Employment Deprivation and Welfare Loss among Households in India: Application of Duration Sensitive Analysis

Abstract:

This paper analyses the effectiveness of the existing unemployment rate in measuring the welfare loss of the people. The need for a new measure is highlighted. This measure should be able to take into consideration the duration and distribution of unemployment over all the members of a household. Recognizing the joblessness has gained significant thought but, once they have been recognized, the aggregation problem has continued to be approached by 'adding people': the unemployment rate is formally represented as the amount of the labour that, at a particular time, is jobless. A duration-sensitive unemployment rate is calculated from employment experience data collected from several households across many states and union territories of India from 2016 through 2019. The improvement in the estimation of welfare loss of the people is also determined using this new employment rate. Our outcomes present evidence for the significance of consolidating the household dimension in recognizing unemployment profiles with unusual associations in expressions of household welfare and vulnerability. An employment deprivation index is calculated for several households, and its distribution over the region, gender, literacy, caste, and religion is analysed. This paper is illustrated by the calculations that are micro-level done by using the published data from interviews of various households.

Keywords: Employment deprivation, duration-sensitive employment rate, distribution of unemployment, household employment deprivation index.

1. Introduction

Lowering down the unemployment rate is one of the biggest challenges faced by countries worldwide today. Increasing the welfare of all can only happen when the poorest of all are provided with a means to increase their well-being. This can only happen when they have the means to earn for themselves and live with dignity. The state of being unemployed is defined as a person being a part of the labor force and available to work, however, unable to find work. The unemployment rate calculates the number of

people who are unemployed as a fraction of the total number of people constituting the labor force.

However, a simple measure such as the unemployment rate cannot successfully explain the differences in people's welfare. One reason for this can be attributed to the fact that the unemployment rate fails to incorporate many essential aspects of the employment experience of the people. There are many instances where a person might be deprived of the employment that he/she might need.

The unemployment measure for a nation is typically estimated as the extent of individuals in its workforce who, at a given time, are jobless. A downside of the procedure mentioned above is it fails to assess contrasts between individuals in their 'joblessness experience.' The social misfortune from joblessness could rely upon the workforce's extent that was jobless and upon the appropriation of joblessness experience between the individuals who involved the workforce.

Without loss of generality, we can assume that the misfortune to society, i.e., the social misfortune, from a given unemployment rate would mean more noteworthy if the weight of lay-off befell on few people, who, as a result, suffered unrelieved unemployment than when unemployment is divided between innumerable people. So, the social misfortune from unemployment could rely upon the extent of the unemployed workforce and the dissemination of unemployment experience between the individuals who contained the workforce. We use the ideologies proposed by Atkinson (1970) to the estimation of pay disparity for changing unemployment rates to change them to be 'time-sensitive.' In outcome, several estimations of the time-sensitive rate will be contingent on the level of imbalance in the division of unemployment span, and the degree to which community is unwilling to the mentioned disparity, be related with a similar estimation of the expectedly described unemployment measure.

The duration of unemployment affects the welfare of the people. A person who has been unemployed for a longer time will be worse off because of its strain on the person's savings and other investments. The status of employment of other members in your family or household also affects the welfare of an individual. Hence, the distribution of unemployment in a household should also be taken into consideration. Moreover, people might be unsatisfied with the number of hours they are working and may wish to provide better resources for themselves and those dependent on them.

Inside a welfare structure, the significance of incorporating the family dimension with regards to the estimation of the unemployment rate ought not to come as an astonishment, as there is a comprehensive agreement in pay division analysis that the economy's

prosperity can't be evaluated on an individualized premise without a reference to the overall macro condition of the family. The work of families' individuals is the fundamental origin of ordinary pay and social consideration for most of the populace. Consequently, avoidance of a person from the work market influences her straightforwardly, yet besides the remainder of people living together in her family, as they will endure the absence of assets and any extra conduct issue that conceivably joins encountering a long term of joblessness. Families with greater paces of unoccupied grown-ups become fundamentally more helpless against future shocks and their outcomes, like ailment, abandonments, more costly credits, family breaks, antisocial conduct, and fewer freedoms youngsters, and so on. Consequently, a family part's joblessness increments financial weakness for the entire household.

