UMPCE is above the cut-off figured out as poverty line value added with half of poverty line value. Non-poor would be when UMPCE for August 2021 is above Rs 2508.

[2] Non-poor category denotes households with income above 1.5 times of poverty line

**Figure 11: Distribution of HHs as per MPCE of August 2021 across Different Types of HHs**




*Source:* Primary survey, August-September, 2021; N: 1208

The findings highlighted that the economic brunt disproportionately bore the BPL households as most of these households were dependent on various kinds of economic activities that are extremely precarious in nature. Therefore, almost half of the post—COVID BPL households reported that they again have gone through a significant decline in household income during the second wave. Similar to the first phase, 25.1 per cent of the non-poor households had no impact on the second wave (Table 6).

## 7. Discussion and Way Forward

The present study on the slum dwellers highlights the multi-faceted and differential impact of the pandemic-induced lockdown on the livelihoods and household income of the slum dwellers across select cities in India. The results clearly indicate that the economic impact on the slum households was more severe during the first wave compared to the second wave, which is in line with the macro scenario of the urban labour market as per PLFS estimates.

**Table 6: Decline in Household Income as per Post-Pandemic MPCE of Households**

| | Pandemic Wave I | | | | Pandemic Wave II | | | |
|---|---|---|---|---|---|---|---|---|
| | BPL | Moderately Poor | Non Poor | All | BPL | Moderately Poor | Non Poor | All |
| Significantly declined | 58.1 | 67.7 | 45.4 | 57.7 | 49.6 | 39.4 | 34.5 | 44.4 |
| Moderately declined | 24.8 | 9.7 | 19.8 | 20.5 | 31.1 | 37.6 | 27.7 | 31.9 |
| Declined marginally | 3.6 | 3.0 | 6.3 | 4.0 | 3.4 | 3.4 | 5.9 | 3.9 |
| No-impact | 5.9 | 12.3 | 23.1 | 10.7 | 5.6 | 13.0 | 25.6 | 11.2 |
| Increased | 2.7 | 6.7 | 2.9 | 3.6 | 5.6 | 6.3 | 3.4 | 5.3 |
| Can't say | 5.0 | 0.7 | 2.5 | 3.6 | 4.7 | 0.4 | 2.9 | 3.4 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

*Source:* Primary survey, August-September, 2021; N: 1208

The findings from the primary survey revealed that slum households across all types of employment went through a crisis, particularly during the first wave. Moreover, the informality

has increased during the pandemic in 2020 as many permanent salaried workers lost their job and joined informal work in the form of casual wage labour and self-employment. Besides the increased informality, decreased income was another major challenge in for permanent salaried workers (Azim Premji University, 2021). As majority of the slum dwellers depend on informal sector employment, the increased vulnerability in the nature of labour market put a large number of worker in crisis. As a consequence, around 60 per cent of the slum households went through a significant decline in household income during the first wave. Even with the decreased level of stringency, more than 50 per cent of slum households experienced a significant level of decline in household income during the second wave in 2021. This indicates that informal work on which most of the slum dwellers depend has become more precarious over the years.

It is clearly noted that lack of employment security is not only limited to casual wage labourers, but a large number of regular salaried workers lost their jobs and did not receive remuneration during the periods of lockdowns. In fact, a majority of the regular salaried households reported decreased salaries during the second wave in 2021. As the majority of the micro-enterprises went into absolute crisis as a result of the pandemic, they failed to employ at their pre-COVID capacity and adopted extreme measures such as reduction in wages. As a result, urban poor who were dependent on these enterprises experienced a significant decline in household income. In order to support these households, better social security measures are the need of the hour.

Similar to the regular salaried households, casual wage labourer households also faced severe challenges related to an absolute dearth of work during the periods of lockdowns. Also, nearly one-third of the casual-wage labourer households faced extreme difficulty in resuming work after the lockdown. Therefore, the introduction of the public sector employment guarantee scheme similar to MNREGA is a need to support poor urban households.

The findings clearly indicated that self-employment acted like a sponge during the period at a time when many sectors could not generate employment at the desired level. The study also highlighted that self-employment has the potential to absorb surplus labour during such external shock. High dependence on self-employment also hides the issue of under-employment in urban areas. Although many slum households tried to find their last resort in self-employment, this employment opportunity offered a limited economic prosperity. However, this kind of employment helped the urban poor to escape absolute poverty but failed to provide them security.

The study findings highlight the need for urgent inclusive planning for the urban poor and providing them with sustainable livelihood opportunities. It is noted that self-employment can be a survival strategy for slum dwellers as many economically inactive members of the households join the labour force and start petty trading or other home-based economic activities to supplement the decreased income of households. Therefore, the policy focus needs to consider self-employment as a coping mechanism to economic shocks. The PM SVANidhi) programme needs to be strengthened with an increase in the coverage. Furthermore, social security benefits to promote new employment opportunities among low-income urban households needs to be promoted.

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# WOMEN'S LABOUR CONTRIBUTION AND DECISION MAKING POWER: EVIDENCE FROM GUJARAT

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**Abstract:** Women's participation in farming-related activities has been increasing in rural India, but the question is: has it improved autonomy in decision-making or raised their status at home or in the community? This paper – based on the findings from a large, questionnaire-based survey in Gujarat – shows that women's burdens have increased, but the benefits that have accrued to them have not been concomitant. It raises the question of 'preparatory work' that women perform in agriculture, on and off the farm, to bring women's concerns to light that this work remains largely invisible. It is argued that while reporting sex-wise activity status on the field, all the sub-activities or sub-components of a particular activity need to be considered carefully; otherwise, the coding of 'activity status' is gendered. The paper concludes that if farming in India is to thrive and provide its farmers fulfilling lives and its citizens affordable food, Indian policymakers need to address this imbalance, because many rural women are discontent with the compulsions of having to perform additional work in agriculture and would much rather perform non-farm, home-based activities.

**Keywords:** Women in agriculture, Preparatory work, Decision-making, Control over incomes, Rural India

## 1. Introduction

Official data suggest a declining trend in women's participation in the labour force (Mehrotra and Sinha, 2017), yet more than around two third of female workforce (as against 42% of the male workforce) are still engaged in agriculture (Pattnaik et al., 2018). This concentration of women's labour in agriculture is termed as the 'feminization' of agriculture (GOI, 2018). Scholars explained the process of feminization in India as distress-induced rural male outmigration and casualization of the rural workforce (Pattnaik et al., 2018, Chandrasekhar and Ghosh, 1999). It raises the question whether women are empowered with their involvement in agriculture. The distress driven nature of feminization of agriculture in India raises doubt whether it translates into managerial feminization of agriculture (as distinguished by Gartaula, Niehof and Visser, 2012 in the case of Nepal) to make women agents of change in the existing gender-power landscape in rural areas. Over-representation of women in agricultural wage labour limits their work to the 'peripheral' segment, prevents any

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form of skill development, and does not improve their decision-making power (De Schutter, 2013). Decision-making or capacity to make 'strategic' choices is a process towards empowerment (Kabeer, 2016). Women's economic empowerment is a prerequisite for household food security, inclusive growth, and gender equality (Agarwal, 2011; Das et al., 2015; and Duflo, 2005). However in India, over-representation of women in agriculture is often associated with tenuous and underpaid employment, which is ultimately disempowering (Kelkar and Wang, 2007). Most of the work done by women at farm, animal rearing and at household goes unreported and unnoticed. The limited literature that noted the declining proportion of women's labour in agriculture, or de-feminization of agriculture (Abraham 2013; Mehrotra and Sinha, 2017), relied upon official statistics, which failed to capture 'preparatory work', 'pre-production work', and consequently does not consider women's full labour contributions to agriculture. This shows 'activity status' is gendered in India. The lack of attention by policymakers toward women's involvement in such activities can bypass crucial gendered dimensions..

## 2. Feminisation of Agriculture: Indian Context

The agrarian transformation in India, not being a classic one; is not an exclusive transformation from farm to non-farm sector (Shah and Harriss-White, 2011) it has made the village economy and life more complex. Increasing cost production is making the agriculture sector in India unprofitable. (Dev and Rao, 2010) and decline in technological gain that made farming less lucrative (Headey, Bezemer and Hazell, 2010). The situation in rural economy is complex as on the one hand the farm income is not sufficient in providing sustainable livelihood for the working population and on the other hand there is slow growth in employment in the non-farm sector, further slower growth in non-farm regular employment (Bhaduri, 2009). There is no clear shift of labour from farm to non-farm sector rather there is evidence of switching between the two sectors. The declining farm income makes the rural workers vulnerable which leads to increase in migration. Most of the migrants work as causal workers in informal sectors (Shah and Harriss-White, 2011) but they do not leave the farm completely. The continuation of small-scale cultivation in the absence of the male cultivator makes the women more active in the farm. In the process of perusing multiple livelihood options, male move out of farm seasonally and women take the charge of major farming tasks. The numerical prominence of women in Indian agriculture, under the existing agrarian crisis debate, defined the type of feminsiation as 'feminization of agrarian distress' (Pattnaik et. al., 2018). Further gender based resource divide, impinges on women's status severely (Girikipai, 2006). Lack of property rights lead to sub-optimal decisions and missed opportunities to increase productivity (RDI, 2009). Thus, on one hand, agriculture is in distress, on the other, feminization has taken place without an increase in claim over productive resources, and lack of access to technology and knowledge. The over representation of women in agriculture without land rights may have severe implications for future farming.

Women's economic empowerment is increasingly seen as a prerequisite for sustainable development and inclusive growth along with promoting gender equality (Das et al., 2015; and Duflo, 2005). While on the surface any increase in the participation of women in the workforce might seem to hold potential for increasing their quality of life, such optimism must be tempered by the difficult and often unregulated working conditions in the sector and the reality that many structural challenges continue to block women from achieving parity of income and status with their male counterparts. Among these hurdles is the reality that while few women own or lease the land they are working on (Agarwal, 2012), major decisions regarding farm management are usually made by men (Lastarria-Cornhiel, 2006). These women also do not get due recognition of their work

(Deere, 2005). Even if their farm work results in an increase in household income, they have little control over how it is spent (Duvvury, 1989).

Thus it is important to understand the extent of labour contribution by women in the farm sector. The enormous labour contribution by women goes unnoticed and unreported by the policy makers. This might be because the perception towards women's work is gendered for the policy makers. Thus the way the data about women's work contribution is recorded needs to be redefined to accurately reflect the amount of work undertaken by women. The paper thus tries to understand whether women's contribution is leading to autonomy in decision-making or just adding to their burden. Does feminization of agriculture lead to empowerment of women? An analysis of the interaction between feminization of agricultural labour and empowerment: defined as women's position within the household and society, becomes imperative. The relationship has policy implications as if feminization has resulted in a corresponding increase in women's household/ society status, it implies that the rise in share of women in agriculture and her welfare work simultaneously. This result would hint at increasing policy focus on women's participation in farming and improvement of agricultural sector. However, if feminization has not helped in improving women's bargaining power then it implies that merely concentrating on increasing farmer's income may not have any influence of the welfare of women workers in agriculture.

## 3. Study Area and Sampling

The research questions explained in the last section are answered with the help of a primary survey conducted in Gujarat during 2015-16 and 2016-17. With around 9.6 per cent growth per year, the Gujarat agricultural model was glorified as exemplary in India (Shah, Gulati, Hemant, Shreedhar and Jain, 2009) and was projected as a 'role model' for the other states (Debroy, 2012; and Bhagwati and Panagariya, 2012). However, the inclusiveness of the growth process has been debated (Hirway et.al. 2015; Kannan 2016). Kannan (2016) claimed that Gujarat's agricultural growth did not address the critical aspects of marginalized people, tribal, small farmers, wage and female labourers. This highlights the fact that the resource poor cultivators remained out of the circle of the benefits. The two opposite sets of debates on growth and inclusion, encouraged to understand whether the women agricultural workers (both cultivators and agricultural labourers) who contribute a major portion of their labour in agriculture, have actually gained both financially and socially during the period of high agricultural growth in the state?

Four districts were selected for the purpose of the survey based on a maximum-variation principle to capture variations in local agro-climatic and agro-ecological contexts. Through analysis of official sources, districts with distinct and different cropping patterns and socioeconomic profiles, proportions of Scheduled Tribe (ST) population were selected. Two blocks in each district, having high women's participation in agriculture (according to information provided in Census, 2011, were selected. One village from each block was identified, and a total of eight villages were considered.

Before selecting the samples for the study, a house-listing (census) exercise was conducted. The Census conducted in all the villages showed a presence of 3,235 households in the 8 villages under study. Fifty households from each village were selected using a stratified-random sampling technique. A total of 400 women farmers were surveyed. Along with the questionnaire survey, in-depth interviews with 18 women farmers were conducted, where they were asked about their opinion, perception, and future ideas towards farming. Inputs from these personal interviews are also noted in this paper.

Both quantitative and qualitative techniques are used to analyse the data. The mix-method

technique provides a holistic picture of the spatial status of women farmers, their perceptions and changing aspirations. While this study is one amongst many looking at women and their contribution in Indian agriculture, it is believed that its focus on the country's subjugated voices makes for a timely contribution to the existing literature.

## 4. Women in Gujarat's Agriculture

The sample consisted of women from different castes (Table 2). Out of all women surveyed in Gujarat, Other Backward Classes (OBCs) (47%) constituted the largest single category, followed by Scheduled Tribes (STs) (29.4%), Scheduled Castes (SCs) (6.2%), and the general caste (17.4%). Among the OBCs, Koli Patel, Thakur, Rajput and Bariya communities were prominent and covered around 73% of the total OBCs. The prominence of OBCs was remarkable in all the surveyed districts. In Panchmahal the Bariya communities among the OBCs, covered around 50%. Valsad being a tribal dominated area, all the sample households surveyed were STs. In Patan and Rajkot the general caste households were surveyed. Among the general caste groups, Rajput and Patel were dominant in our sample.

**Table 1: Women in Gujarat's Agriculture**

| **Variables** | **Women in agriculture** | | | | |
|---|---|---|---|---|---|
| **Districts** | **Patan** | **Valsad** | **Rajkot** | **Panch Mahal** | |
| | 30.7 | 87.1 | 71.0 | 94.0 | |
| Land holding | Marginal | Small | Medium | Large | |
| category | 82.6 | 56.5 | 64.5 | 45.5 | |
| Caste | General | ST | SC | OBC | |
| | 62.9 | 88.1 | 36.0 | 67.2 | |
| Irrigation status | Irrigated Farmer | Un Irrigated Farmer | | | |
| | 78.5 | 66.3 | | | |
| Migration status | Migrating HHs | Not-migrating HHs | | | |
| | 79.5 | 60.9 | | | |
| Education status | illiterate | primary | upper primary | secondary | higher secondary |
| | 69.7 | 65.7 | 67.7 | 85.7 (N small) | 66.7 |
| Ration card type | APL | BPL | | | |
| | 65.9 | 76.7 | | | |
| Family type | nuclear family | joint family | | | |
| | 72.9 | 68.9 | | | |
| Age group wise | Age group 15 to 35 | 35 to 55 | 55 and above | | |
| | 33.1 | 55.9 | 7.0 | | |

*Source:* Field survey, 2015-16

In Gujarat the average size of landownership is synonymously hierarchical to caste categories as the average size of land owned was highest among general castes and least among STs. The average land holding was 2.4 acre among the survey households. The average land holding size varied between 0.8 and 0.9 acres in Valsad and Panchmahal to 5 acres in Patan.

Our survey mainly included landed households, thus the main source of income was reported as agriculture among 88.5% of the households (Table 2). However, even among the landed agricultural households, as high as 73 % depend upon more than one income source, apart from agriculture for their livelihood. This implies agriculture as the 'only source of income' was not valid for nearly three

fourths of the population in our survey villages. Women's participation in agriculture is significantly higher than males in the state. This shows the prominent role of women in agriculture. Only 5.6% of the population earned their main income by working as non-agricultural wage labourers, but this mainly comprised male members. Livestock and agricultural wage labour were the prominent subsidiary occupations among the studied households. Around 77% of women were involved in livestock rearing and 17% as agricultural wage workers as secondary occupation.

**Table 2: Main and Subsidiary Occupations of the Working Population: Gujarat**

| Main Occupation | Male | Female | All person |
|---|---|---|---|
| Agriculture | 81.4 | 96.0 | 88.5 |
| Non-agri-labour | 10.1 | 0.9 | 5.6 |
| Non-agricultural Activity | 6.4 | 1.8 | 4.2 |
| Agri wage labour | 1.2 | 0.8 | 1.0 |
| Livestock | 0.8 | 0.6 | 0.7 |
| Total occupation | 100 | 100 | 100 |
| No-subsidiary activity | 28.8 | 25.9 | 27.4 |
| Total subsidiary occupation | 71.2 | 74.1 | 72.6 |

*Source:* Field survey, 2015-16

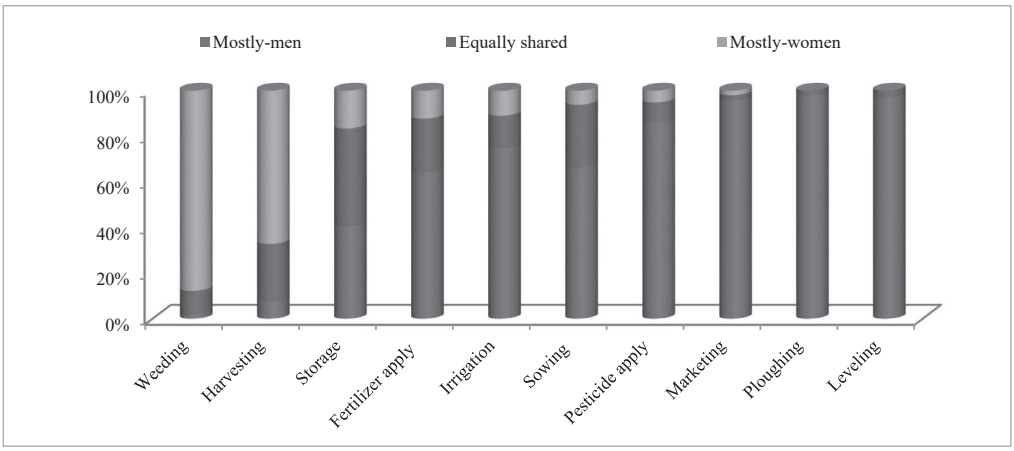
The female work participation in our sample is confined to working in the agricultural field, livestock rearing and as agricultural wage labourers. The representation of females in other non – agricultural activity was almost negligible. Hirway (2000) pointed that in rural Gujarat women are mainly involved in agriculture and animal husbandry. She doubted whether women chose the job or was it enforced on them. She wrote that rural women in Gujarat during the 70s shared a lower status and suffered from relatively more employment uncertainty. According to Hirway (2000) a) women employment comprised a small share which further declined with agricultural development in Gujarat. b) Women faced lower degree of occupational diversification c) women's wages were lower than males and d) women faced higher incidence of under employment compared to men. A similar picture prevails in the present period as our sample shows lack of representation of women in any other sector.