It should, however, be clear that there is no direct correlation between unemployment and poverty among individuals, but there does exist such a correlation between unemployment in the family and poverty. This creates a need to look into the households' microstructure while understanding the unemployment rates and the social loss that is caused due to the unemployment spells. Not only unemployment but underemployment is also an issue that leads to households' welfare loss and poverty. A new index is created to measure these different employment experiences. This index can be used to analyze the well-being of people and to create policies to target the problems faced by them.

To verbalize our proposition, we utilize the methodological system previously created in the literature to quantify welfare. We evaluate families' employment deprivation using the methodologies that are used to gauge the inadequacy of wellness. Our proposition follows an analogous way to that of the Foster–Greer–Thorbecke (FGT) rules in estimating income deprivation across a cross-segment of people (Foster et al. 1984), which was as of late stretched out farther to a board by Grad´ın et al. (2012a). The total unemployment rate is a changed form of the FGT Index, presently characterized by the household occupational deprivation rate. In this manner, it acquires FGT's remarkable characteristics, especially the inclination for occupational deprivation correspondence, recording the incidence, the intensity, and the inequality of occupational exclusion.

We use the published micro-level data from CMIE to understand the employment deprivation and exclusion in the Indian Labor Market. We try to discover whether the degree to which inclusion of the family dimensions of unemployment changes unemployment profiles and patterns. We try to understand the various shocks of underemployment; nevertheless, the most critical determinant is the diverse forms in which the incidence, intensity, and inequality elements of occupational exclusion function in each section. Therefore, we can infer that an extreme concentration on formal unemployment rates can be deceptive when estimating employment welfare, given the

impact of other occupational exclusion aspects that consider the various aspects of joblessness.

The arrangement of the document is as follows. Following this introduction section, the first section exhibits the literature on estimating employment deprivation at personal and house levels. We have also considered the understanding of duration on the unemployment of various households. The second section describes the methodology to calculate an aggregate proportion of employment deprivation among families expanding in the frequency of family unemployment, altering the unemployment rate by including the duration factor and decomposing the unemployment deprivation to include the intensity, incidence, and inequality of households. Section 4 outlines the results of finding the aggregate household employment deprivation, calculation of duration sensitive unemployment rate, and the analysis of the employment deprivation among regions, genders, literacy groups, caste, and religion. The concluding section sums the principal contribution of the paper.

2. Literature Review

Over the years there has been some major developments in the area of employment and its aspects. The basic question of 'being jobless' or 'whom to consider as unemployed' is still debatable. In between these words there is another dimension of employment that we need to explore. It's the dimension of 'employment deprivation' implying individuals' willingness to work but are not successful to attain a required job as per their education status. More the duration of deprivation in attaining a job, lessen the chance of the individual to get selected for a job. This takes a toll on the family and other member savings in the households. Not only this but, just a potential individual who remains unemployed for a long period of time faces other consequences too; such as mental, social, and economic instability which further affects the family. Thus, this underlining problem causes a series of domino effect in the family and households.

The study of quality and quantity of employment in the labour market at the individual and household levels help us in determine the impact of unemployment across the region. (Diaz et al, 2017). Over the years, the way we cater to the issue of unemployment need to be changed and it is essential that we find out the radical factors associated with it while estimating the unemployment levels. The appropriate calculation of the unemployment rate has always been a debatable issue. Various studies have contributed in the development of the methods measure the unemployment level across the different region. Different indexes have been developed and have proposed many factors to be considered while estimating the rate of unemployment of a region. Some of the main factors which were found were to be relevant while estimating unemployment rates were the intensity and span of joblessness, experience of the individual. (Main, 1982)

The measurement of unemployment was found to be more effective when the duration of the period was considered. Studies conducted found that the long-term unemployment spells contributed significantly to the share of average unemployment duration, which was relatively shorter. (Anthony Shorrocks, 2008a; Beach et al, 1987). Other factors which affected the unemployment spells were gender (Bakas & Papapetrou, 2015; Queneau & Sen,2011), age (Kulik,2001; Rowley & Feather, 1987), education (Mincer,1991), social class (Lahtinen et al, 2020), population growth (Dalmar, 2017), income inequality (V.K.Borooah ,2002), region (Shorrocks, 2008b), and the cyclical business cycle (Corak, 1996). Higher levels of unemployment rates were observed after the recession and also into recovery period of the economy. Also, it was observed that the business cycle gave rise to polarisation in unemployment levels.

The most important development in the area of employment deprivation was contributed by Gradin (2012a, 2012b). In his works he tries to propose and develop a new measurement of unemployment including 3 most important factors: incidence, intensity, and inequality of unemployment. This index also tried to analyse households' well-being. Another aspect he added was to measure of occupational exclusion amongst families that were growing in the proportion of household unemployment (number of households which are affected by the loss of employment of some of its members), its magnitude and intensity, and the difference of employment segregation and concentration over households which formulated new dynamic lines in estimating poverty levels. It indicated that analysing unemployment in households' dimensions had more implications when determining the policies targeting unemployment and welfare.

Further some empirical analysis conducted in distinct parts of the world and different socio-economic backgrounds found results that support the presence of employment deprivation and how it can successfully explain the state of welfare of the people. Studies affirms that an individual welfare is affected by the length of time spend remaining unemployed. It affects his satisfaction levels, health, attitude, vocational activity and finance while it increases the satisfaction of his leisure time. (Naumann et al, 2015; Namkee Ahn, 2004). Studies support the framework where measurement of unemployment analyses the welfare aspect of the individual and the households. The employment rate is concluded to be duration – specific and the sensitivity of unemployment is related to the imbalance in the division of unemployment. (Sengupta, 2008; V.K. Borooah, 2002).

With respect to the household front, it comes with a cost which is borne by the family or the household. This cost cripples welfare due to the income loss, duration of unemployment and hysteresis. (Gorjón, 2020). The changes in employment situation and in household composition can set off large shifts in income and material well-being. (DiPrete & McManus, 2000). Those household with an unemployed member experience sizeable reduction in earnings which effects in the long-term deterioration in household finances. The acute deficit in wealth accumulation and lesser earnings contribute to severely to unemployment spells. (Dickens et. al.,2017). In

consequence, unemployment is found to have a lasting and aggravating effect throughout the life of an individual.

India witnessed a turning point in its economy in the 2000s due to the continuous worsening situation in employment where its non - agriculture sector was generating rapid employment opportunities at a considerable slower rate. Growth of the lead sector i.e., services involved growth of skill-intensive services. Demand shifted for manufactures and services which were being produced for newer, high-end manufactures and services. This was controlled by the rich and the educated and resulted in concentration of jobs and income while creating a bridge between the growing population and growth of capital - skill intensive manufacturing and services. Further studying the relationship between unemployment and social, economic deprivation variables across India found that there was a relatively higher unemployment rate in northern and a few north-eastern states, while the socio-economic deprivation was found to be higher in north-central states and lessen towards north, south, east, or north-eastern states and union territories. The unemployment level could be attributed to many reasons like the rural unemployment rate, household size, population density, etc. (Ghose & Kumar, 2021; J.H. Khan et al. ,2012)

Based on the literature, it can be observed that most of the papers address the problem of the unemployment rate as a small measure of counting heads rather than taking into account the duration of the social inequality that is being imposed on the family or the individuals. While some of the papers address the fact that duration has to be considered, the society welfare minimization is not taken into account. These papers talk about the unemployment spell during the financial crisis, but there is not much literature in the Indian context. There is a lot less literature that can be found in the Indian context. Our paper tries to examine the employment deprivation at personal and household levels. We also consider the welfare aspects associated with it and contribute to the same.

The measurement of unemployment on the lines of income and duration has to be incorporated. Most of the papers address the identification problem in the unemployment measurement but fail to address the aggregation problem. A panel data modelling based on the microdata of individuals and the households is calculated and matched with the results mentioned in the government statistics to measure the unemployment deprivation of various households on various endogenous variables such as household size, independent weight, and employment gap.

3. Data and Methodology

3.1 Data

The data used for this research was gathered by conducting a survey, which help us gather employment experience of various people across 22 states and 2 union territories. In a sample size of 35249, each household was assigned a unique ID and every member

was counted. The people who opted for the survey were asked about their age, gender, caste, religion, education, occupation, health, employment status etc. These statistics helped us in having a better understanding of distribution of unemployment on the basis of age, gender, caste etc.

Another set of data that the survey collected was about the people who availed benefits having a bank account, a demat account, health insurance, mobile phone etc. which helped us in determining the welfare of the people.

The data was collected over three years, spanning from 2016-2019. The unemployment status of household members was checked for every quarter of the year, generating a total of 12 waves of employment status of people. This helped us in gathering the most accurate data about employment gaps and durations.