### *4.1 Labour Contribution in the Farm Sector*

Women are involved in all stages of production and post-production activities but their major tasks are weeding and harvesting which are time consuming and strenuous activities (Figure 1). The analysis of women's role showed that their labour in ploughing, land leveling and marketing was lower. Storage is one of the major post-harvest activities that is performed by women jointly with men. Other activities such as seed collection and preparation, threshing and carrying grains to the home were also mainly done by women. Apart from these there are various other crop specific tasks which were exclusively performed by women. These include extracting nuts from the groundnut for seed preparation, transplantation of paddy, winnowing for wheat and other pulses, cleaning and arranging farm produce for sale, drying agricultural products such as tobacco leaves. However, ploughing, sowing, land levelling, spraying pesticides and marketing are considered as masculine activities. Lack of skill restricts their role in various activities. For example sowing mustard and castor seeds (cultivated mainly in Patan), requires definite skills which women are not equipped with. It shows involvement of men in skilled agricultural works but limiting women's role in drudgery prone unskilled activities such as weeding, transplanting, harvesting, cleaning, grading etc. Similar findings were drawn in the study by Baliyan (2016), conducted in rural Utter Pradesh, which showed

that all the market related activities like buying agricultural inputs, hiring labour and sale of output were exclusively done by male members.

**Figure 1: Women and Their Farm Activities**

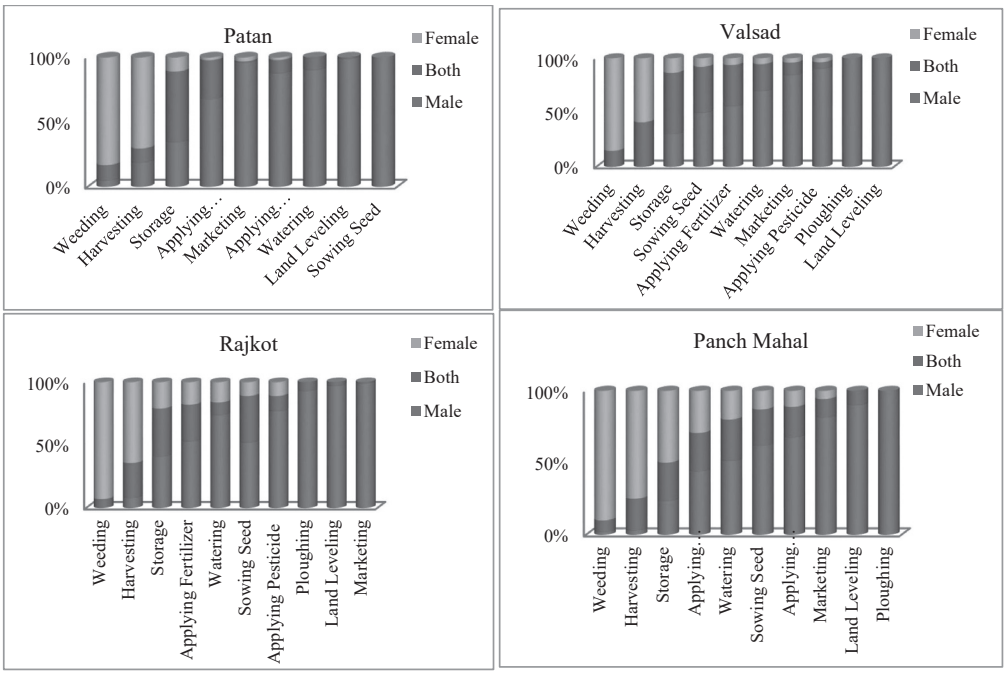



*Source:* Same as Table 2

There are variations in women's participation in farm sector across the districts (Figure 2). Compared to Patan and Rajkot, women in Valsad and Panchmahal participated in more number of activities. In Panchmahal women either alone or with other male members participated in marketing or land levelling activities.

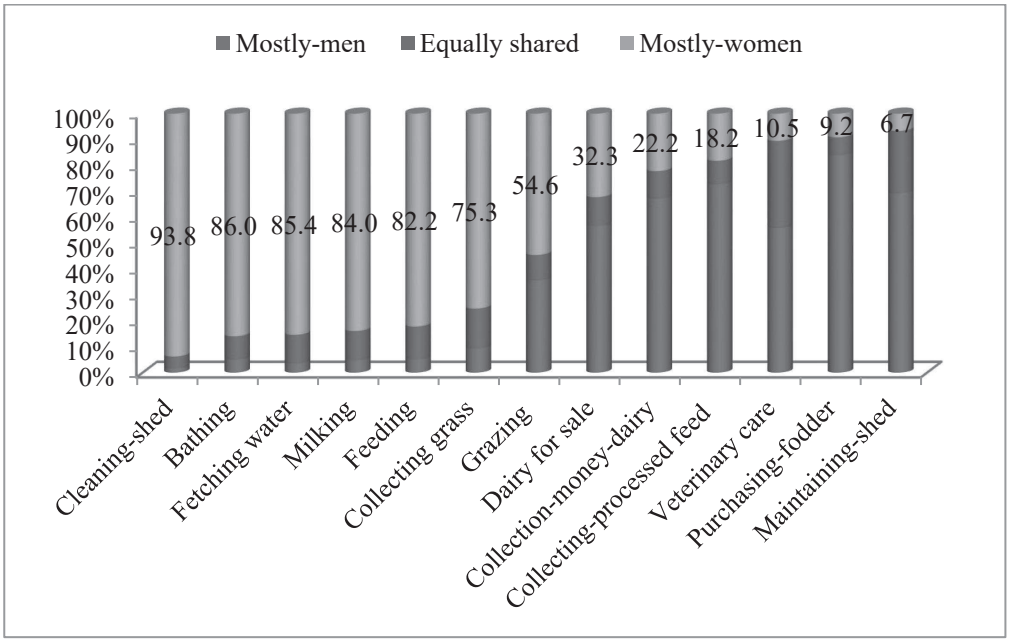
It is important to mention here that the operational codes are designed to be asked in such a way that they capture 'who performs the task "practically'. This categorization gives a sense that women's role is limited to a few tasks. Majority of the case studies explicitly highlighted the significant role of women in each and every farm operation as a 'helper'. Their role is like 'performing behind camera'. Their role in 'preparatory work' is much higher but it is diluted while coding the operations. Ramaben from Patan explained '*if you ask us about who – 'practically' applies pesticides in field it is men but all preparatory activities of pesticide application such as - preparing the medicine-mixture, mixing the medicine with water, cleaning the container, putting the heavy pesticide container on men's shoulder' are performed exclusively by women, so that men could apply the pesticide'*. She further explained *'our labour is not visible and it appears as-if men are doing all kind of operations but in reality we also participate in each and every task that men do in farm'*. The fact is that the preparatory work consumes more time which is neither recognized as work nor respected. In the literature it is debated whether women's home based work has economic importance for the family, and should be included as 'economic activities' (Rawal and Saha 2015; and Siddiqui et al., 2017). It is also equally important to consider the 'preparatory works' as activities which have economic importance. Similarly, Santiben from Valsad explained how she nurtured the crops like her own child. She performed nearly all activities in the field except ploughing. Nevertheless her role remained restricted till harvesting the crop, involvement in post-harvesting activities is very limited. On being asked about why she did not go to market for selling of products, she asked –'*why do you think we should also go to the market, having done so much of labour in the farm*'. She explained '*market does not belong to women, it's a man's world*'.

**Figure 2: District-wise: Women and Their Farm Activities**




*Source:* Same as Table 2

**Figure 3: Women in Animal Rearing**




*Source:* Same as Table 2

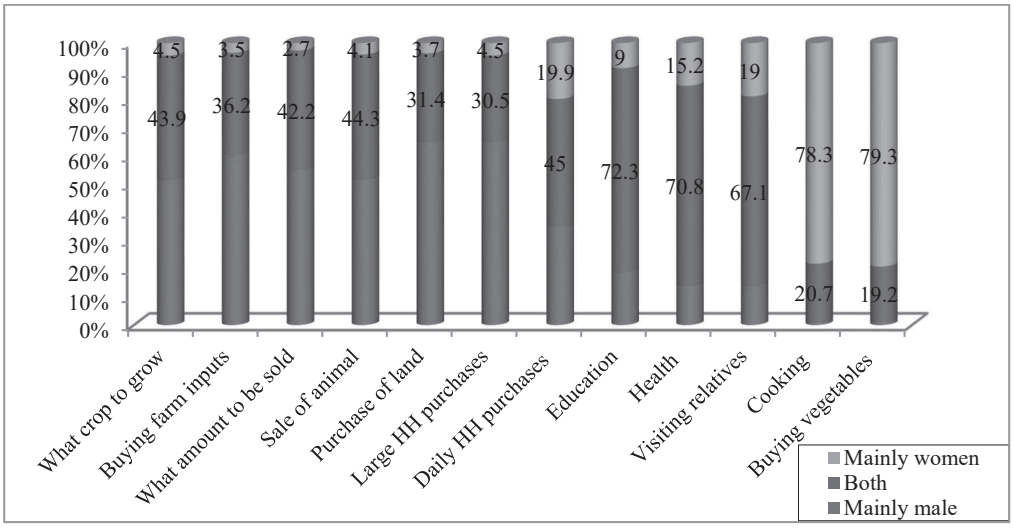
Women's work in allied activities such as livestock rearing is substantially higher compared to males. Needless to mention, there is high extent of contribution by women in reproductive activities. However, they are often at a disadvantageous position when compared to men in terms of work-load, work-time, wages, decision-making, technological adaptions and most importantly in property/land rights (Abraham, 2009; and Subhanil, 2011).

The work participation of women in animal rearing is high in tribal areas of Panchmahal and Valsad (Figure 3). However, male-female participation in animal care varies across regions. Tasks like going to the dairy for selling milk is mainly performed by women in Patan and Valsad, but the same task in Rajkot and Panchmahal is performed by men. The reason stated was that in Rajkot the cultural practices do not allow women to go out to either sell or purchase products. On the other hand, in Panchmahal, women reported two major reasons, distance of the dairy from home and women's preference of men to perform the task as they think men to be superior to them. Nevertheless, in Valsad though women were very active in going to the dairy for selling milk, their participation was minimal during the time of money collection. This was reportedly due to instances of cheating, and their weak bargaining power. Women also reported that men are more confident compared to them while handling with monetary transactions.

### *4.2 Women's Role in Decision Making and Control over Income*

Information pertaining to women's role in decision-making is depicted in Figure 4. Women's involvement in taking decisions alone regarding crops to be grown, buying of farm inputs and amount to be sold was substantially lower. Only 3 to 5 per cent women reported that they took decisions related to cropping and sale of output. However women's participation in joint decisions was better. Around 44 per cent to 42 per cent women reported that they participated in decision-making with male counterparts regarding cropping pattern and marketing of produce.

**Figure 4: Women's Participation in Decision Making: Gujarat**




*Source:* Same as Table 2

Enquiring about the reason of minimal participation of women in decision-making, 55 per cent reported that it was because they felt that their husbands had better exposure and as males had

acquired skills in farming. Women are often underrepresented in rural organizations and institutions, and are generally poorly informed regarding their rights. This prevents them from having an equal say in decision-making processes, and reduces their ability to participate in collective activities, e.g. as members of agricultural cooperatives or water user associations (Pattnaik and Lahiri-Dutt, 2020). In our sample only 9 per cent of women reported having knowledge about subsidy schemes of government. However, their participation in extension services, such as, attending meetings at village and district levels was very low. Absence of land ownership was reported (23%) as another major reason for lack of participation in farm decision making. Other common answers were – women do not want to take the risk – if the decision goes wrong they have to face severe criticism from family, women also reported that they were not allowed to be part of decision making.

Low level of participation of women in farm related decision making was mainly due to lack of knowledge about new technology and government schemes. On enquiring about their minimal participation in extension programs, women reported that after farm, livestock and household related work it was difficult for them to find time to attend the meetings. An innovative extension program, *Krishi Mahostav,* was initiated by Government of Gujarat during 2005, with the aim to bring scientists, to the door step of farmers. On being asked regarding their participation in extension programs at village, women replied that they were not comfortable attending the meeting where male members were present. The report by Pattnaik et al. (2012) suggested involvement of women scientists and officers for better participation of women. Often the information passed on to the male members was not transmitted to the females.

During our case study, women farmers highlighted the importance of education on women's autonomy in decision-making. Sumita from Valsad (land holding less than 2 acre and belonging to ST community) felt that education brought them autonomy and prestige at home and society. She explained as she was well-educated, her husband discussed with her about each and every aspect related to farming and animal husbandry. She was confident to take independent decisions related to children's education and health.

### *4.3 Control over Income and Decision-making Authority*

Decision making power comes with the authority and control over income. It is important to mention that to have control over income and to keep the purse are two different things. Women save money without having the power to spend it. Most of the time women responded that their husbands handover the income to them and they take charge of it. However, taking charge of something does not necessarily mean having control over it.

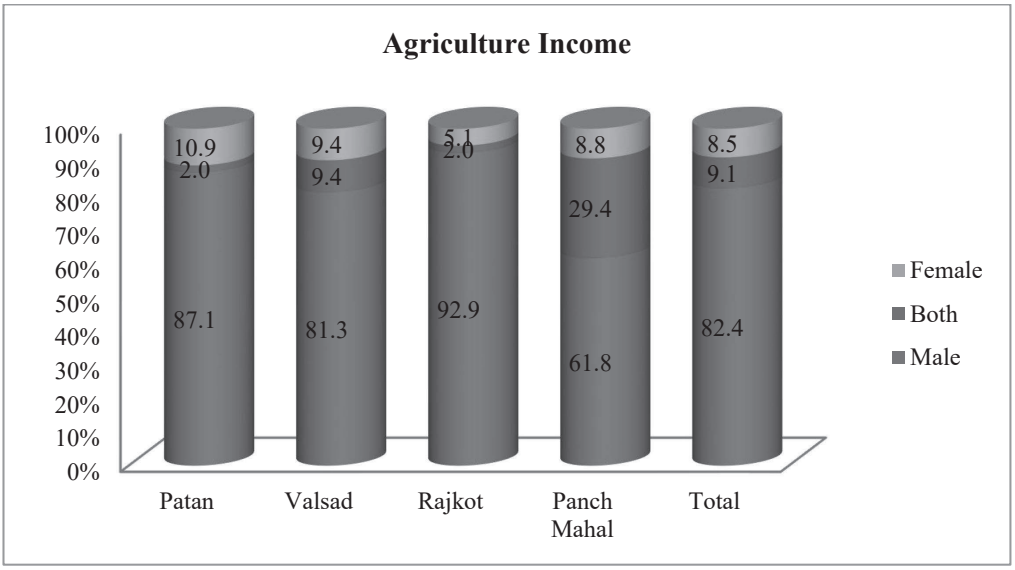
Women's joint control over income was nearly nil, while their sole control over income was further lower. Livestock being one of the major activities conducted by women, only around 32% reported that they took charge of the income earned from animal rearing (Table 3 and Figure 5).

**Table 3: Control over Income from Farm and Dairy**

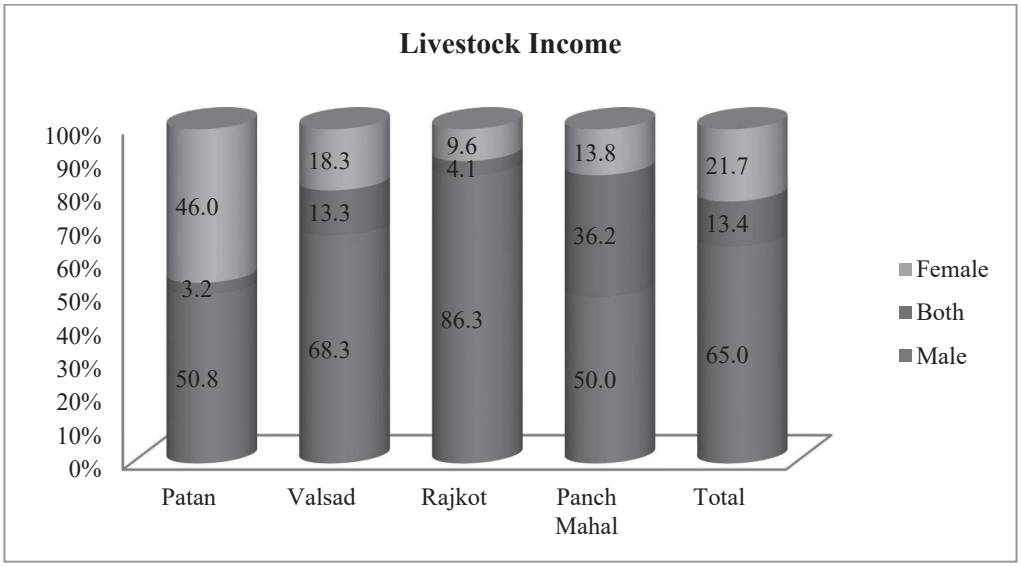
| | Agriculture | Livestock |
|---|---|---|
| Male | 82.4 | 55.0 |
| Female | 8.5 | 31.7 |
| Both | 9.1 | 13.4 |
| Total | 100 | 100 |

*Source:* Same as Table 1

**Figure 5: District-wise Control over Income from Farm and Dairy**




*Source:* Same as Table 1




*Source:* Same as Table 1

Ramaben from Patan, belonging to a small land holding family narrated her story. She gave her soul in rearing the livestock. She sold her jewellery to buy two buffalos. She was tagged as a 'bad women' by her husband and relatives as she fought with her husband several times to keep control over the money earned from dairying. She argued with her husband that as she conducts each activity related to livestock, she should have control over the money earned, like her husband claimed the income from farming. Her husband spends most of the farm income for taking care of

his second family, whereas she hardly had a chance to spend the money on her own for the future development of the family. Because the dairy personnel cheat in checking the quality of milk, male members sell the milk. She felt her husband took advantage of this and has controlled income earned from farm as well as from dairying.

## 5. Women and their Perception about Farming in Future

Having discussed disproportionate relationship between women's labour contribution and role in decision making, it is not clear whether women like the economic activity in which their representation is the highest. The debate on women farmer's preferences is scanty in the context of developing countries. As pointed out by Agarwal and Agarwal (2017), in developing countries literature on agrarian transitions focuses on aggregate shifts of people from farm to non-farm jobs, rather than on farmers' preferences. The farmers preference of farming might have different implications with respect to nature of economy. In context of developing country the nature of debate is not only about wellbeing of farming community but sustainable livelihood options and sustainability of the agricultural sector. With greater feminisation of agricultural labour it is important to understand the preferences of women who work in agriculture as well. In order to understand the status of women farmer, one first needs to investigate whether women working in agriculture, actually *liked* their involvement in farming or not. How women perceived their future in farm related work, given their lack of ownership rights and limited technological knowledge. Analyzing these questions had wider implications-on the overall agricultural development. Birthal et al. (2015) and Agarwal and Agarwal (2017) addressed the question of farmer's perception towards farming and analysed the wider implications of farmer's choice on agricultural development. Their study showed that women farmers were more dissatisfied compared to the male farmers, which had implications on farm productivity.

The respondents were asked 'whether they like farming'. The answers to like or dislike farming, indicated the desire to quit or not-quit. The answer may not be actual decisions, because a) there are few alternatives left apart from farming, especially for women who have limited mobility, b) even if they wanted to pursue some other profession they were less likely to find a sustainable market. Thus the empirical analysis of women's preferences can provide important scope for designing rural livelihood strategies in general and agricultural policies in particular.

**Table 4: Region-wise Perception of Women Farmers about Farming**

| States | Like | Dislike | No definite answer | Total |
|---|---|---|---|---|
| Patan | 59.3 | 29.1 | 11.6 | 100 |
| Rajkot | 63.6 | 16.8 | 19.6 | 100 |
| Valsad | 56.8 | 27.5 | 15.8 | 100 |
| Panch Mahal | 64.6 | 14.7 | 20.7 | 100 |
| Gujarat | 61.5 | 21.1 | 17.4 | 100 |

*Notes:* No definite answer - includes answers such as, a) we do not know the difference between like or dislike as nothing works according to our wish, b) as there is no other option so we are in agriculture, c ) we do not know anything apart from agriculture so difficult to say whether we like it or not.

*Source:* Field survey 2016-17

A little less than two thirds of women agricultural labourers replied that they liked farming as their job. On the other hand, 21 per cent women disliked farming as an occupation (Table 4). Out of our total sample 17 per cent replied that it was difficult for them to tell whether they like it or not

as they have not known any other livelihood option available for them.

We also enquired whether those who liked farming wished to continue it in future. The answers were hypothetical and with changing economic situation their opinions would vary over a period. Out of the women who responded that they liked farming, around 28 per cent did not want to continue farming in future (Table 5).

**Table 5: Future Preference of Women Farmers**

| | Do you like to continue farming in future? | | Do you like to continue Livestock in future? | |
|---|---|---|---|---|
| **Districts** | **Yes** | **No** | **Yes** | **No** |
| Patan | 67.3 | 32.7 | 67.7 | 32.3 |
| Valsad | 74.4 | 25.6 | 80.1 | 19.9 |
| Rajkot | 68.8 | 31.3 | 78.4 | 21.6 |
| Panch Mahals | 75.3 | 24.7 | 87.5 | 12.5 |
| Gujarat | 71.9 | 28.1 | 79.6 | 20.4 |

*Source:* Same as Table 4

It is quite surprising that higher share of women in the large and medium land holding groups did not like to continue farming. Quite surprisingly as compared to small-marginal land holders the higher land holding categories wished to quit farming (Table 6). The larger land holding groups have better exposure and access to other non-farming opportunities. A higher share of women in families cultivating land by leasing-in, reported that they would like to continue farming in future.

**Table 6: Land Holding Category wise, Future Preference of Women Farmers**

| | **Yes** | **No** |
|---|---|---|
| Marginal | 76.9 | 23.1 |
| Small | 75.7 | 24.3 |
| Medium | 68.8 | 31.2 |
| Large | 72.5 | 27.5 |
| Landless (lease-in and forest land) | 40.2 | 59.8 |
| Joint Farmer | 73.3 | 26.7 |
| Total | 71.9 | 28.1 |

*Source:* Same as Table 4

The reasons of liking or disliking farming was captured through interviews which are discussed below.

A woman – Mitalben - belonging to the OBC category with land holding less than 2 hectare from Panch Mahal thinks farming has lost its charm. Her husband and son migrate for six months to cities for construction work. She takes care of the farm in their absence and cultivates maize and bajra. The income from cropping has declined over a period due to increase in costs, especially fertilizer and labour cost. They cultivate mainly for self-consumption and sell small amount of output. The earnings from non-farm sources forms the major share of income. She explained that after the male members migrate, the work burden increases on her. In their village exchange of labour was common but due to increasing migration there is shortage of labour. In this situation it is difficult for her to get paid labour. The challenge is more for her as she is a women farmer, male labourers do not take her seriously. All these challenges of farming make her dislike it.

The interview with a women farmer – Kinjalben, from Patan belonging to general caste and with land holding of 20 hectare explains why she likes farming. She is the 'sarpanch' of the village. Major crops that they cultivate are castor and maize. She works in her family farm and their family does not like her to go and work outside. She told she is happy with her work but does not wish to continue farming in future. She explained that given an opportunity she would like to peruse other jobs like her own business. She explained that the income from agriculture has not increased significantly over a period and their labour-days have remained constant. The income also has become more vulnerable compared to earlier. If the crop succeeds, then they gain profit but there is higher risk that the crop might be lost due to irregular or lack of rain. Another reason that she gave is working in factories as wage labours make the flow of income smooth due to the daily or weekly payment. They have plans to sell a farm plot in future to industry and shift to Ahmedabad for a better life.

## 6. Conclusion

That there is significant contribution in labour but lack of participation in farming related decision-making highlights the fact that there is feminization of agricultural labour rather than feminization of agricultural sector *per se*. Given the context of feminization of agricultural labour, the perception of women towards farming is important particularly, as an occupation and future aspirations. The preference of women farmers to-be or not-to-be in farm has implications for the sustainability of farming sector in the context of increasing feminization of agriculture.

A crucial observation of this research is the need to redefine a number of activities related to farming. There is ample discussion on the unpaid labour of women in the literature, but 'women as helper' is a concept that needs to be considered carefully while reporting sex-differentiated activities on the farm. This is because a particular type or category of work, that is an activity comprises a number of sub-activities or sub-components and may have many layers or may be carried out in bits-and-pieces or over different time periods or in different places. Almost all of this ancillary work was performed mainly by women. Women's farm and non-farm tasks are noted, but their supplementary work is overlooked. The coding of 'activity status' can be further broken down in farm or non-farm activity for better representation of women's contribution.

Livestock as an occupation, especially dairy farming in Gujarat, appeared as one of the major sources of income for women however, control over the earnings from dairy cattle is minimal among women. Women's work related to dairying is tedious and exhausting, but the institutional-level support – such as in the form of dairy cooperatives – seems to have enhanced women's incomes from dairy farming in relevant households.

Around one-third of the women reported that they would not like to be associated with farming anymore. We found that the aspirations of women farmers are changing – they want to explore non-farm, home-based activities apart from farming. They spoke of their interests and capabilities in activities such as starting small businesses and preparing and selling home-based packaged food products. Policies need to focus on empowering these women, and encouraging their involvement in other non-farm activities.

Despite the gloomy picture, however, gender relations are not static; they change as economic and social situations change, and in this regard, there may be some room for optimism. Education has had a positive impact in equipping women to contribute to decision-making within the household and men to recognize the value of women's work and their right to pursue their own interests and desires. In rural India, making major decisions about income and farm business is still widely

believed to lie in the male domain, but this study suggests that some were becoming more involved and/or informed in this aspect of life. There are also changes in values, with few men increasingly recognizing women's labour burdens and interests. Women gained respect in family and society due to their consistent labour contribution. However, changes with respect to resources are relatively small, such as women participating in training, or ones with larger implications, such as women inheriting or buying land, or women having formal employment. In decision-making, changes can be observed in the degree of sole or joint decision-making. Again at smaller scale, with some women being more involved or more informed about household decisions vis-à-vis women taking decisions independently. However, despite some optimism, there continues to exist a huge gap in women's labour contribution and their involvement in decision-making.

## About the author

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# EXPLAINING GENDER DISCRIMINATION IN URBAN INFORMAL LABOUR MARKET OF UTTAR PRADESH

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**Abstract:** The paper explores the level of gender discrimination and impact of various factors on females' probability of getting discriminated in unorganised sector of urban Uttar Pradesh. Gender discrimination at the workplace is imperceptible and is reflected in the nature of work performed, valuation of the skills and the technology used by men and women. The main objective of this paper is to analyse the gender discrimination and its contribution to the gender-social group based wage gaps in India. Using data from the primary survey conducted in Uttar Pradesh in 2018-19, the paper analyses occupational segregation based on intersectional axes of gender and social groups by categorising wage workers according to the gender and social groups and estimates average wage gain or loss to each group due to their occupational segregation. The results show that the participation of female labour force is more as part time employees and gender segregation of total employment is more pronounced as casual workers in the unorganised sector in urban Uttar Pradesh, thus establishing that goal of equality in labour market remains a distant dream.

**Keywords:** Informal employment, Wage inequality, Labour force participation, Unorganised labour market.

## 1. Introduction

According to ILO in every country in the world women continue to be paid less for comparable work than men and the wage gap narrowed only slightly over the decades. Gender discrimination at the workplace is imperceptible and could be captured in the nature of work and valuation of the skills and the technology used by male and females. ILO observed that throughout most regions and in many occupations, "women earn an average of just two-thirds of men's wages, and they are denied access to opportunities leading to the best jobs" (ILO/95/22). According to Jawahar, et al. (2002), "women workers suffer vital disadvantages comparative to men in their search for employment opportunities, lower real wages, increased uncertainties, and irregularities of employment". The reason behind observed facts is that females do not possess much skill, lack training, and education

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for the type of work they perform and as a result, they are paid low and marginal wages than the male workers. Such wage and earning differentials prevailing in the labour market lead to discrimination which can occur through a number of dimensions such as caste, gender and age which tends to reduce the opportunity of such groups to access basic social services and limits their participation in the labour market (Majumdar, 2007). In other words, women workers are more vulnerable than men in terms of wages and income.

Occupational segregation is one important dimension of gender discrimination and takes place when an occupation or a certain part of it tends to be dominated by individuals of a particular gender/race or any other personal attributes. Its existence dates back to history and despite concerted efforts to tackle the issue it still exists; but its extent varies across countries (Duraisamy and Duraisamy, 2014). For informed policy making it is pertinent to understand the magnitude and nature of the problem which arise due to underlying preference of women for certain occupations or due to exclusion of women from certain occupations. Further, studies have shown that heterogeneous nature of the Indian labour market in terms its nature of work, skill requirement, mode of operations, have consequently resulted into unequal pay between men and women. Thus occupational segregation plays an important role on the gender wage differences (Blau and Kahn, 2012). There is no dearth of literature on occupational segregation in developed countries which establishes its continued existence. Studies in India are also prevalent viz; significant among them is one by Becker (1971) which documented existence of discrimination in the labour market with varying proportions and the noted work of Mincer (1974) which adopted a model of investment in human capital to document that the wage gap is predominantly driven by the gender productivity gaps.

Scholars engaged in gender-related studies have been emphasizing the marginalization of women in the labour force in the workplace (Hirway, 2012). Numerous theoretical and empirical studies documented this phenomenon of gender-based wage differentials and stressed that wage disparities are bound to exist across occupations, regions and sector and nature of jobs however, the existence of inequality among men and women for same job with same level of skill reflects the existence of discrimination (Lama and Majumdar, 2018). Thus wages and earning differentials prevalent in the labour market basically result in impoverishment, which percolate caste-wise, gender-wise and also age-wise. In other words, women workers are more vulnerable than men in terms of wage and income. Several imperfections are prevalent in the labour market nevertheless which act against women. The paper synthesizes that the gender disparities subsist in respect of number of specific characteristics of quality of work including regularity of work, full-time & part time work, working hours and participation membership in trade unions, employer and employee relations, in wage and conditions of works of formal and informal workers in urban unorgainsed labour market. It strives to understand the existence of discrimination against women therein. In this connection an attempt has been made to empirically investigate prevailing gender discrimination, inequalities in terms of the occupations and earnings between male and female workers in urban unorganised sector in Uttar Pradesh.

## 2. Review of Literature

Gender discrimination in the labour market remains a persistent phenomenon and women continue to disproportionately face multiple challenges relating to access to employment, choice of work, working conditions, employment security, differential in wages and dual responsibilities of work and family. It is worth noting that the majority of women workers are typically concentrated in a narrow range of sectors, many of which are vulnerable and insecure. Such division of work

between males and females are deep rooted in our social-cultural norms with patriarchal outlook. Historically we find that women have primary responsibilities for non-market, unpaid housework and care jobs, which leads to family constraints in their labour force participation and access to paid employment. (Beneria, 2003).) Equally strong is the view that even short period gender inequalities can have long term consequences on economic growth and human development (Ranis, Stewart and Ramirez, 2000; Anupama, 2007). ILO (2011) observed that gender inequalities are also deeply entrenched in the policy and institutional frameworks that shape the employment opportunities of Asia's female labour force of 734 million (ILO and ADB, 2011). Given their vulnerable status, income generation alone may not improve the socio-economic status of women attached to the informal sector (Mohapatra, 2012). Gender differences in wage earnings are significant in case of regular workers too (Mamgain and Verick, 2018).

The available literature highlights that majority of women workers were more likely to be in the informal segments of the economy as compared to men. Large proportions were engaged in economic activities without stable contracts and steady incomes, mainly in self-employment and casual work. Ara (2015) states that the gender differences are very sharp in the self-employment activity, which employs a little less than half of male and female workers. This indicates a clear link between gender and informality, which leads to women at work being in more vulnerable situations than men (Unni and Uma Rani, 2003). Although women are part of the ever increasing 'self-employment' group, a relatively higher proportion of them work from home. Home based work emerged from the market logic of maximization of cost–cutting through unorganised, unprotected and inexpensive labour pool, its persistence and overall presence through the country also fits in well and is sustained under the discursive domain of men as 'bread winner' and women as primarily 'housewives' (Sinha, 2011; and Raju, 2013 in Raju, 2016). While considering differentials in remunerations, average wages drawn by males were higher than that of females. Employer's preference is for male workers on the grounds that women have a weaker attachment to the labour employment (Anker and Hein, 1985, cited in Raju and Jatrana, 2016). Neetha (2016) pointed that though there has been some diversification of women's employment with the emergence of newer sectors of employment, they are still confined to selected sectors/occupations.

Gender based segmentation is not the only issue, as other social and demographic attributes are also central in such fragmentation. The highly informalised work relations and the shrinking of organised space in the city that characterised current phase of employment, has been detrimental to women workers across all categories. Along with formalized gender discrimination, attitudes and behavior on the part of employers can further curtail women's capacity to take advantage of economic opportunities (Kabeer, 2012). Women have a lower chance of getting jobs than men and employers clearly discriminate against women in hiring, wage fixing and promotion (Papola, 2012; and Singh and Gupta, 2011). Handfuls of studies that exist have either focused on specific industry or specific region or specific type of workers (Ara, 2021). There are few studies that have explored the issue of wage discrimination even in the formal and informal employment in unorganized sector. Nevertheless, we could not come across studies in the India comparing discrimination in the unorganised sectors. This study fills this gap in the available literature.

## 3. Data and Methodology

The database of the study is drawn from the primary survey carried out in four districts of Uttar Pradesh where the concentration of women in labour market was more in the year 2018-19 over a period of three months. A purposive random sampling design was adopted, and different statistical tools were applied. Blinder–Oaxaca threefold decomposition method has been used for showing the

wage disparity among different occupations and between genders. For the data analysis Statistical packages viz. STATA and SPSS were used.

To study the wage/income differentials between male and female workers we have utilized Blinder–Oaxaca's threefold decomposition. This is a commonly used methodology to decompose mean differences in log wages by using linear regression models. It divides the wage differential between male and female into a part that is "explained" by group differences in determinants related to wage and part that is "unexplained". This "unexplained" part is frequently used to measure the wage discrimination. It also includes the effects of group (between male and female) differences in unobserved predictors. The outcome difference is divided into three parts in a "threefold decomposition" i.e., D= E + C + I. Of which, the first term i.e., the endowment (E) component shows the part of the earnings differential attributed to group differences in the regressors (due to endowment). The second term i.e., the coefficient component (C) shows the contribution of differences in coefficients of the two groups including the intercept. And the third term i.e., the interaction component considers the existence of endowments and coefficient differences at the same time. For the computation of 'threefold' decomposition regression following equation is used:

$$D = [E(x_{male}) - E(x_{female})]' \beta_{female} + E(x_{female})' (\beta_{male} - \beta_{female}) + [E(x_{male}) - E(x_{female})]' (\beta_{male} - \beta_{female})$$

Endowment (E) component — Coefficient (C) component — Interaction (I) component

Log daily wage of male and female workers is used as dependent variable and the independent/ explanatory variables are incorporated in this model to control for other variables that affects gender wage differentials. These are highlighted in Table 1.

## 4. Empirical Validation of Discrimination of Informal Workers

The unorganized or the informal sector account for more than 90 percent of the workforce in our country and 50 percent of the national income accrues from this sector as, reported by the Committee on Unorganised Sector Statistics (2012). Given the slow and inadequate growth of employment opportunities in the formal sector, the informal sector is expected to absorb the majority of workforce in India. The percentage share of females in informal employment is high as compared to their male counterparts because working women do not have choice to work, and work for the survival of their family. The problems of the women workers in general and in the unorganized sector in particular deserve special emphasis in view of their marginalized position within the class of workers. In this context this paper attempts to explore the existing gender differentials in the urban informal labour market of Uttar Pradesh.

The study undertook a sample of 321 women workers and 126 male respondents i.e., 447 respondents in total, who were engaged in informal\unorganized labour market. For sampling process in the first stage four districts from different regions of Uttar Pradesh were selected. According to Uttar Pradesh Economic Census 2011-12, Lucknow district was predominantly a service sector-based economy and being the capital of the State, recorded fastest growth of academic institutions. The districts of Ghaziabad, Jhansi and Varanasi showed higher female workers' concentration in non-agricultural sector. So, keeping in view the large availability of female workers who belong to 15-59 age groups these four districts were selected. The second stage encompassed the selection of urban areas to conduct survey on wage/ salary workers. The third stage comprised of randomly selecting the respondents. A self-formulated interview schedule was used for the purpose of the

primary survey. Selected workers were interviewed personally at the place of their work so they would feel more unfettered to talk. One point that needs to be noted in this connection is that a limited number of male workers in similar occupations to the women were also taken in the sample for the purpose of comparing male and female workers. This sample of 126 male informal workers is thus not representative of the male or total workforce of informal sector; however, this is only a 'control' sample occupationally comparable with sampled women workers.

**Table 1: Variable Description**

| **Dependent Variable** | |
|---|---|
| **Log daily wage** | **Value 1 for female worker's wage and 0 for male worker's wage.** |
| **Independent Variable/ Explanatory Variables** | |
| Educational level (Mean Year of Schooling) | Illiterate workers have 0 years of education.<br>Workers who have completed class 1 to 12 have 1 to 12 years of education.<br>Workers who completed first year college have 13 years of education.<br>Workers who completed second and final years of graduation have 14 and 15 years.<br>Workers who completed first year of post-graduation have 16 years and<br>Workers who completed final year of post-graduation have 17 years of education. |
| Age of employees | This variable is used as a proxy for experience. |
| Employment status | Value of 1 for full-time employment and 0 for part-time employment. |
| Marital status (Dummy Variable) | Value of 1 for married individuals and 0 for otherwise. |
| Union membership (Dummy Variable) | Value of 1 for trade union member and 0 for non-member. |
| Migration Status (Dummy Variable) | Value 1 is assigned to migrant worker and 0 for non-migrant worker. |
| Trained Worker (Dummy Variable) | Value of 1 assigned to technically trained worker and 0 for untrained worker. |
| Occupation (Dummy Variable)- | 4 dummy variables are used for construction workers, garment and textile workers, tailors and domestic workers. |

### *4.1 Distribution of Workers by Occupations*

Structural changes in labour market of UP have not benefitted females and males equally. The inequality in labor force participation and earnings, is still found in the informal labor market of UP. Although women increased their presence in labour market and narrowed the work participation gap relative to men, a considerable difference in wage and occupation still persists between the genders. Here we will find the differences in different occupation that are due to gender discrimination. The occupations are categorized on the basis of similarity of skills that basically need to fulfill the job of that particular occupation. Table 2 shows that male and female are distributed dissimilarly across occupation too.