3.2 Methodology

3.2.1 Effect of duration of Unemployment

Assuming that there are N individuals in the workforce of a nation (i=1, ..., N), T 'timeframes' (t= 1, ..., T). All the more solidly, one may think about a timeframe just like a month and, if T=12, the 'time frame' is similar to a year. The feature s_{it} is characterized to analogous a value that $s_{it} = 0$ if the individual i is occupied, and sit is one if the individual i is jobless, in period t.

At that point, $M_t = \sum_{i=1}^{N} s_{it}$ is the count of individuals jobless in period t, and $m_t = \frac{M_t}{N}$ is the related joblessness rate for that term. From this point forward, m_t is alluded to as the 'individual-dependent joblessness rate.' If $t = T$ is the evaluation time, at that point, $m_t$is the customary meaning of the joblessness rate. Characterize an unemployment term and a workforce term as, individually, one individual unoccupied, and one individual in the work power, for one term. At that point the duration-based unemployment rate,' u, for the year might be characterized as the proportion of the all outnumber of unemployment terms to work power a very long time in that year.

$$U = \frac{\sum_{t=1}^{T} \sum_{i=1}^{N} s_{it}}{NT} \quad \text{----------} \quad (1)$$

The unemployment deprivation is calculated by using the social loss function.

The unemployment month is calculated as one person unemployed in the given month. Therefore the period-based unemployment can be calculated as the proportion of the count of unemployment terms to the number of labor force terms in that particular period. So based on the given formula, we calculate the period-based unemployment which turns out to be 0.52.

$$U = \frac{\sum_{t=1}^{T} \sum_{i=1}^{N} s_{it}}{NT} \quad \text{---------- (2)}$$

$$u = \left(\frac{\sum_{t=1}^{T}}{T} \right) \left(\frac{\sum_{i=1}^{N} s_{it}}{N} \right) \left(\frac{\sum_{t=1}^{T} m_t}{T} \right) = \overline{m} \quad \text{---------- (3)}$$

The same equation can also be interpreted as the average of the monthly individual dependent joblessness rate for the period.

$$u = \left(\frac{\sum_{i=1}^{N}}{N} \right) \left(\frac{\sum_{t=1}^{T} s_{it}}{T} \right) \left(\frac{\sum_{i=1}^{N}}{N} \right) \left(\frac{d_i}{T} \right) \left(\frac{\sum_{i=1}^{N} P_i}{N} \right) = \overline{p} \quad \text{---------- (4)}$$

Alternatively, u, which is the unemployment rate based on the individual can be attributed as the proportion of the months that the person is unemployed. And d_i is the duration for which the person i is unemployed. Here $\overline{p}$ is the average proportion of the months the entire population of the sample is unemployed for a particular year.

We can denote the average duration of the unemployment on a monthly basis as the total time period times the average proportion of unemployment for the sample in a month.

$$\overline{d} = T\overline{p} \quad \text{---------- (5)}$$

here, for this calculation, $T = 12$. Because $d_i \geq 0$ is the unemployment span of an individual i in N.

$$\overline{d} = \sum_{i=1}^{N} d_i \quad \text{---------- (6)}$$

On the off chance that the weight of unemployment was similarly divided so that everybody in the workforce had the equivalent encounter of unemployment, at that point, $d_1 = d_2 = \ldots = d_N$. All in all, nonetheless, the weight of joblessness will not be similarly divided: for some individuals in the work power, $d_i = 0$ while, for the individuals those are continually unemployment, $d_i = 12$. If a similar count of individuals were unoccupied in every term (so that, $M_1 = M_2 = \ldots = M_T$), at that point $u = \overline{p} = m = m_t$. Under this supposition, by conditions, the unemployment rate (m_t) is equivalent to a reasonable extent of terms in the period of an year that individuals

were jobless ($\underline{p}$): subsequently, the standard term (in long periods) of joblessness might be put together as $\overline{d} = T^{*}m_T$.

3.2.5 The Social Loss Function

Let L indicate the community loss of welfare from unemployment — larger estimations of L meaning more prominent degrees of misfortune — with L being a capacity of d_i, the unemployment span of the various individuals in the work power:

$$L = L(d_1,\ d_2,\ \ldots,\ d_N) \quad (7)$$

where: $L \geq 0$, with $L = 0$ if $d_i = 0$ for all i, and $L_i = \dfrac{\partial L_i}{\partial d_i} > 0$, $i = 1,\ldots,N$.