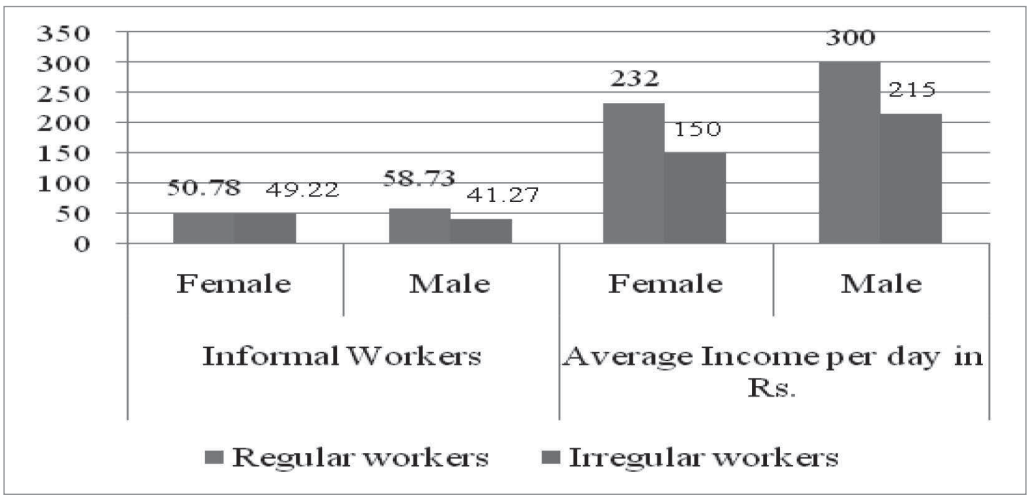
**Table 2: Distribution of the Respondents by Different Occupations**

| Occupation | Female | Male |
|---|---|---|
| Construction Worker | 77 | 40 |
| | (23.99) | (31.75) |
| Garment and Textile worker | 80 | 37 |
| | (24.92) | (29.37) |
| Domestic Worker | 81 | 2 |
| | (25.23) | (1.59) |
| Boutique/Tailor | 83 | 47 |
| | (25.86) | (37.30) |
| Total | 321 | 126 |
| | (100.00) | (100.00) |

*Source:* Primary Survey, 2018-19

What is more striking is that gender difference across occupations increased as women in female-typed work (domestic & textile workers) still earned slightly less than women and men in gender-integrated occupations (construction and tailoring). In the informal sector availability of work is irregular for workers and when work is available to them, they must work for long hours. Males are substantially better placed in regularity of work, with 58.73 per cent having regular jobs. In the case of females, only 50.8 per cent had regular jobs (Figure 1). Women are engaged largely in female typed work (domestic) compared to their male counterparts. Even with adequate endowment, women are engaged in lower stratum of each industry and occupation group and consequently receive lower pay.

**Figure 1: Percentage Distribution of Workers by Regularity of Work and Average Income**




*Source:* Primary survey, 2018-19

## 5. Background Characteristics of Workers

The results of the survey on women informal workers (Table 3) indicate that the age of working male/ females in informal sector ranges from a low 15 to a high 60 years. Table 3 distributes female and male informal sector workers into age groups below 20, 21-30, 31-45, 45 and above. A largest

number of workers (41.13 percent females and 30.16 percent males) are found within the age group of 31 to 45 years followed by 21-30 years (i.e.37.38 percent and 45.24 percent). We find that a majority of workers are relatively young and belonged to 'up to 35 years of age' but small proportion of workers are found in low and higher age group as age acquires a special significance as far as efficiency is concerned.

The distribution of workers by different religion shows that majority of workers belong to Hindu community i.e., 72.93 percent followed by Muslims (26.40 percent). As workers in the informal sector are mainly Hindus, it would be worthwhile to examine the caste structure of workers. Informal female workers are found to dominated by workers from SC community (40.50 percent), followed by OBC of which 39.56 percent of workers are found employed in informal sector as garment workers, construction labourers, domestic workers and tailors in various boutiques. The workers from general caste have also been observed to be significant i, e. 19.94 percent. As far as male respondents are concerned 50.79 percent belongs to OBC, 26.98 percent belong to SC and 22.22 percent belong to general caste category. Women informal workers were married, who have preferred to enter the informal labour market for survival due to lack of alternative remunerative employment opportunities. Among males, 57.94 percent were married, and 41.27 percent were unmarried.

In addition, nuclear family were found to be common in urban areas. Survey result reveal that majority of the women workers (82.87 percent) were from nuclear family. Similarly more than two-thirds of male informal workers (73.02 percent) belonged to nuclear family (Table 3).

**Table 3: Background Characteristics of Informal Workers**

| Caste | Female | Male | Total |
|---|---|---|---|
| General | 64(19.94) | 28(22.22) | 92(20.58) |
| OBC | 127(39.56) | 64(50.79) | 191(42.73) |
| SC | 130(40.50) | 34(26.98) | 164(36.69) |
| Religion | | | |
| Hindu | 249(77.57) | 77(61.11) | 326(72.93) |
| Muslim | 70(21.81) | 48(38.10) | 118(26.40) |
| Sikh | 1(0.31) | 1(0.79) | 2(0.45) |
| Christian | 1(0.31) | 0(0.00) | 1(0.22) |
| Age | | | |
| Below 20 (15-20) | 39(12.15) | 16(12.70) | 55(12.30) |
| 21-30 | 120(37.38) | 57(45.24) | 177(39.60) |
| 31-45 | 132(41.13) | 38(30.16 ) | 170(38.03) |
| 45 & above | 30(9.35) | 15(11.90) | 45(10.07) |
| Marital Status | | | |
| Married | 225(70.09) | 73(57.94) | 298(66.67) |
| Unmarried | 71(22.12) | 52(41.27) | 123(27.52) |
| Divorced/widow | 25(7.49) | 1(0.79) | 26(5.82) |
| Family- Type | | | |
| Nuclear | 266(82.87) | 92(73.02) | 358(80.09) |
| Joint | 55(17.13) | 34(26.98) | 89(19.91) |
| Total | 321(100.00) | 126(100.00) | 447(100.00) |

*Source:* Primary survey, 2018-19

### *5.1. Educational Characteristics*

Majority of informal women workers were illiterate (34.58 percent), particularly amongst the construction and domestic workers. (Table 4). A higher percentage of male informal workers have completed their schooling.

**Table 4: Distribution of Workers by Educational Level**

| Education | Female | Male | Difference |
|---|---|---|---|
| Illiterate | 28.79 | 14.12 | -14.67 |
| Can read & write | 6.31 | 4.12 | -2.19 |
| Primary | 7.32 | 19.41 | 12.09 |
| Middle | 12.63 | 22.35 | 9.72 |
| High-school | 10.61 | 12.35 | 1.74 |
| Intermediate | 13.38 | 14.12 | 0.74 |
| Graduate | 14.65 | 8.82 | -5.83 |
| Postgraduate | 5.56 | 3.53 | -2.03 |
| Technical | 0.76 | 1.18 | 0.42 |

*Source:* Primary survey, 2018-19

The proportion of illiterate in case of male informal workers were nearly 15.87 percent which is about half from the female informal workers. It was found that about 75 percent of the male workers were literate, however, only 13.49 percent of the male informal workers were found literate up to intermediate and graduate level. The low education level in the informal sector suggests that the informal sector absorb many workers who were unable to find employment in the formal sector.

### *5.2 Wage/ Income Distribution*

**Table 5: Distribution of Workers by Income groups**

| Income groups | Female | Male | Difference |
|---|---|---|---|
| Below 5000 | 40.81 | 11.11 | -43.1 |
| 5001- 10000 | 46.11 | 63.49 | 21.12 |
| 10001-15000 | 10.59 | 23.81 | 20.38 |
| 15001-20000 | 1.25 | 1.59 | 1.59 |
| Above 20000 | 1.25 | 0 | -1.25 |
| Total | 100.00 | 100.00 | 0 |

*Source:* Primary survey, 2018-19

Those who were working as construction labourers had high wages as compared to their counterparts in other occupations (garment, domestic and tailoring job in our case). It was observed that 63.49 percent male informal workers earned income between Rs. 5000 to Rs. 10000. However, 11 percent of them were earning low wages i.e., below Rs.5000 per month (Table 5). On the contrary 23.81 percent male workers were earning Rs.10000-15000 per month. Very few tailoring workers (i.e., only 1.59 percent), were earning 20000 Rupees per month (Table 6).

**Table 6: Percentage Distribution of Workers by Monthly Income and Occupation**

| | | Construction | Garment | Domestic | Tailor |
|---|---|---|---|---|---|
| Below 5000 | Female | 4.98 | 18.07 | 19.63 | 11.53 |
| | Male | 0.79 | 7.14 | 0 | 3.17 |
| | **Difference** | -4.19 | -10.93 | -19.63 | -8.35 |
| 5001- 10000 | Female | 12.77 | 10.28 | 10.59 | 12.46 |
| | Male | 21.43 | 17.46 | 1.59 | 23.02 |
| | **Difference** | 3.36 | 10.92 | -3.71 | 10.55 |
| 10001-15000 | Female | 1.87 | 3.43 | 1.87 | 3.43 |
| | Male | 9.52 | 4.76 | 0 | 9.52 |
| | **Difference** | 8.59 | 4.45 | -0.31 | 7.65 |
| 15001-20000 | Female | 0.93 | 0.31 | 0 | 0 |
| | Male | 0 | 0 | 0 | 1.59 |
| | **Difference** | 0 | 0 | 0 | 1.59 |
| Above 20000 | Female | 0 | 0.62 | 0.31 | 0.31 |
| | Male | 0 | 0 | 0 | 0 |
| | **Difference** | 0 | 0 | 0 | 0 |
| Total | Female | 23.99 | 24.92 | 25.23 | 25.86 |
| | Male | 31.75 | 29.37 | 1.59 | 37.3 |
| | **Difference** | 7.76 | 4.44 | -23.65 | 11.44 |

*Source:* Primary survey, 2018-19

Findings of our survey show that the dairy wages of women are significantly lower than that of men, indicating the reality that women workers are not only concentrated in low paid occupations in the informal sector but are subjected to discrimination in payment. The average wage per day was Rs. 219.5 for men and Rs. 193.7 for women (Table 7). Regardless of improvements in the wage gap between women and men workers, wide gaps still exist or to say it still persists in the unorganized segment of the labour markets.

**Table 7: Wage Per Day (Rs.) by Occupation and Gender**

| Wage-groups | Construction Worker | | Garment/ Textile Worker | | Domestic Worker | | Tailor | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male |
| below 100 | 30 | 9 | 10 | 11 | 28 | 2 | 8 | 14 | 76 | 36 |
| 100-200 | 19 | 14 | 31 | 8 | 25 | 0 | 32 | 10 | 107 | 32 |
| 300-400 | 18 | 11 | 20 | 9 | 18 | 0 | 23 | 17 | 79 | 37 |
| 400-500 | 7 | 2 | 11 | 6 | 6 | 0 | 15 | 4 | 39 | 12 |
| 500-600 | 3 | 1 | 8 | 1 | 4 | 0 | 5 | 2 | 20 | 4 |
| 700-870 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Average Wage (in Rs.) | 155.0 | 218.1 | 229.6 | 309.9 | 158.6 | 50.0 | 231.6 | 300.0 | 193.7 | 219.5 |

*Source:* Primary survey, 2018-19

## 6. Empirical Validation of Wage Gaps

For the identification of factors responsible for gender wage/income gap we have used the Blinder–Oaxaca's threefold decomposition to decompose mean differences in log wages of male and female

informal workersThe Blinder-Oaxaca decomposition results in Table 8 give a clear view of the contribution attributable to the gaps in the endowments, the coefficients and the interaction. These results indicate that the gender gap in wages is mainly attributable to discrimination in the labour market. The decomposition output reports the mean predictions by groups and their difference in same table.

**Table 8: Results of Threefold Blinder-Oaxaca Decomposition**

| Variables | Male | Female | % to total Gap |
|---|---|---|---|
| Wage Gap | 4.83 (0.0437)*** | 4.75 (0.0209)*** | |
| due to endowments (explained) | -0.05 | | -66.48% |
| due to coefficients (unexplained) | 0.11 (0.0655) * | | 142.74 |
| due to interaction | 0.02 (0.0680) | | 23.73 |
| Raw Differentials (RD = E + C + I) Total Gap | 0.08 (0.0485) * | | 100.00 |
| No of Observation | 126 | 321 | |

*Notes:* Robust standard errors in parentheses; ***p < 0.01; **p < 0.05; * p < 0.1

In our analysis, the mean of log wages is 4.83 for males and 4.76 for females, yielding a wage gap of 0.78. This difference in wage is primarily defined as 'the gap between benefit of being male and cost of being female' in the labour market. The wage gap is divided into three parts in the second panel of decomposition output. The first part reflects the mean increase in women's wages if they had the same characteristics as men. The coefficient value of -0.05 in the table indicates that differences in determinants account for sufficient difference in the wage gap. The difference due to endowment is negative, so endowments are better for females. The second part quantifies the change in women's wages when applying the men's coefficients to the women's characteristics. The third part is the interaction term that measures the direct effect of differences in endowments and coefficients (Jann, 2008). The decomposition result (in Table 8) clearly shows that the difference between male and female wage (0.078) is largely due to the coefficients. It has shown that the gap in coefficients (0.110) accounts for the large part of the gap in outcomes. Differences in the effects of the determinants also play an important part in explaining gender wage gap. The overall gender gap in log (earnings) is 0.08, of which 66.47 per cent can be explained due to endowment (E) differences such as educational status, age, type of employment, marital status, migration status, union membership, training and type of occupations); whereas a higher 142.74 per cent is attributable to coefficients (C) which indicates gender discrimination in labor market. Specifically, (C) accounts for more than hundred per cent of the gender wage gap. However, most of the difference remains unexplained which is generally attributed to discrimination in urban informal labour market. The fact that the sum of these contributions exceeds 100% merely indicates that explanatory variables contribute to increasing the wage gap. Hence the results of decomposition analysis show a high overall raw wage differential.

Table 9 shows the coefficients for each part in detail, that is the difference between male and female mean earnings and expected contributions of endowments, coefficients and their interactions.

**Table 9: Gender Wage Gap Threefold decomposition (Blinder-Oaxaca)**

| Variables | Endowments (% of the total gap) | | Coefficients (% of the total gap) | | Interaction (% of the total gap) | | Total Difference |
|---|---|---|---|---|---|---|---|
| Education Level | -0.002 | -{2.93} | 0.021 | {28.07} | 0.002 | {2.35} | 27.49 |
| Age (for experience) | -0.005 | -{7.05} | 0.985 | {1271.40} | -0.012 | -{15.77} | 1248.59 |
| Full/Part time Emp | -0.078 | -{100.50} | 0.680 | {877.05} | 0.078 | {100.50} | 877.05 |
| Marital Status | 0.014 | {18.68} | 0.038 | {48.53} | -0.007 | -{8.42} | 58.79 |
| Union membership | 0.012 | {15.82} | -0.002 | -{2.41} | -0.018 | -{23.20} | -9.79 |
| Migration status | 0.000 | {0.49} | 0.164 | {212.22} | 0.002 | {2.39} | 215.10 |
| Trained Worker | 0.002 | {2.25} | -0.112 | -{145.09} | -0.007 | -{9.09} | -151.94 |
| Construction | -0.001 | -{0.85} | 0.002 | {2.78} | 0.001 | {0.90} | 2.83 |
| Textile\Garment | -0.001 | -{1.84} | 0.047 | {61.05} | 0.008 | {10.88} | 70.09 |
| Domestic | 0.007 | {9.44} | 0.008 | {10.08} | -0.007 | -{9.44} | 10.08 |
| Tailor\Boutique | (dropped) | | -0.048 | -{61.84} | -0.021 | -{27.37} | -89.21 |
| Intercept | 0.000 | {0.00} | -1.673 | -{2159.07} | 0.000 | {23.73} | -2135.34 |
| Subtotal | -0.051 | -{66.48} | 0.111 | {142.76} | 0.0183 | {23.73} | 100.01 |

*Source:* Primary survey, 2018-19

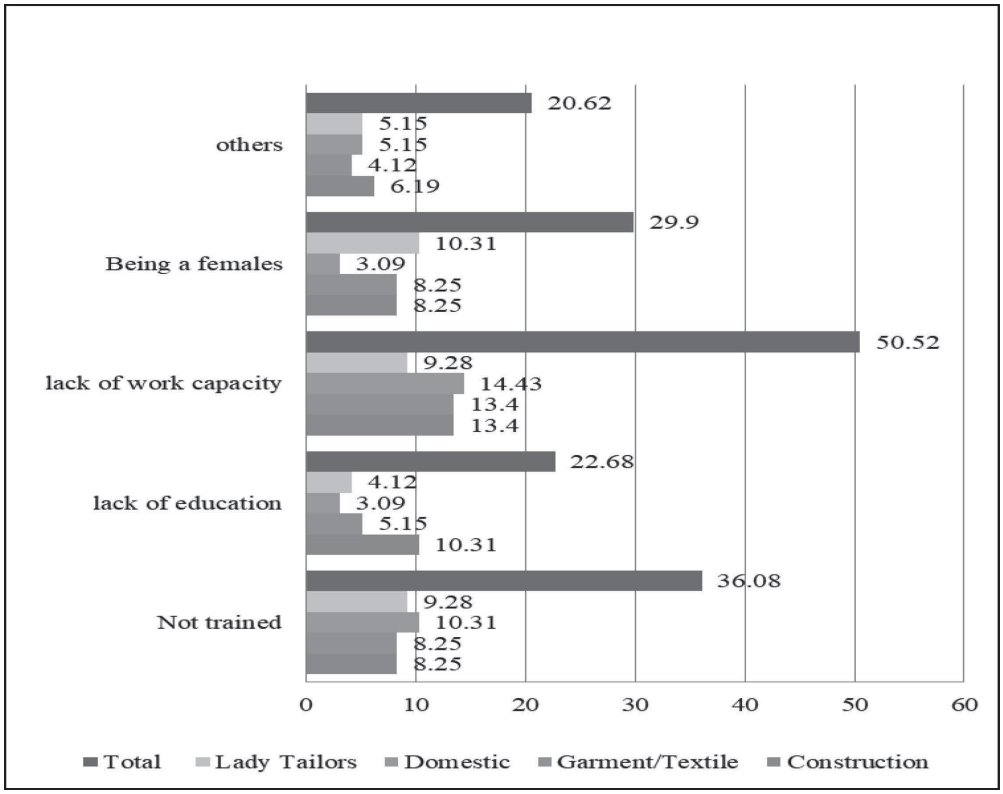
The wage difference between gender (male and female) is predominantly due to difference in coefficients (discrimination in labour market). However, the endowment effect of the full-time employment variables is pretty large, accounting for -100% of the total gap of − 0.0775. The coefficients for other variables in the endowments are smaller than 0.01 and have small influence on wage gap.

From the results, we can conclude that the effect of 'employment status' plays an important role on gender wage gap. Hence, difference in employment status, marital status and union membership account for more than half the explained part of the outcome differential, whereas wage gap due to occupational segregation based on the four occupational categories (groups) does not seem to matter much. Discrimination effect as part of the total difference in wages is stronger at age, full employment, migration status and trained workers as compared to the endowment effect. Generally, increase or improvement in educational status, full employment, age, trained workers and migrant workers reduces discrimination significantly. At the education level, we have noticed that the total difference in wage between men and women is 27.49 per cent, of which 28.07 per cent is due to coefficient (discrimination) and -2.93 per cent is attributable to the endowment. These findings are quite significant, particularly when there has been a rapid increase in the contractualisation of employment and worsening of quality of employment in India after the economic reforms (Goldar and Suresh, 2017).

## 7. Reasons of Discrimination in Wage/ Income

This kind of discrimination is highlighted frequently in the literature, and the gender-based wage discrimination has been emphasized from time to time by economists and sociologists alike (Padhi, Mishra and Pattanayak, 2019; and Mamgain, 2019).Women workers are not only concentrated in low paid occupations in the unorganized sector but are subjected to discrimination in payment. In this survey lack of training, lack of education and skill, low work capacity were the main reasons stated by the respondents for prevailing wage discrimination in the urban unorganized sector of Uttar Pradesh (Figure 2).

**Figure 2: Reasons of Wage/Income Discrimination**




*Source:* Primary survey, 2018-19

Majority of respondents i.e., 50.52 percent reported that lack of work capacity/working power is the foremost reason for existing wage gaps in the labour market. Similarly, 22.68 percent respondents reported that lack of education and skill is also an important reason for wage gap. Approximately 30 percent women believed 'being a woman' factor is the main reasons for getting low wages as compared to male workers, as the major problem for them arise out of their dual job responsibility of house- work and the outside work.

### *7.1. Discrimination Caused by 'Being Women'*

The empirical results from this study conclusively confirm that the women are being over-represented in unpaid and part-time jobs as compared to the jobs with positive characteristics under informal sector. Generally lower wage rate jobs are assigned to women and higher wage rate jobs are assigned to men (Kumar and Srivastava, 2021). For majority of women engaged in paid economic activity, the fact of being female means being paid less than men for their work. Many studies have documented the sex typing of job and occupation by women. It is observed that in most industry groups there is a hierarchy of jobs where the women are placed at the bottom and men are in the higher rungs of job. When respondents were asked that- did they work equal to their male colleagues, 60.75 percent respondents asserted being equal to their male colleagues and on the other hand 21.17 percent were

apprehensive about being treated differentially as employers do not consider them equal to males and were treated inferior at their workplace. Because male workers were largely confined to regular, managerial or technical jobs 17.76 percent said that they cannot say anything about this as they were not aware of the work assigned to their female counterparts.

**Table 10: Discrimination Caused by 'Being Women' Factors**

| "Being Women" Factors | Construction Worker | Garment and Textile worker | Domestic Worker | Boutique/ Tailor | Total |
|---|---|---|---|---|---|
| Your Work is Equal to Your Male Counterparts | 13.71 | 16.51 | 13.71 | 16.82 | 60.75 |
| Not getting equal pay/allowance | 8.72 | 7.79 | 6.54 | 7.17 | 30.22 |
| Not getting less work than males | 12.77 | 17.45 | 15.26 | 17.76 | 63.24 |
| Tension and stress in workplace | 14.33 | 12.46 | 13.08 | 14.02 | 53.89 |
| Permanent(without written contract) | 16.20 | 17.13 | 14.95 | 16.20 | 64.49 |
| Removed/Fired from a job because of being a woman | 0.31 | 1.25 | 0.93 | 0.93 | 3.43 |
| Family's do not support Working Outside | 2.18 | 1.24 | 1.55 | 1.24 | 6.23 |
| Husband support in Household Work | 3.43 | 2.80 | 4.67 | 5.30 | 16.20 |
| No Reward for Good Performance at Workplace | 20.56 | 18.38 | 22.43 | 19.94 | 81.31 |
| No maternity leave facilities | 21.50 | 22.43 | 23.68 | 24.30 | 91.90 |
| Have to work on Sundays and other government holidays | 16.51 | 15.89 | 17.76 | 17.76 | 67.91 |
| Non Recognition as worker | 10.12 | 7.56 | 15.36 | 8.56 | 25.56 |

*Source:* Primary survey, 2018-19

To cross check responses, when we asked the reverse question whether they got lesser work than their male counterparts, majority of respondents (63.24 percent) stated that they did not get less work as compared to their male colleagues, some time they have to do more work. Rajalakshmi (2005) observed that women work as hard as men, perhaps even more, considering the burden of household duties and rearing children. In garment factories females do all type of work. In the textile or garment industry the job of supervision and machine operators are male dominated, while the preparatory work of making of fiber and yarn are completed by women. Sewing and embroidery work are clearly dominated by women (Pandya and Patel, 2017). Working women (53.89 percent) face stress relatively more compared to men. Working women may possibly face social and economic assault because of the invisibility of the informal sector.

The informal nature of work, indicate that workers do not raise their voice for fear of losing their employment. Few respondents i.e. 3.43 percent stated that they have been removed from job owing to their gender (Table 10). Even though the employment of women is accepted, most of the in-laws and majority of the husbands have not accepted the changing life pattern of women in urban areas. They are not prepared to share the responsibilities of the household chores and of looking after children. Women have to face dual responsibilities i.e. of homemaker (wives and mothers) and bread-winner (economically active). 6.23 percent of respondents reported that their family members do not like them to work outside. Very few i.e., 16.20 percent respondent stated that due to sharing of housework by their husband they are working freely in their respective workplaces. Though

occasional sharing of house- work by husband was reported by few respondents, it was never the norm, majority of respondents (40.81 percent) have stated sharing of house-work by the husband is not feasible in their case. Rewards are a powerful method for encouraging good job performance but in the present survey majority of women employees (81.31 percent) said that their employer did not show enough appreciation for their work. Only 18.69% women employees reported that they are appreciated and rewarded at their work place. Nearly 92 % stated that they are not getting any type of maternity leave benefits, and most of the women workers reported that they had to work on Sunday and government holidays. Some of them stated (domestic worker) that they took leave when they need to visit to their native place or family.

Non recognition as workers is another problem faced by women workers (25.56 percent). Often the work of women in informal sector is unrecognized by society, their families and even themselves. If a female is discriminated against on the grounds of being a female either in recruitment or promotion or wage increase it is defined as gender discrimination.

## 8. Conclusion and Way Forward

The empirical results from this study conclusively confirm that the women are being over-represented in unpaid and part-time jobs. Beside tension/stress and unequal pay/allowance, non-recognition as workers were the major problems faced by females in the informal sector. The survey results have shown that women have more chances of getting employed in less productive and unskilled occupations. Considerable numbers of women were of the view that male workers have more job opportunities than female workers. The wage per day of women is significantly lower than that of men. It is also observed that a significant differential in wage prevails between women and men wage workers, particularly among those with low levels of education, social status and in higher age groups. Regardless of improvements in the wage gap between women and men workers, wide gaps still exist even when they work equal to their male colleagues. This paper decomposes the gender wage gap along the entire wage distribution into an endowment effect and a discrimination effect. We find that women are paid less than men and the gap is higher at the lower end of the distribution. Discrimination against women is the primary determinant of the wage gap. Women are often seen in the lower categories of the job hierarchy. They had no paid leave or other benefits. Due to differences in endowments of workers viz., education, training and part time employment, women are working at very low wages (for the same work and duration of working) as compared to male workers.

From policy perspective we understand that discrimination depends critically on the role of labour market institutions such as collective bargaining and minimum wages regulations (Srivastava, 2019). Promoting equal pay for equal work becomes more difficult if labour markets become more segmented.

Three broad interrelated strategies can be identified to meet the vulnerability of labour and reshape labour markets to some extent: Firstly, efforts should be made to strengthen social policy aiming to reducing the vulnerability of workers by implementing social protection and extending minimum legislated conditions of work. The social security/social protection package envisaged must address the issue of segregation and rights-based social protection codes being implemented in the labour markets to reduce the gender based vulnerabilities in the unorganized sector. Secondly, the issue of employment security and labour market security for all workers be it temporary, part-time or full-time should be addressed. Such social securities if implemented would assure employment and income security to its workers. Srivastava (2019) focuses on how reviews of changes in labour laws relating to the more flexible forms of employment (fixed-term employment, temporary agency

work, contract labour, etc.) in many countries have transformed these laws to reduce such gaps and bring forth standard employment principle of equal treatment of workers. Thirdly, the anti-discrimination framework in India needs to be strengthened. Laws in India only provide legislations on paper dealing with discrimination. A review of such laws against discrimination in multitudes of countries throws light on a comprehensive framework against social and economic discrimination both inside and outside the sphere of employment. While India is a signatory to ILO Convention 111, we do not have a statutory framework to implement the provisions of this Convention.

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# SAFETY AT WORKPLACE, HEALTH AND WORKING CONDITIONS OF WORKERS IN THE MANUFACTURING SECTOR IN AHMEDABAD

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**Abstract:** The manufacturing industries are often found to be associated with risks of morbidity and mortality that raise the concern of policy makers regarding the introduction and sustenance of various safety measures at those industrial units. Using data collected through a primary survey before the onset of Covid-19 Pandemic during 2019-2020 this paper makes attempt to: a) ascertain the status of safety and health of workers at factories in selected manufacturing industries in Ahmedabad; b) discuss their working conditions and, c) discuss the governance of occupational safety and health. In the process of understanding the issues of health and safety at the factories the paper also highlights how the workers perceive their safety and health issues along with their working conditions. The results are useful in highlighting the status of occupational safety and health of workers as well as the challenges pertaining to governance of in the manufacturing industries in Gujarat for effective formulation of policies.

**Keywords:** Ahmedabad; Manufacturing sector workers; Gujarat; Occupational safety and health; Working conditions

## 1. Introduction

The origins of health and safety law at work places remain with political responses to social problems arising from the upheaval of the Industrial Revolution in Europe. Various labour laws and standards came into place over time with the primary concern for the protection of labour. The recent occupational safety and health (OSH henceforth) code also makes an attempt to consolidate the legislative provisions with regard to safety and health at the workplaces. Being one of the oldest industries in India the idea of labour welfare started first in the textile sector during early decades of the twentieth century in Gujarat. Gujarat shares over 11 % of all Industrial workers in India placing the State in the third rank in the country in terms of employment of workers.

As the earlier studies suggest, factories in various manufacturing industries are often found to be associated with high evidence of casualization and informal employment (Srivastava, 2016) and Gujarat evidently has very large share of casual workers employed in the manufacturing sector at

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68.4% as against average of 55.5% (NSSO 2018). Therefore, the government has made efforts to fulfil the need for social security and other benefits for the casual and informal workers. Commissionerate of Labour under the State Government of Gujarat is of firm view to have 'Umbrella Legislation' in the State to provide social security and other benefits to informal sector labour which comprises around 93% of the total workforce.

With rapid urbanization and a rich history of industrialization, Gujarat has been experiencing more and more number of workers taking part in industrial activity, particularly in the manufacturing sector, which operate both as organized and unorganized enterprises. The manufacturing industries are often found to be associated with risks of morbidity and mortality that raise concerns of policy makers regarding the introduction and sustenance of various safety measures at these industrial units. Given this backdrop, this paper makes an attempt to: a) ascertain the status of safety and health of workers at factories in selected manufacturing industries in Ahmedabad; b) discuss their working conditions and, c) discuss the governance of OSH.

## 2. Existing Literature in Brief

The concept of health as a determinant of labour productivity and thus a crucial component of human capital dates back to 1957 when Leibenstein (1957) pioneered the nutrition-based efficiency wage hypothesis that was later on formalized by Bliss and Stern in 1978 (a and b). The human capital theory, which goes beyond the nutrition-based efficiency wage model by conceptualizing health as an element of human capital in the process of economic and human development, argues that health has pervasive effects on wages, earnings, participation, hours worked, retirement, job turnover and benefits packages (Ghatak, 2010). The linkages of health and productivity have twofold implications that highlight the "feel bad" factor of falling sick as well as loss of labour-time (from market and non-market activities) due to sickness (Grossman, 1972a and 1972b). However, in the theoretical understanding of health-labour linkages "health" was considered mainly in its physical terms keeping the mental and social health at bay. While the theories are found to be relevant mainly in the context of agricultural sector in the low-income countries, they pave the way for further studies on the importance of health as a component of labour and labourers' wellbeing.

The workers' health is very much dependent on the quality of their work and the working conditions and work-environment. The concern for quality of work dates back to early 1900s when the Labor Union activities in 1930s and 1940s bring about improvement in work conditions through collective bargaining and legislation in USA (Hoxie, 1918). In the 1950s, job enrichment schemes and equal employment opportunities were introduced (Walton, 1973). The studies also argue that quality of work not only enhances the productivity of workers, but also invokes qualitative values such as sense of belonging and pride associated with their occupation/work (Davis and Cherns, 1975; Sashkin and Burke, 1987).

The involvement and participation of workers in the development and management of their workplaces is one of main characteristics observed in the process of ensuring quality of work (Skrovan, 1983). Their participation is discussed in the literature as "participative management" and "industrial democracy" in operational sense (Nadler and Lawler, 1983), which implies that all employees of the organization have some say about their designation, work-environment, and so on (Bachner and Bentley, 1983). Thus, collective bargaining plays a crucial role in the process of quality of work (Maccoby, 1984). It is argued that the management and union need to 'support localized activities and experiments to increase employees' participation in determining how to improve their work' (Jayaram, et.al., 2016). In essence, the quality of work requires relationship and mutual respect

between management and the union (Maccoby, 1984; Kotzé and Roodt, 2005), but it also requires the environment of collective bargaining that includes the employees in decision-making, especially in matters such as new technology, work-environment, skill training and development (Deutsch and Schurman, 1993).

Occupational safety and health assumes a crucial role as part of work-environment as it is implemented by the organizations targeting safety of their employees (Vinodkumar and Bhasi, 2010). Safety and Health Practices are observed to reduce the chances of an accident happen in the manufacturing workplace (Hamid, 2015). Company that provides a well-designed OSH programme can affect employees to enhance their safety performance in workplaces (Huang et al., 2006).

## 3. Methodology

The study uses data from both secondary and primary sources. The information available with the Annual Survey of Industries (ASI), Director Industrial Safety and Health (DISH) and District Industries Commissionerate (DIC), for various years ranging from 2004 to 2019 help in understanding the accidents at factories and in identifying the industries for the purpose of a survey among the manufacturing sector workers in the selected estates in Ahmedabad cluster.

In order to substantiate the evidence highlighted above the study focuses on the manufacturing sector in Gujarat that exhibits high level of informalization and casualization. According to the NIC classifications at two-digit level there are 24 industries forming the entire manufacturing sector in India. For the purpose of the study, a multi-stage stratified random sampling procedure has been adopted to identify the manufacturing units at each estate in the Ahmedabad cluster. The industries are ranked based on the number of workers engaged in each industry in Gujarat as well as the Ahmedabad industrial cluster. Similarly, the industries are also ranked based on the number of recorded accidents including the fatal and non-fatal injuries. Top seven industries with large numbers of workers and recorded accidents were selected for the purpose of this study (Table 1). Out of the seven industries one fell in the category of hazardous or risky (in terms of fatal and non-fatal accidents) industries.

**Table 1: Number of factories and workers in the selected manufacturing industries in Ahmedabad and Gujarat**

| Type of Industries | Total No. of Factory | Sample No. | Workers No. | Small* | Medium* | Large* |
|---|---|---|---|---|---|---|
| Metals | 566 | 60 | 145 | 129 | 16 | |
| Textiles | 272 | 27 | 97 | 41 | 33 | 23 |
| Tobacco | 12 | 2 | 10 | | 10 | |
| Machinery & Equipment | 789 | 110 | 286 | 245 | 17 | 24 |
| Motor, Vehicles | 93 | 11 | 42 | 7 | 10 | 25 |
| Paper & Paper Products | 77 | 8 | 27 | 18 | 9 | |
| Computer, Electronics | 38 | 6 | 20 | 14 | 6 | |
| Overall | 1847 | 224 | 627 | 454 | 101 | 72 |

*Note:* *Distribution of factories by the total number of workers (Size) Small (< 50 Workers); Medium (50 to 249 Workers); Large (> 249 Workers)

*Source:* District Industries Commissionerate in Ahmedabad, 2019

While number of workers employed and the reported numbers of fatal and non-fatal injuries were used to identify each industry, the location of factory was also kept in mind, so that that the

survey covered a wide spread of industrial estates in the Ahmedabad cluster (Table 2). At the second stage, the selected industries' geographic distribution among several industrial estates in Ahmedabad is considered. Location for each industry is chosen based on its large presence. Thus a total number of eight industrial estates including Odhav, Vatva, Narol, Naroda, Changodar, Sanand, Kathvada and Chharodi are included as part of the field work which was conducted in 2019-20.

**Table 2. Distribution of workers by zone and type of industry**

| Industry Zone | Textiles | Steel & Basic Metal | Machinery & Equipment | Paper & Paper Product | Transport & Motor Vehicle | Tobacco | Computer | Total |
|---|---|---|---|---|---|---|---|---|
| Odhav | 25 | 80 | 54 | | | | | 159 |
| Vatva | 1 | 5 | 205 | 6 | | | 4 | 221 |
| Narol | 46 | | | 10 | | | | 56 |
| Naroda | 25 | 60 | | 11 | 4 | | | 100 |
| Changodar | | | | | 8 | 10 | 12 | 30 |
| Sanand | | | | | 24 | | | 24 |
| Kathvada | | | | | | | 4 | 4 |
| Chharodi | | | 27 | | 6 | | | 33 |
| Total | 97 | 145 | 286 | 27 | 42 | 10 | 20 | 627 |

*Source:* Primary survey, 2019-20

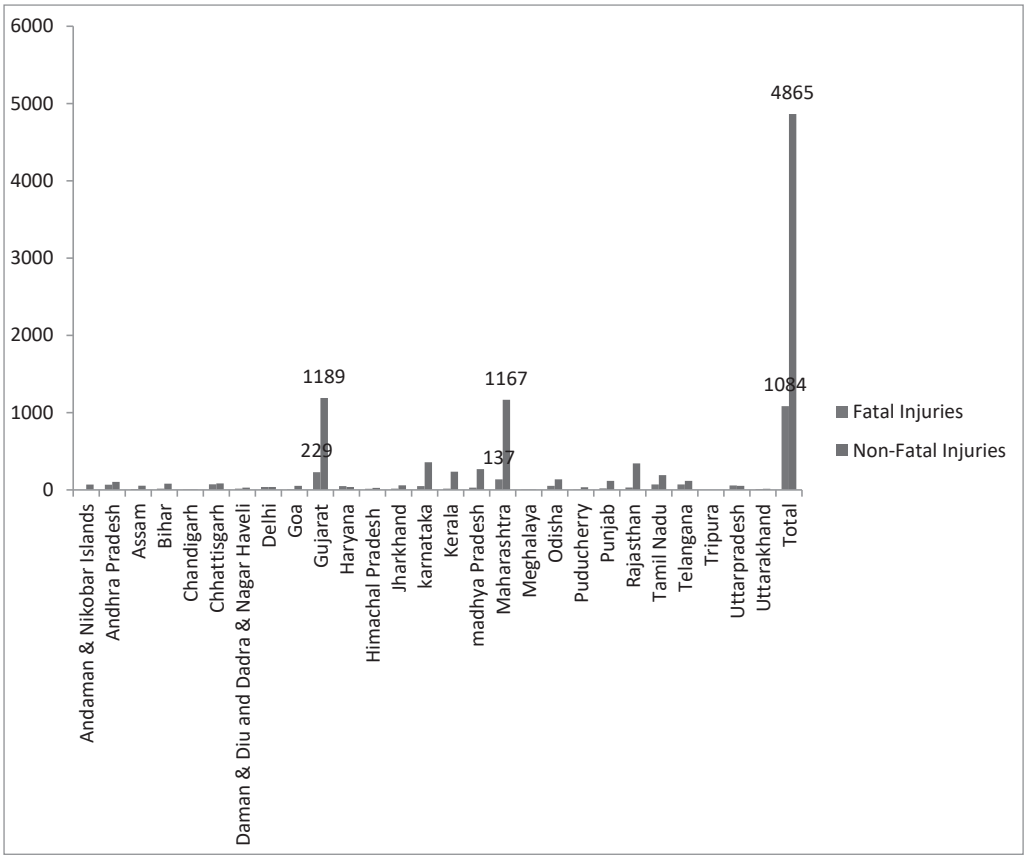
At the last stage at least 10 per cent of total number of factories from each industry was selected using the random number technique from each location. Similarly, at least 10 per cent of total number of workers available in the shift from each factory at the time of survey was included as respondents in the survey. In addition to the survey, 11 case studies and seven FGDs were also conducted. A total number of 627 workers from 224 factories belonging to basic metals, textile mills, tobacco, machinery and equipment, motor vehicles, paper & paper products and computer and electronics were included in the survey. When the size of factories is classified based on the number of workers it is observed that the small factories dominate the manufacturing sector (Table 1).

## 4. Safety at Workplace

The manufacturing industries are often found to be associated with risks of morbidity and mortality that raise concern of policy makers regarding the introduction and sustenance of various safety measures. Radhakrishna (2020) noted that Gujarat was one of the leading States in witnessing industrial accidents and deaths (629) after Delhi Maharashtra and Rajasthan. Gujarat recorded 1179 fatal injuries in the industries followed by Maharashtra (761), Tamilnadu (451), Chhattisgarh (431), Andhra Pradesh (341), Karnataka (347) and Telangana (304). The DGFASLI (2017, 2020) reports that with 229 fatal and 1189 non-fatal injuries Gujarat tops the chart (Chart 1).

However, Gujarat, which experiences at least 11 per cent of the total number of accidents that take place in the manufacturing sector in India (from 2004 to 2016), has witnessed decline in both fatal and non-fatal accidents (Table 3). The data available with the Director Industrial Safety and Health (DISH) in Ahmedabad for the period from 2004 to 2015, reveal that the total number of (reported) accidents at factories had gone up in India from 182 to 302 while the percentage of fatal accidents to total reportable accidents declined from over 73 per cent to 54 per cent (Chart 2).

**Chart 1: Fatal and Non-fatal Injuries in Factories by Major States and UTs in 2017**



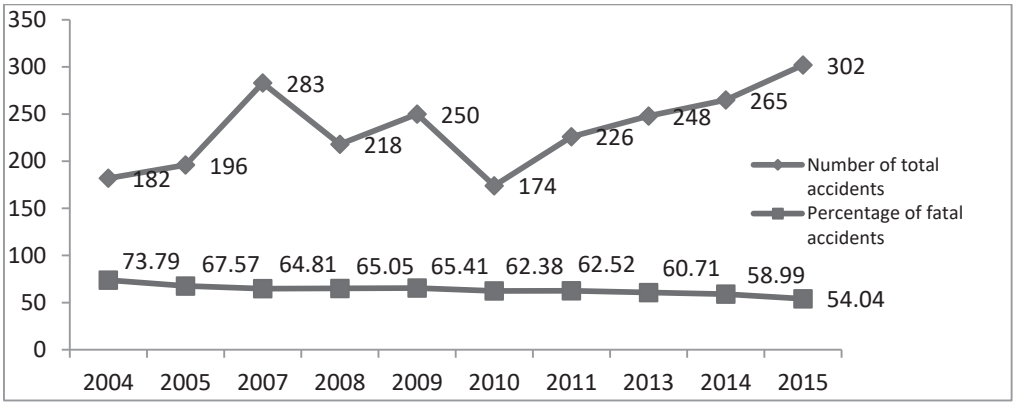

*Source:* https://www.dgfasli.gov.in/sites/default/files/safety_document/factories_2017.pdf

**Table 3: Non-fatal Accidents Reported in Registered Factories**

| Year | Total Factories | Non-Fatal Accidents |
|---|---|---|
| 2008 | 33621 | 2875 |
| 2009 | 34860 | 2984 |
| 2010 | 36179 | 2430 |
| 2011 | 37546 | 3014 |
| 2012 | 39181 | 2781 |
| 2013 | 40910 | 2285 |
| 2014 | 42065 | 1751 |

*Source:* Director Industrial Safety and Health (DISH), 2019

**Chart 2: Total and fatal accidents in Ahmedabad from 2004 to 2015**




*Source:* Same as Table 3

The same data set further reveals that Ahmedabad ranks one of the highest in reporting the industrial accidents/injuries including both fatal and non-fatal types. Further, during the period from 2013 to 2021, Ahmedabad, Surat, Bharuch and Valsad recorded large number of industrial accidents/injuries including both fatal and non-fatal. While fatal accidents have not reduced the non-fatal accidents showed a declining trend during the period 2008 to 2014 (Table 4) in Ahmedabad.

**Table 4: Fatal and Non-fatal Accidents in Manufacturing Sector in Gujarat and India**

| States/UTs | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | NF | F | NF | F | NF | F | NF | F | NF | F | NF |
| Gujarat | 249 | 3014 | 0 | 0 | 0 | 0 | 240 | 1751 | 248 | 1534 | 37 | 1207 |
| India | 1433 | 28404 | 682 | 5087 | 494 | 1951 | 1211 | 25403 | 1118 | 19729 | 299 | 2002 |

*Note:* F - Fatal; NF - Non-Fatal
*Source:* Various rounds of DISH data collected in 2019

Fieldwork in various industrial estates of Ahmedabad cluster in 2019-20 revealed that the actual number of accidents and injuries is much higher than what is reported officially, due to reasons including inconvenient safety gears, poor awareness among workers, lack of industrial and/or political will, and lackadaisical attitude of the unions in the matter. The disaggregated figures on the basis on type of the industry showed that manufacturing of textiles, followed by manufacturing of machinery and equipment, paper and paper products, fabricated metal products, and manufacture of basic metals are the top industries in which dangerous occurrences with or without injuries were recorded (Annexure Tables 1 & 2). As far as causes are concerned, gassing, transport, explosion, fire, electricity and primary movers were the main identified causes of accidents and injuries at the factories.

While the official statistics reveal that the number of accidents have declined, the primary survey showed that there were substantial number of accidents takes place in the manufacturing sector. Further, number of accidents found in transport and motor vehicle industry were more than that in machinery and equipment, textiles and others (Table 5). Although the factories were categorized into small, medium and large groups, there was no significant difference observed in terms of number of accidents, working hours or wages with regard to size of units.

**Table 5: Percentage of Respondents reported any Accident in the Last 12 months prior to the Survey**

| Industry Type | Yes | No | Don't Know | Total |
|---|---|---|---|---|
| Textiles | 9.28 | 89.69 | 1.03 | 97 |
| Steel & Basic Metal | 3.45 | 96.55 | | 145 |
| Machinery & Equipment | 8.39 | 91.61 | | 286 |
| Paper & Paper Product | 3.70 | 96.30 | | 27 |
| Transport & Motor Vehicle | 26.19 | 73.81 | | 42 |
| Tobacco | | 100 | | 10 |
| Computer | | 100 | | 20 |
| All Industry | 7.97 | 91.87 | 0.16 | 627 |

*Source:* Primary survey 2019-20

While 8% employees reported about the fatal and non-fatal accidents over 1% were unaware of it. The particular cases of Kirloskar, Atul Industries, Sameer Textiles and Shah Paper Mill revealed that the companies made an effort to curb the accidents by means of raising workers' awareness and emphasizing on duties of workers. But in case of compensation and support for the employees the companies depended largely on ESI and government provisions. The overall conversation with the managers indicated that the onus of accidents often went to the workers as they were often found to be careless about using safety gears and taking safety measures during the production process. Thus it was more of laxity or carelessness from the workers' side and not from the management. As a result, it was often difficult for the workers to fight for compensation, particularly for the minor or nonfatal accidents, the survey revealed.

## 5. Health Status of Workers

Workers in the manufacturing sector suffered more from various diseases compared to those engaged in other sectors, as revealed from the NSSO 2018 unit level data on health and morbidity. For both Gujarat and nation as a whole between 5 to 6 percent suffered from ailments and chronic diseases. However, the primary survey revealed a much higher incidence. Prevalence of acute ailments was close to 14 per cent of the respondents while over nine per cent were reported to suffer from chronic conditions (Table 6). While the NSSO 2018 data show that the cardio-vascular and respiratory disorders, followed by musculoskeletal, diabetes and metabolic disorders and psychiatric and neurological diseases were the major concerns for those engaged in the manufacturing activities (Table 7), diseases such as joint pains, tumors, respiratory disorders, deafness, eye ailments and skin diseases were observed amongst the workers during the field work. The DISH data revealed that in Gujarat, major ailments were silicosis, illness and disabilities caused by gaseous explosions and noise. Since there have been no medical tests conducted as part of the primary survey, it is not possible to identify the diseases such as silicosis and other diseases caused by gaseous explosions and noise. But the symptoms of silicosis were observed among at least three workers during the survey.

Illness and accidents have a bearing on loss of wages due to loss of labour days. Those who reported episodes of accidents have also reported the expenditure and loss of wages incurred as a result of accidents/illness. Out of pocket expenditure incurred for treatment also posed a burden to the workers' households. It was found that those who suffered from loss of labour days due to illness/accidents in the textile industry suffered from an economic burden of at least Rs. 3917/- per episode. The combined figure of loss of income and cost of treatment or out of pocket expenditure

was found to be ranging between Rs. 3917/- and Rs. 28,300/- per episode. The figures varied across industry groups depending on the support and benevolence of the employer and the availability of ESI hospital for the workers' treatment.

**Table 6: Proportion of Ailing Persons (PAP) and Persons Suffering from Chronic Diseases among the Workers in each Industry Category (percent)**

| Industry Category | PAP | Chronic conditions | N |
|---|---|---|---|
| Textiles | 21 | 15 | 97 |
| Steel & Basic Metal | 26 | 18 | 145 |
| Machinery & Equipment | 28 | 16 | 286 |
| Paper & Paper Product | 3 | 3 | 27 |
| Transport & Motor Vehicle | 6 | 3 | 42 |
| Tobacco | 2 | 3 | 10 |
| Computer | 0 | 1 | 20 |
| Overall | 86 | 59 | 627 |
| | 13.72% | 9.41% | 100% |

*Source:* Primary survey 2019-20

**Table 7: Major Ailments among Workers in the Manufacturing Sector (Percent)**

| Type of ailment | Gujarat | India |
|---|---|---|
| Fever (Includes malaria, typhoid and fevers of unknown origin, all specific fevers that do not have a confirmed diagnosis) | 15.25 | 22.83 |
| Diabetes and metabolic disorders | 7 | 7.88 |
| Psychiatric and neurological | 5.47 | 5.37 |
| Cardio vascular and respiratory | 40.4 | 24.30 |
| Musculo-skeletal | 16.6 | 11.27 |

*Source:* NSSO 2018 Unit Level data

## 6. Working Conditions/ Quality of Work

Working conditions and work quality are indicated by hours of work, wages received, job-stress-related information, perception of workers about accidents and injuries and their satisfaction with the current job. It is important to note that at least 39 per cent of workers perceived their job to be stressful (Table 8). Stress emerges from various factors including the physical work-environment, job security/insecurity and various decision-making circumstances. At least 44 per cent of the respondents reportedly suffered from environmental stress caused by noise/dust/smell/vibrations and at least 88 per cent of those who reported environmental stress at work-space also reported that the exposure to the environmental stressor was very high.

The occupation-related stress also emerges from the fact that the tasks often required speedy work/ crucial decision-making that necessitated no-mistake and physical vigour (Table 8). It is important to note here that when asked about tasks involving mental stress no worker reported any kind of mental stress involved in the process of their occupational activities. While the different kind of stressors contribute to worsening the working conditions, the use of safety gear further adds to the discomfort of the workers. Field work in several estates has revealed that the workers are often provided with the gloves, helmets, boots, gowns, spectacles and other safety gears, but it is

very difficult for them to continue working for long hours wearing the gear made of rubber, plastic or other synthetic materials. Although workers are aware of the benefits of these gears, they often do not find it convenient and comfortable to use when they are on-duty.

**Table 8: Percentage of Workers Experiencing Job-stress**

| Industry Type | Experiencing Stress | Environmental Stress* | Requires speedy work/ decision-making/no mistake/physical vigour+ | Perception of job security@ |
|---|---|---|---|---|
| Textiles | 46.4 | 48.5 | 97 | 73.20 |
| Steel & Basic Metal | 35.2 | 69 | 91 | 61.38 |
| Machinery & Equipment | 27.6 | 44.1 | 87 | 67.13 |
| Paper & Paper Product | 48.1 | 48.1 | 96 | 74.07 |
| Transport & Motor Vehicle | 23.8 | 38.1 | 100 | 76.19 |
| Tobacco | 50 | 60.0 | 100 | 50 |
| Computer | 25 | 0 | 95 | 90 |
| All Industry | 39.17 | 44.2* | 91 | 68.10 |
| Around 39 % workers experience stress for some reason or the other. | | | | |

*Notes:* *Percentage of workers suffering from any environmental stressor including noise, dust, smell and vibration. *Environmental stress is substantial

+Percentage of workers performing tasks that require speedy work/ crucial decision-making/no-mistake/ physical vigour

@Percentage of workers reporting their perception of job security

*Source:* Primary survey: 2019-20

Case studies of various factories (notably Kirloskar, Atul machineries industries, Manilal & Sons., Sameer Textiles, Dhiraj Metals, Meera Metal industry, Sujko, Motherson automobiles, JBM auto system, Shyam textiles, Kajal textiles, Ashoka textiles, and Shah paper mill) revealed that despite the insistence from the management, the workers were reluctant in using the safety gears all the time when they were on-duty. Even companies such as Kirloskar, Aarvee demins exports and Ashoka textiles, which are engaged in exports, were found to have concern for the workers' behaviour and non-willingness to adopt safety gears. Nonetheless, the minor injuries at factories are often taken seriously neither by the workers nor by the management. For relatively large factories like Kirloskar, Sujko, Kajal textiles, Manilal and Sons, Sameer textiles and Meera metal industries, first-aid kits were available at the shop-floor for minor injuries. Kirloskar even had a dispensary inside the workshop and vehicles dedicated for transport of the ill/injured workers to the hospital. But the probability of meeting with bigger accidents without the use of safety gears is often undermined by the workers. Despite being aware of the benefits of the safety gears the workers were reluctant mainly because of the discomfort of wearing them given the tropical and extreme hot and humid weather in Ahmedabad. User-friendly devices and safety gear particularly suited to the climatic and environmental conditions in Ahmedabad could drive the workers to use gears to a large extent.

Different scenarios were developed for the respondents to imagine the injury or accident free tasks in other industries and they were asked how they perceive the possibilities of accidents and injuries in their present job compared to others available to them. A large number of them think that the possibility of injury/accidents and even the occupation related illnesses were low in their present job. Similarly, many of them believe that despite being in temporary or casual employment, the owner/management will not terminate them all of a sudden and thus feel secure in the present job

(Table 9). However, the perception of job security also depends on education level and the migrant status of the workers. It is observed that at least 32 per cent of workers migrated from the rural areas in other districts of Gujarat to Ahmedabad industrial cluster whereas 68 per cent came from outside Gujarat state (Table 10). No worker was found to be completed more than the 10th standard and only 29 workers (close to 5%) were found to have ITI certification with regard to expertise in some skill.

**Table 9: Percentage of Workers Self-reporting the Extent of Exposure to Stressors**

| | Environmental Stressors* | | | | Job related injury illness+ | | | |
|---|---|---|---|---|---|---|---|---|
| **Industry Type** | **Low** | **Medium** | **High** | **Total** | **Low** | **Moderate** | **High** | **Total** |
| Textiles | 8.70 | 13.04 | 78.26 | 46 | 92.78 | 6.19 | 1.03 | 97 |
| Steel & Basic Metal | 1.43 | 12.86 | 85.71 | 70 | 91.72 | 2.07 | 6.21 | 145 |
| Machinery & Equipment | 5.65 | 2.42 | 91.94 | 124 | 95.80 | 1.40 | 2.80 | 286 |
| Paper & Paper Product | - | - | 13.00 | 13 | 96.30 | 3.70 | | 27 |
| Transport & Motor Vehicle | 12.50 | - | 87.50 | 16 | 90.48 | 9.52 | | 42 |
| Tobacco | - | - | 100.00 | 6 | 100 | | | 10 |
| All Industry | 5.09 | 6.55 | 88.36 | 275 | 100 | | | 20 |
| | | | | | 94.26 | 2.87 | 2.87 | 627 |

*Notes:* *Extent of exposure to Environmental stressors

+Perception of experiencing job-related injury/illness in present job in comparison with any other job the worker can take up

*Source:* Primary survey, 2019-20

**Table 10: Migration Status by Type of Industry (Percent) and Wages Received**

| **Industry Type** | **From within Ahmedabad** | **Migration From other villages in Gujarat** | **Migration From Out Side Gujarat** | **Overall migrants** | **Average daily hours of work** | **Average daily wages (Rs)** |
|---|---|---|---|---|---|---|
| Textiles | 26 | 19 | 81 | 74 | 11.9 | 393.20 |
| Steel & Basic Metal | 14 | 25 | 75 | 86 | 11.0 | 359.79 |
| Machinery & Equipment | 30 | 46 | 54 | 70 | 9.8 | 378.30 |
| Paper & Paper Product | 37 | 29 | 71 | 63 | 9.6 | 400.30 |
| Transport & Motor Vehicle | 17 | 3 | 97 | 83 | 8.5 | 434.57 |
| Tobacco | 100 | | | | 8.6 | 283.33 |
| Computer | 60 | 38 | 63 | 40 | 10.5 | 590.00 |
| All Industry | 27 | 32 | 68 | 73 | 10.6 | 386.28 |

*Source:* Primary survey: 2019-20

While daily hours of work varied between 6 and 12 hours, the wages varied from one industry to other depending on the terms of employment and nature of tasks. Only 5 per cent of total workers reported their working hours to be irregular. (Annexure Table 3).

## 7. Unions and Employer-employee Relationship

It has been observed that the Trade Unions are more vocal on conventional issues like privatization, FDI, etc., rather than issues related to working conditions, occupational safety and health. For

example in 2020, 202 dangerous occurrences happened in Gujarat with/without injuries along with 212 fatal injuries and 560 non-fatal injuries as reported by DGFASLI (2020). In the same year, six workers in Vadodara (Bundy India Ltd.) suffered from Noise Induced Hearing Loss (NIHL), five workers of Grasim Industries Ltd were diagnosed with silicosis caused by exposure to silica dust, five more workers in the same unit located at Panchmahal were diagnosed with NIHL, 103 workers at Yashavi Rashayan Pvt. Ltd in Bharuch were affected by harmful chemical gas explosions, four workers at Vishal Fabrics in Ahmedabad were affected by exposure to harmful gases and two workers at Haji Wash in Ahmedabad were affected by exposure to harmful unknown gases.

The fieldwork in Ahmedabad revealed that 22 factories in the sample reported accidents affecting 50 workers multiple times in a year (Annexure Table 4). But, Occupational Safety and Health (OSH) issues have not received adequate attention from the trade unions. The left oriented unions are focused more on the issues at national level whereas the labour law reforms are taking place at the regional level. While the wages, working hours and other benefits still assume importance in the Ahmedabad cluster, losing focus on the working conditions and quality of work might be deterring workers to register as members of the unions. It was observed that except one worker in a textile mill, no other respondent was a member of any union/labour association. Furthermore, the workers depend on the benevolence of the employers to a large extent. While they received multiple benefits from the employers, the most common benefit was the bonus in Diwali (Table 11).

## 8. Governance related to Health of Workers

The National Policy on Safety, Health and Environment at Workplace (NPSHEW), 2009 is formulated with a purpose of establishing a preventive safety and health culture in the country through elimination of the incidents of work related injuries, diseases, fatalities, disasters and to enhance the well-being of employees in all the sectors of economic activity in the country. The salient features of the policy include the recognition of safe and healthy working environment as a fundamental human right; enhancement of well-being of employees and the society at large by eliminating work-related injuries, diseases, etc.; and, the reduction of incidence of work-related injuries and diseases.

Given these objectives, the Government of India has enacted the statutes relating to Occupational Safety and Health (OSH) at workplaces. At present, comprehensive safety and health statutes for regulating OSH at workplaces mainly exist in respect of the four sectors namely, manufacturing, mining, ports, and construction sectors. There are four main legislations that cover OSH at workplace: (i) The Factories Act, 1948 , covering factories wherein the enforcement of safety at workplace is by the Chief Inspector of Factories in the respective states, (ii) The Mines Act, 1952 and Mines Rules, 1955 for mining industry where the enforcement is by the Directorate General of Mines Safety (DGMS) under Ministry of Labour & Employment , Government of India, (iii) The Dock Workers (Safety, Health and Welfare) Act, 1986 followed by notification of the Dock Workers (Safety, Health and Welfare) Regulations, 1990 dealing with the major ports of India and the enforcement is by the Directorate General of Factory Advice Service & Labour Institutes (DGFASLI), under Ministry of Labour & Employment , Government of India, and (iv) The Building & Other Construction Workers (Regulations of Employment and Conditions of Service) Act, 1996, covering construction workers at construction sites wherein the enforcement is by the Directorate General Labour Welfare in the central sphere and by the Labour Commissioners/ Factory Inspectorates in the States/UTs.

Recently the Occupational Safety, Health and Working Conditions Code, 2020 (OSHWC) was

**Table 11: Number of respondents receiving benefits from the employers**

| Industry Type | (Multiple Answers) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bonus | Reimbursement of Holiday Days | Provides medicines for the disease | Family tour in the every year | Motor Cycle from Company | Mobile Recharge cost from the Company | Expenses for the study of children | Tea, Breakfast and Lunch From the Company | Residence Facility From Company | Give the Cloth | Advance Salary Facility | LPG Facility | Transportation Facility | No Benefit |
| Textiles | 94 | 54 | 15 | 1 | | | | 2 | 2 | 3 | 1 | | | 6 |
| Steel & Basic Metal | 78 | 56 | 2 | 1 | | | | 8 | 10 | | 1 | | | 6 |
| Machinery & Equipment | 90 | 48 | 5 | 3 | 0 | 0 | 0 | 19 | 0 | 0 | 1 | | 7 | 7 |
| Paper & Paper Product | 85 | 41 | 7 | | | | | 30 | 30 | | | 15 | | |
| Transport & Motor Vehicle | 100 | 38 | 12 | | | | | 19 | | 10 | | | | |
| Tobacco | 100 | 100 | | | | | | | | | | | 20 | |
| Computer | 100 | 45 | 5 | | | | | 20 | | 10 | | 5 | | |

*Source:* Primary survey: 2019-20

introduced in Lok Sabha by the Minister of State for Labour and Employment. The Code subsumes 633 provisions of 13 major labour laws into one single Code with 143 provisions. The Code applies on factories having 20 or more workers and the manufacturing process is being carried on with the aid of power or 40 or more workers and the manufacturing process is being carried on without the aid of power. Hence, it lacks in addressing the OSH concerns for workers engaged in very small units irrespective of the use of power in the production/manufacturing process. While the OSHWC 2020 has been more inclusive and defined it has diluted the responsibility of employers in ensuring the employees' wellbeing. The code mainly aims at lessening the burden of the employers. The workplace should be kept free from hazards that cause or are likely to cause injury or occupational disease to the employees. Employers are required to conduct free annual health check-up for their employees. Employers are required to ensure the disposal of hazardous and toxic waste including e-waste. Issuance of appointment letter to every employee on their appointment in the establishment, entitlement to receive overtime amount at the rate of twice the wages are also mentioned. Employers are required to provide facilities such as ventilation, humidification, potable drinking water, adequate lighting, crèche, washing facilities, bathing places, locker rooms etc. The Code makes mandatory provisions for the employers to provide a safe working environment and to cover the risk of unfortunate incidents arising in the course of employment. However, the Code bars civil courts from hearing matters under its purview. During the onset of COVID-19 pandemic and thereafter, there has been some visible weakening in labour standards due to the dilution of the protective legislative frameworks (Chaudhary and Remesh, 2021). For instance, following the examples of Government of Uttar Pradesh, many other governments including Rajasthan, Madhya Pradesh and Gujarat nullified all labour rights for a period of three years. Even the working hours were proposed to be enhanced from 8 to 12 hours in a day.

The survey findings reiterate that the OSH in the manufacturing sector suffers from shortages of infrastructure and human resources. The data available with DGFASLI (2020) also show that only 37 industrial safety and health officers are appointed presently in Gujarat, whereas the number of sanctioned posts for the same is 65. The shortage of humanpower of inspectors is visible against each post at each level of the governance. However, numbers of registered factories and working factories are increasing every year. In 2020, the number of registered factories was 44,392, number of working factories was 36,726, number of workers in the working factories amounted to 49 lakh, number of women workers employed was 1.4 lakh, number of hazardous factories was 11,352 and number of workers employed in hazardous factories was 3.6 lakh. In order to meet the increasing need of medical attention the infrastructure and humanpower should be enhanced and the legal/judicial processes expedited. In 2020, 563 medical officers (on full-time basis) and 3364 medical officers (on part-time basis) were required by the registered factories, but there were only 408 medical officers on full time basis and 2423 similar officers on part-time basis available.

The delayed legal process can be equated to the denial of justice to the workers (victims). For instance, with regard to safety at workplace, the number of prosecutions pending from 2019 was 1652 and the number of prosecutions launched during 2020 was 304. But the number of prosecutions decided was only 114 (DGFASLI, 2020). Similarly, with regard to the hazardous process/dangerous operations the number of prosecutions carried forward from 2019 to 2020 was 95; 17 new prosecutions were launched, but the number of prosecutions decided in 2020 was zero. As far as prosecutions in the matter of health and welfare are concerned, cases carried forward from 2019 to 2020 numbered 690, there were 14 new cases, yet number of cases decided was only six. This indicates serious lacunae in the available processes.

In line with the global concern for occupational safety and health, India has also ratified a number of conventions and protocols regarding the same. At the global level, the World Health Organisation (WHO) and the International Labour Organization (ILO) are the two important agencies working in the areas of OSH among the member nations. The WHO defines OSH as a multidisciplinary activity which involves: (1) protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions, hazardous to health and safety at work; (2) the development and promotion of healthy and safe work, work environments and work organizations; (3) enhancement of physical, mental and social well-being of workers and support for the development and maintenance of their working capacity as well as professional and social development at work; (4) enabling workers to conduct socially and economically productive lives and to contribute positively to sustainable development. In addition to hazards at work, other factors such as place of living of the workers and the type of amenities impact their health directly, too. These have been incorporated in the ILO's decent work concept, which integrates increased opportunities to work and increased rights at workplace, social protection and improved well-being and working conditions. Countries that adopt this framework would ensure that it is made statutory and enforced appropriately. There are 18 ILO conventions regarding workers' health and occupational safety, out of which India has ratified fully only six and partially only two so far.

## 9. Concluding Remarks

It is evident that Gujarat witnessed a dismal status in OSH compared to other major states (highly industrialized or not) in India. In line with the larger macro scenario of poor OSH status, the study depicts abysmal picture of health and safety at workplaces inside the units of the manufacturing sector in Ahmedabad industrial cluster. While various units from the industrial estates of Ahmedabad have been selected for the purpose of study, no significant variation was observed in terms of working conditions, safety and awareness of the same among the workers. Overall the manufacturing sector suffers from safety and health problem, as many workers think that the present job is as risky as the other factories in the same industry. Despite being aware of the benefits of safety gears the workers were reluctant to use the same for long hours owing to the discomfort associated with wearing them. This implies that advanced and modern gear, keeping the tropical hot and humid climate of Ahmedabad in mind must be devised, so that the workers can adopt them effectively.

Wage compensation exists in some way. Education level and status of migration seem to have a bearing on the job security and quality of work as perceived by the workers. While many workers were found to be illiterate and completed $10^{th}$, only a few had completed $12^{th}$ and possessed an ITI certificate or diploma. The acute shortage of human resource and infrastructure combined with the lack of political will particularly from the unions/labour organizations have further jeopardized the status of safety and health at the workplaces in the manufacturing units. Under such circumstances one can expect the havoc that impact of COVID-19 induced lockdown would have unleashed on the workers who were unskilled/semi-skilled, less educated and had migrated from rural areas of Gujarat or outside. Along with the emphasis on OSH at the factories the enhancement of skill and education among the labour force may be the way forward.

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thank officials at various government departments and offices including the MSME, DISH, DIC, and labour and employment for their cooperation in sharing the government data. I thank Mr. Saddam for helping me in organizing visits to the large firms. Last but not the least, I thank all the respondents who took part in this study. In the same note I also thank Prof. Ravi Srivastava, Dr. Dipanwita Chakraborty, Prof. Niti Mehta and the editorial team of SPIESR for their invaluable inputs in the improvement of this paper. The usual disclaimer holds.

## About the author

**Dr. Amrita Ghatak**, Ph.D. in Economics, is currently an Assistant Professor at the Gujarat Institute of Development Research, Ahmedabad. Her research works focus on the human development processes encompassing health, labour, environment and women. She offers lectures on research methodology - quantitative and qualitative, behavioural economics and perspectives in labour research.

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## Annexures

**Table 1: Yearly Statement of Fatal and Non-fatal Injuries and Dangerous Occurrences Industry-wise 2017 (in number)**

| INDUSTRY type | Rest of Gujarat | | | Ahmedabad | | |
|---|---|---|---|---|---|---|
| | Dangerous occurrences with/ without injuries | F | NF | Dangerous occurrences with/ without injuries | F | NF |
| Manufacture of tobacco products | 0 | 0 | 0 | 0 | 0 | 0 |
| Manufacture of textiles | 130 | 46 | 331 | 48 | 4 | 43 |
| Manufacture of paper and paper products | 22 | 13 | 26 | 3 | 0 | 3 |
| Manufacture of basic metals | 14 | 23 | 70 | 14 | 3 | 12 |
| Manufacture of fabricated metal products, except machinery and equipment | 19 | 9 | 72 | 18 | 0 | 18 |
| Manufacture of computer, electronic and optical products | 0 | 1 | 8 | 0 | 0 | 0 |
| Manufacture of electrical equipment | 1 | 1 | 21 | 0 | 0 | 0 |
| Manufacture of machinery and equipment n.e.c. | 51 | 9 | 80 | 26 | 1 | 25 |
| Manufacture of motor vehicles, trailers and semi-trailers | 8 | 2 | 9 | 8 | 1 | 7 |
| Manufacture of other transport equipment | 0 | 1 | 1 | 0 | 0 | 0 |

*Note:* F implies Fatal; NF implies Non-Fatal

**Table 2: Yearly Statement of Fatal and Non-fatal Injuries and Dangerous Occurrences Cause-wise 2017**

| CAUSATION | Rest of Gujarat | | | AHMEDABAD | | |
|---|---|---|---|---|---|---|
| | No. of Dangerous occurrences with/ without injuries | F | NF | No. of Dangerous occurrences with/ without injuries | F | NF |
| Prime Movers | 2 | 2 | 0 | 2 | 0 | 2 |
| Machinery moved by mechanical power | 0 | 0 | 0 | 18 | 2 | 16 |
| Machinery not moved by mechanical power | 0 | 0 | 0 | 1 | 0 | 1 |
| Transport | 10 | 4 | 6 | 9 | 0 | 9 |
| Electricity | 2 | 1 | 1 | 2 | 1 | 1 |
| Explosion | 6 | 0 | 6 | 0 | 0 | 0 |
| Fire | 5 | 0 | 5 | 5 | 1 | 2 |
| Gassing | 37 | 10 | 25 | 1 | 1 | 0 |
| Molten and other hot or Corrosive Substances | 0 | 0 | 0 | 2 | 3 | 0 |
| Hand tools | 0 | 0 | 0 | 18 | 0 | 18 |
| Struck by falling bodies | 0 | 0 | 0 | 45 | 4 | 41 |

| CAUSATION | Rest of Gujarat | | | AHMEDABAD | | |
|---|---|---|---|---|---|---|
| | No. of Dangerous occurrences with/ without injuries | F | NF | No. of Dangerous occurrences with/ without injuries | F | NF |
| Persons falling | 0 | 0 | 0 | 24 | 7 | 18 |
| Stepping on or striking against objects | 0 | 0 | 0 | 35 | 2 | 33 |
| Handling goods | 0 | 0 | 0 | 33 | 1 | 32 |
| Others | 0 | 0 | 0 | 23 | 6 | 17 |
| TOTAL | 62 | 17 | 43 | 218 | 28 | 190 |

*Note:* F implies Fatal; NF implies Non-Fatal

**Table 3: Daily Wage by Type of Employment and Industry Type (in Rs)**

| Industry Type | Employment | Mean | Minimum | Maximum | N | Median |
|---|---|---|---|---|---|---|
| Textiles | Permanent | 403.01 | 233.00 | 1000.00 | 51 | 400.00 |
| | Temporary | 382.32 | 217.00 | 600.00 | 46 | 395.00 |
| | Total | 393.20 | 217.00 | 1000.00 | 97 | 400.00 |
| Steel & Basic Metal | Permanent | 371.63 | 267.00 | 800.00 | 80 | 333.33 |
| | Temporary | 345.23 | 267.00 | 500.00 | 65 | 333.33 |
| | Total | 359.79 | 267.00 | 800.00 | 145 | 333.33 |
| Machinery & Equipment | Permanent | 389.73 | 212.00 | 1667.00 | 179 | 333.33 |
| | Temporary | 359.17 | 167.00 | 600.00 | 107 | 333.33 |
| | Total | 378.30 | 167.00 | 1667.00 | 286 | 333.33 |
| Paper & Paper Product | Permanent | 406.73 | 208.00 | 600.00 | 21 | 400.00 |
| | Temporary | 377.78 | 333.00 | 400.00 | 6 | 400.00 |
| | Total | 400.30 | 208.00 | 600.00 | 27 | 400.00 |
| Transport & Motor Vehicle | Permanent | 425.78 | 283.00 | 833.00 | 15 | 400.00 |
| | Temporary | 439.46 | 300.00 | 533.00 | 27 | 433.33 |
| | Total | 434.57 | 283.00 | 833.00 | 42 | 400.00 |
| Tobacco | Permanent | 283.33 | 267.00 | 300.00 | 10 | 283.33 |
| | Total | 283.33 | 267.00 | 300.00 | 10 | 283.33 |
| Computer | Permanent | 688.89 | 467.00 | 1067.00 | 12 | 666.67 |
| | Temporary | 441.67 | 333.00 | 833.00 | 8 | 400.00 |
| | Total | 590.00 | 333.00 | 1067.00 | 20 | 583.33 |
| Total | Permanent | 396.94 | 208.00 | 1667.00 | 368 | 343.33 |
| | Temporary | 371.13 | 167.00 | 833.00 | 259 | 346.67 |
| | Total | 386.28 | 167.00 | 1667.00 | 627 | 346.67 |

*Source:* Primary survey: 2019-20

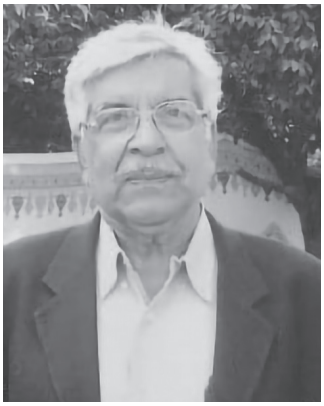
**Table 4: Details of Accidents in a year Reported in the Survey**

| Sl No | Industry type | Company Name | Total No. Of Accidents | Total no. of respondents met with accidents | Avg. Accidents in a year |
|---|---|---|---|---|---|
| 1 | Machinery & Equipment | Atul Machineries | 5 | 3 | 1.7 |
| 2 | Machinery & Equipment | Manilal & Sons. | 3 | 1 | 3.0 |
| 3 | Machinery & Equipment | Mestro Pvt. Ltd. | 1 | 4 | 1.0 |
| 4 | Machinery & Equipment | Paioniar Eng. | 7 | 2 | 3.5 |
| 5 | Machinery & Equipment | Sun Stary fab. | 2 | 1 | 2.0 |
| 6 | Textiles | Sameer Textiles | 13 | 2 | 6.5 |
| 7 | Steel & Basic Metal | Dhiraj Metals | 4 | 1 | 4.0 |
| 8 | Steel & Basic Metal | Meera Metal Indu. | 4 | 2 | 3.5 |
| 9 | Steel & Basic Metal | Sujko | 6 | 2 | 3.0 |
| 10 | Paper & Paper Product | Shah Paper Mill | 1 | 1 | 1.0 |
| 11 | Machinery & Equipment | EDGB Eng. | 3 | 2 | 1.5 |
| 12 | Machinery & Equipment | Om Eng. | 2 | 1 | 2.0 |
| 13 | Machinery & Equipment | SVA Eng. | 5 | 3 | 1.7 |
| 14 | Textiles | Aahoka Tex. | 4 | 2 | 2.0 |
| 15 | Textiles | Aarvee denims Exports | 1 | 1 | 1.0 |
| 16 | Textiles | Kajal Tex. | 4 | 2 | 3.5 |
| 17 | Textiles | Shyam carpet Textile | 1 | 1 | 1.0 |
| 18 | Textiles | Svayam Poliplast Textile | 1 | 1 | 1.0 |
| 19 | Transport & Motor Vehicle | Henon Automatic System | 9 | 4 | 2.3 |
| 20 | Transport & Motor Vehicle | JBM Auto System | 6 | 4 | 1.5 |
| 21 | Transport & Motor Vehicle | Motherson Auto | 3 | 3 | 1.0 |
| 22 | Machinery & Equipment | Kirloskar | 17 | 7 | 2.4 |

*Source:* Primary survey: 2019-20

# YOGINDER K. ALAGH AS I KNEW

ATUL SARMA*



Yoginder K. Alagh

Yoginder K. Alagh's death on December 6, 2022, deprived the country of a rare species of an economist who could blend economic theory with ground realities, and who could play multiple roles as academic, institution builder, educationist, policy maker, parliamentarian and columnist, each with a passion and commitment.

It was the end 1970 when my fellowship at Gokhale Institute of Politics and Economics, Pune was just about to end. To my pleasant surprise, I received a letter from Prof. D.T. Lakdawala stating that they established Sardar Patel Institute of Economic (SPIESR) at Ahmedabad and that if I was interested in a project-based position, I should send my CV and come for an interview. I went for the interview. Profs. Lakdawala and Alagh interviewed me and offered a position of Junior Economist in a Planning Commission funded project on Regional Variations in Industrial Development under direct supervision of Prof. Alagh. I joined in December 1970 and shared the office space with Prof. Alagh and thus began my association-grown into a very close one spreading over long five decades. Prof. S.R. Hashim who was then at MS University, Baroda was invited to help us in the project. It was truly a great learning experience as also an opportunity to know Dr. Alagh closely in his different facets. Later the study was published as a book under the same title with Lakdawala, Alagh and Sarma as authors.

The Institute started functioning a couple of years ago in a rented building called Hari Krupa in Navrangpura, Ahmedabad. Prof. Alagh who was on the faculty of IIM, Calcutta since his

*Distinguished Professor, Council for Social Development, New Delhi, former Chairman, OKDISCD, Guwahati, former Member, Thirteenth Finance Commission, former ICSSR National Fellow, former Vice-Chancellor, Rajiv Gandhi University, former Head and Professor of Economics, Indian Statistical Institute, Delhi Centre.

return after doing his PH.D from Pennsylvania University, USA joined as Deputy Director while Prof. Lakdawala was Director. K.K. Subramanian, R.J. Mody, T.S Papola, S.P Gupta, R. Radhakrishna, P.V. George and a few others from different parts of the country joined as faculty and created a truly cosmopolitan ambience at the newly started Institute. After some time Prof Lakdawala went back to Bombay University and Prof. Alagh took over as Director. Thus began his role as an Institute builder combined with academic leadership.

His contributions ranged from macroeconomics, industry studies, poverty studies, and agricultural economics to rural development. Dr Alagh published several books, latest being Economic Policy in a Liberalising Economy: Indian Reform in this Century (2018) and The Future of Indian Agriculture (2013) and contributed numerous articles in reputed journals in India and abroad.

Many seminars and workshops, were held; research projects were conducted; a number of young scholars like Rakesh Basant, Jeemol Unni, Dinesh Awasti, Amita Shah, Tulsidhar, Late Surjit Singh and several others joined as Ph.D. scholars - all of them went a long way in their respective careers and brought glory to the Institute. All these made the Institute a really vibrant academic place. Dr. Alagh contributed immensely in shaping SPIESR into one of the country's reputed research Institute in a short period.

Two activities initiated by him made a lasting academic impact. One was summer course for college teachers and researchers leading to the preparation of their doctoral thesis and the other was launching of a research journal, Anvesak, for dissemination of largely Institute's research studies. The former indeed helped many college teachers of the state to obtain Ph.D. degree. Equally important was the orientation of the Institute's research to the policy issues of the state. The first state level Input-Output table for Gujarat prepared by Alagh and SP Kashyap was used for the state's planning.

Among his many contributions to India's development history, his works on Sardar Sarovar dam is highly significant. As executive vice-chairman of the Narmada Planning Group (NPG) set up by the Gujarat government in late 1970s, Dr. Alagh led studies covering every possible aspect that could have any positive or negative impacts. Dr. S.R. Hashim who joined NPG gave a helping hand in formulation and execution of those studies. Some of us from SPIESR were also engaged as consultants to play a role. All those studies were monitored, evaluated and enriched with critical feedbacks of the World Bank. That eventually the World Bank withdrew its support for the project on environmental and rehabilitation grounds is another story. Nevertheless, those studies formed the foundation for later implementation of the project. Dr. Alagh's commitment to the project remained unfaltering irrespective of regime changes. As S. Sambrani rightly put: "If the Narmada Project today has become the life line of Gujarat, a good part of the credit must go to this Great Beagle of Indian development economist." (IE dt. Dec.9)

Dr. Alagh took lien from SPIESR to join the Planning Commission as Adviser, Perspective Planning Division. He with Prof. S. Chakravarty, then Member, was instrumental in making an innovative exercise: to assess growth implications of income redistribution. The exercise provided valuable insights. A Planning Commission Task Force (1979) under Dr Alagh's chair constructed a poverty line for the first time separately for rural and urban areas based on nutritional norms of 2400 and 2100 respectively. He became a Member of Planning Commission when district wise agro –climatic zones were adopted for agricultural planning.

He was off and on from SPIESR but never quit the Institute. He continued to steer the Institute as Vice-Chairman of its Board of Management till his death.

Over the years Dr. Alagh played multiple roles: academician, policy makers, educationist, Parliamentarian and columnist. In each of them he made impactful contribution.

Just to illustrate, as chairman of BICP, Dr. Alagh initiated price decontrols in steel, cement and aluminium signalling a step towards economic reform. As chairman, Agricultural Price Commission (APC) now called Commission for agricultural Costs and Prices, he established an econometric cell to recommend minimum support prices for different crops. Its reports were published for encouraging public debate.

As chairman of a high-powered committee (2000), he provided the base for setting up of cooperative businesses as 'producer companies' which could function under the more liberal Companies Act in contrast to the restrictive state cooperative laws.

Dr. Alagh's role as a policy maker culminated in his becoming a Union Minister of State with independent *charge* of Power, Science, & Technology and Planning and Programme Implementation during the United Front government (1996-98). He set up the Technology Development Board "to promote development and commercialization of indigenous technology and adaptation of imported technology for wider application". Along with illustrious people like APJ Abdul Kalam, RA Mashelkar etc. I was also made its member.

As Vice-Chancellor of JNU and Chairperson of Institute of Rural Management, Anand, Dr. Alagh created a congenial and vibrant academic environment.

The short point is whatever assignment he took up, he carried out with a passion and commitment and left his enduring imprint.

He had a close professional association with a number of international agencies such as FAO of the UN, UNESCO, UNDP and World Institute of Development Economics (WIDER).

His wide experiences in policy making in India and professional international involvements abroad got expression in his column in the Indian Express over long years.

Above all, Dr. Alagh was a great human being, kind and compassionate, warm and generous, supportive and caring of young colleagues and associates. He was a liberal democrat to the core. He listened patiently even to the views opposite to his to understand the root of their differences. His status and authority never stood in the way of maintaining warm. Human relations. He had the courage of conviction as reflected in several of his activities and involvement. With him around there could be no dull moment –such was his magnificent personality.

Dr. Alagh had a wonderful family. His parents, Rakshabhabi, Tavshi and Munish were all kind, warm and affectionate. In his highly busy life they were a great support and strength. I was fortunate to be one of the beneficiaries of their munificence.

Dr. Alagh's contributions as an academician, policy makers, educationist and columnist would keep him alive as also remain a source of inspiration for generations to come. As for myself, I would treasure his kindness, love and affection for me along with countless memories and interactions with him till my end.

With these words, I pay my heart full homage to the great man who is no more.

# PROFESSOR YOGINDER K. ALAGH – A REMEMBRANCE

NITI MEHTA*

With a profound sense of grief, we mourn the sad demise of Professor Yoginder K. Alagh on Tuesday, December 6, 2022. A renowned and multi-dimensional Economist, Professor Alagh was an academic administrator and institution builder par excellence who was associated with policy-making at the global level. Professor Alagh was a distinguished scholar, an outstanding academic leader and mentor, a widely referred academician and columnist and above all a warm and affectionate human being. He was a development economist of international eminence who made significant contributions in economically, socially and political-economy relevant areas of enquiry. His contributions in the areas of Indian development planning and policy, regional economics, demand systems and poverty assessment, industrial specialization, agriculture, management of natural resources and irrigation planning, energy systems, India's global positioning and climate impacts are path breaking.

Professor Alagh completed his Master's degree in Economics from University of Rajasthan and doctorate in Economics from the University of Pennsylvania, Philadelphia. He taught Economics at the Universities of Pennsylvania and Rajasthan, Indian Institute of Management, Calcutta, University of Jodhpur, and Swarthmore College. He was appointed Adviser of Perspective Planning, Planning Commission (1974-1980), Chairman of Agricultural Prices Commission, Government of India (1982-1983), Chairman of the Bureau of Industrial Costs and Prices (1983-1987) and Member, Planning Commission (1987-1990). He also served as the Vice Chairperson, State Planning Commission, Gujarat (1990-1992). Professor Alagh was associated with the Sardar Patel Institute of Economic and Social Research (SPIESR), Ahmedabad, since its inception and was Director from Oct.1971 to Feb. 1978 and again from Aug. 1980 to Aug. 1982. He later continued to be associated with SPIESR as Professor Emeritus. He was elected to the Rajya Sabha from Gujarat in November 1996. From 1996 to 1998, he served as a Minister of State (Independent Charge) for Planning, Programme Implementation, Science and Technology and Power for Government of India.

He served as President of Gujarat Economic Association, Member, India Council of Social Science Research and National Sample Survey, President, Indian Econometric Society, and Indian Society of Labour Economics, Member of University Senates at Jodhpur, Sardar Patel University, Ahmedabad University, was Member of the Council, United Nations University and Chairman, Scientific Steering Committee of the International Social Science Programme of UNESCO. He was

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on the governing bodies of numerous academic institutions such as the International Institute of Labour Studies, Geneva, Indian Institute of Management, Calcutta, Institute of Rural Management, Anand, Giri Institute of Development Studies, Lucknow, Institute for Human Development, New Delhi, Institute of Economic Growth, New Delhi and Sardar Patel Institute of Economic and Social Research, Ahmedabad. He was a Chairman / member of a number of official committees at the National and International levels. He was the Founding Distinguished Professor of Planning, CEPT University, Ahmedabad, Vice Chancellor at Jawaharlal Nehru University, Chancellor of Central University of Gujarat and Nagaland University. Under his leadership JNU became one of the top hundred universities in the world with increased non-government funding and faculty recruited from the finest universities around the World.

Professor Alagh leaves behind a rich legacy in the world of economic policymaking. At Ahmedabad his research output and publications have been numerous and well recounted. Notable was his work on regional aspects of Indian industrialization - specifically the paper on 'Interregional Industrial Structure: A Conceptual Frame with a Case Study' (jointly with KK Subrahmaniam and SP Kashyap). He made important contributions in the early days of SPIESR through the corpus of planning models including regional input-output models, spatial economic planning models, consistent forecasting models as well as structural analysis of Gujarat, Punjab and Haryana economies (latter undertaken with GS Bhalla and SP Kashyap). His book on 'Indian Development Planning and Policy' published by the UNU, Helsinki, under WIDER Studies in Development Economics is a must read for students of development planning. Professor Alagh's subsequent work was set in the context of the unease with the models that pertained to closed economies and absence of prices and behaviour and he postulated that newer tools of strategic policy-making were required. As Chairman of the Bureau of Industrial Costs and Prices, Professor Alagh pushed through India's first round of economic reforms, including price decontrol of steel, aluminum, cement and other industries, freed import controls and introduced tariff policy reform. Notable contributions include the negative protection case as measured in the book on 'Capital Goods of High Technological Complexity: Study of the Indian Machine Tool Industry' (jointly with PM Pillai, GVSN Murthy, P. Pathak), written under the aegis of UNCTAD. It was an argument for introducing reforms in clusters of interrelated industries together with tariff policies determined in an optimal manner.

Another area where Professor Alagh's contributions were seminal was on assessing minimum needs and effective consumption demand. In 1979, he led a Planning Commission Task Force, which used nutritional requirements to define the poverty standard and formulate poverty lines for rural and urban areas. His report on what is called the Alagh Poverty Line is still used as a poverty norm - its urban cutoff line is now being recommended as the National Poverty Line. Professor Alagh was a serious commentator and policy-maker for the agriculture sector. While he was Chairman of the Commission for Agricultural Costs and Prices he set up the Econometrics Cell and published reports to elicit debate. Later he chaired an expert group to examine the existing structure of tariff, taxes, credit, and methodological issues in fixing MSPs set up by the Agriculture Ministry to respond to the rapidly changing external environment. Among the notable works in agriculture that formed the basis of his projections at the Planning Commission is his book on 'Performance of Indian Agriculture' comprising district wise study on the level and growth of agricultural output co-authored with GS Bhalla. Other notable works are 'Public Sector Resource Flows to Agriculture' undertaken with Atul Sharma, and a monograph on 'Agricultural Development Planning and Policies', besides weather and crop acreage response/supply studies. As member of the Planning Commission he laid the foundation of Agro-climatic regional planning approach

through the publication titled 'Agro-Climatic Regional Planning: An Overview'. This approach for the first time rethought agricultural planning based on availability of land and water resources rather than on specific crops in a decentralized planning framework. Prof Alagh outlined policy techniques for fragile resource bases, land and water development in problem areas including those having low or variable water availability, poor soils, special areas such as hilly and forested tracts, arid regions, coastal areas and islands particularly degraded areas. Foreseeing the impact of climate change and resource degradation ACRP galvanized the state and Central agricultural sciences community to prepare agro-climatic regional plans that laid down optimal solutions with prioritized strategies. His works on 'Growth and Productivity in Indian Agriculture' and 'Labour Absorption in Indian Agriculture' (jointly with Amit Bhaduri and GS Bhalla) are also notable. Later Professor Alagh chaired the Committee of Experts for legislation to incorporate Cooperatives as Companies. On the recommendations of this panel, the Indian Companies Act, 1956 was amended to provide for "Producer Companies". The producer companies are a hybrid between cooperative societies and private limited companies and enable organization of farmers into collectives to improve their bargaining strength in the market. Long before results of census 2011 alerted researchers about acceleration in urbanization levels and growth of census towns, Professor Alagh outlined the changing scope of agriculture with emphasis on crop diversification and need for markets in his paper 'Agriculture in a Rural Urban Continuum'. In his recent work on 'The Future of Indian Agriculture' (2013) he argued that infrastructure for market towns or census towns cannot be ignored as these were attracting the rural to urban migrants. He envisaged that these sites could generate large-scale productive employment leading to considerable increase in the incomes.

Representing India over successive periods at different international fora Professor Alagh was part of negotiations (notably, Inter-governmental Panel on Climate Change, Global Water Partnership, UN Conference on Environment and Development, as well as the Hague Symposium of the Rio Conference) and contributed richly to adaptation strategies. Professor Alagh wrote extensively on sustainable development goals for India, on water security and the energy sector. 'Sustainable Development: From Concept to Action and Techniques' and 'Land and Man- Essays in sustainable development' are collection of his essays and lectures having the persistent theme of structural analysis to devise investment and policy strategies. These relate to agriculture, rural development and industrialization issues in which environmental concerns dominate. Besides policies for specific kinds of regions, Professor Alagh's work focused on issues arising from industrial pollution, inefficient and unsustainable energy use, industrial waste and the social costs associated with industrialization and urbanization, including the relationship between population growth and the carrying capacity of eco-systems. His more recent thoughts related to examining the interrelationship of global technologies and economic restructuring with land and water based agricultural societies, and that of industrial and trade restructuring with the small artisan communities, in an interdisciplinary framework and in the presence of appropriate institutions.

As an erudite scholar on natural resource management Professor Alagh was nominated as Chairman of the Working Group for Rainfed Regions in the Eleventh Plan that looked for measures for organization of land and water development at agro-climatic sub region levels and suggest economic and financial incentives for sustainable land and water development programmes. He also chaired the Expert Group on Cauvery Dispute constituted by the Prime Minister of India and was Consultant to the Mekong River Commission. However, his most enduring contribution to the field of irrigation planning, environmental management and particularly for the growth of Gujarat was as Executive Vice-chairman of the Narmada Planning Group (NPG) set up by the Government of Gujarat. He was an early champion of the Sardar Sarovar Project and pursued its

planning regardless of political changes. He drove a dedicated multi-disciplinary team of experts to prepare exhaustive plans and analyses encapsulated in the book 'Planning for Prosperity'. The plan produced by the NPG succeeded in establishing a comprehensive data base and underscored a number of in depth studies with a view to obtain meaningful feedback for project planning. For the first time such a comprehensive and systematic effort was made for irrigation project planning in India. Under his leadership a number of studies were initiated pertaining to rehabilitation and relocation, environmental aspects, social-economic studies, agricultural studies and benefit-cost analysis in addition to the technical studies, making it one of the most exhaustively researched project in India.

Apart from academic work, his erudition was complimented by his prolific writing in popular media as well. His column in Indian Express on topics of current national interest offered wisdom disguising deep insights. "the Alagh columns invariably became first-person accounts … because he had such a vast repertoire of experiences of all aspects of economic policy and administration, both in India and on the international stage. His spectrum of expertise was easily the widest among all the columnists…." (Sambrani, IE, 2022).

Prof Alagh's regular contributions to the SPIESR house journal Anvesak enriched it and lent it academic eminence. Professor Alagh held immense affection for the Institute, apparent from the fact that despite the pressure of official engagements and responsibilities, he always found time to lend his support in the form of academic meetings, seminars and conferences, training activities for young researchers as well as faculty development initiatives. He provided guidance to many students and researchers who continue to fondly acknowledge Professor Alagh's role in their career advancement. His commitment and affection for the Sardar Patel Institute will always be recalled by the faculty members and staff. Visitors to Ahmedabad always experienced his gracious hospitality and his enthusiasm for Gujarati fare and diverse cuisines was infectious. He was always patient with junior colleagues and showed an exemplary sense of caring for those he came across. His demise marks the end of an epoch in Indian development studies, and nudges me to recall my own interactions with Professor Alagh over three decades from the day I entered SPIESR as a Masters student at CEPT. I was one of the beneficiaries of his innate humaneness and concern and had the immense fortune of gaining his guidance to write a dissertation in regional planning. The fact that he consented to 'work with me' was the greatest push I could have attained for pursuing a career in research. Since then he never failed to examine my subsequent work, always offering constructive insights and all round encouragement besides showing me the way while confronting challenging administrative matters. Professor Alagh's warmth as reflected in his dealings with people as well as his prolific academic contribution are needed to be emulated by scholars in social sciences in the times to come. He will always be remembered for his scholarship as an academic economist who exemplified a strength of purpose. We, at the Sardar Patel Institute of Economic and Social Research, Ahmedabad express our heartfelt condolences to his family and the larger Social Science research and academic community.

## Reference

Sambrani, S. (2022), "YK Alagh: A Bridge between Theory and Administration", *Indian Express*, December 10.

## Instructions to Authors

Manuscripts for contribution should be mailed to the Editor. They should be typed in double space, using Times New Roman font in 12 point. A manuscript must be accompanied with an abstract (100-125 words), five keywords, authors' institutional affiliations, complete addresses of authors, their contact numbers and their active email IDs for communication on a separate page (i.e. first page). The length of the paper should approximately be between 6000 and 8000 words. The paper should be accompanied by a declaration as follows:

"I declare that the paper is original and has not been simultaneously submitted elsewhere for publication."

Figures and Tables should be kept to the minimum. All Figures (including graphs and maps) should be produced in black colour and be in our journal's printable format. Tables and figures should not exceed the A-4 size format of a page. A large table could be broken into small tables for easy accommodation. All numbers and numerical figures in tables and graphs should be clearly visible. The equations (if any) should be composed in "MS Word equation editor".

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