Assume that the social loss function (SLF) of calculations can be understood in additively separate structure as:

$$L = \sum_{i=1}^{N} F(d_i) \quad (8)$$

The capacity $F(\,.\,) \geq 0$ in condition speaks to community's value of the misfortune (to it) emerging due to an individual i continuing to be jobless for d_i months. Greater estimations of $F(\,.\,)$ speak to more elevated extents of misfortune. The entirety of the person-explicit losses is the community setback related to a given standard unoccupied length for an individual, d. The adjustment in the estimation of the SLF, as a result of a variation in d_i, is, based on the condition:

$$\Delta L = \sum_{i=1}^{N} a_i \Delta d_i \quad (9)$$

here: $a_i = \dfrac{\partial F(d_i)}{\partial d_i} > 0$ is 'socially negligible loss' related with an adjustment in person i's unemployment term. On the off chance that it is expected that the capacity $F(\,.\,)$ is strictly convex curved, at that point, socially negligible loss increments for increments in di. Thus, for a specified d, community welfare loss is limited when unemployment span is the equivalent for all the individuals in the work power;

Which means, when: $d_1 = d_2 = \ldots = d_N$. A specified d, along these lines, create various degree of community welfare loss, contingent upon the way it is disseminated (as far as the person d_i) among the N individuals in the work power. It is this divisional angle that the ordinary meaning of the unemployment rate, put together for what it is worth concerning just 'counting heads,' disregards.

The social loss function has a constant elasticity. Hence the function $F(\,.\,)$ can be written as:

$$F(d_i) = \frac{d_i^{1+\varepsilon} - 1}{1 + \varepsilon} ------------------------------ (10)$$

H e n c e ,

$$a_i = \frac{\partial F(d_i)}{\partial d_i} = d_i^{\varepsilon} \rightarrow \frac{\partial a_i}{\partial d_i} * \frac{d_i}{a_k} = \varepsilon > 0 ------------------ (11)$$

. Therefore, the rate change in the welfare assistance loads, following A Time-sensitive calculation of the Unemployment Rate, a measure of change face to face I's extent of unoccupied months, is definite and steady. The more prominent the estimation of ε, the more prominent the relative increment in the social well being assistance loads in reaction to a relative increment in d_i. The argument ε speaks to, as demonstrated as follows, community's avoidance for occupational imbalance,' where occupational disparity has been characterized as contrasts, between individuals in the work power, in unemployment span.

Review of social loss

Assume for 2 individuals j, k, with the unemployment durations as $d_j > d_k \left(d_j, d_k > 0\right)$

The unemployment term of j (a 'work needy' individual, comparative with k) is diminished by Δd_j, with an expansion Δd_k in the unemployment term of k (a 'work rich' individual, comparative with j). On the off chance that $\Delta d_k = -\Delta d_j$ and $\Delta d_i = 0, i \neq j, k$, at that point the normal term, $\underline{d}$, stays unaltered. Assume that $d_j = \lambda d_k, \lambda > 1$. At that point, the adjustment in community welfare deprivation, as an outcome of these variations, is:

$$\Delta L = a_k \Delta d_k - a_j \Delta d_j = d_k^{\varepsilon} \Delta d_k - \lambda^{\varepsilon} d_k^{\varepsilon} \Delta d_j ------------------ (12)$$

Setting $\Delta L = 0$, the equation becomes:

$$\Delta d_k = \lambda^{\varepsilon} \Delta d_j ------------------------------ (13)$$

From this condition, if $\varepsilon = 0$, $\Delta d_k = \Delta d_j$. This infers society would be set up to diminish the unoccupied length of a destitute business individual (j), in return for an equivalent increment in the unoccupied length of an employment rich individual (k).

A result of this division, d, the normal length of joblessness, would not change. If $\varepsilon > 0$, at that point, to decrease j's unemployment length by Δd_j, community would be set up to increase k's unemployment length by $\Delta d_k = \lambda^{\varepsilon} \Delta d_j > \left(\Delta d_j \right)$, resulting that d would increase. In different terms, community will be able to set up to face an ascent in the normal length of unoccupied individual (d) in return for more prominent fairness in

its circulation. This resistance of a larger d, in trade for a specific decrease in the imbalance of its dissemination, is more noteworthy for higher estimations of ε. In this sense, the estimation of ε speaks to how much society is loath to unemployment imbalance

A time-adjusted unemployment measure

Assume $d^* \geq \overline{d}$ speak to the normal span of joblessness which, if additionally, the joblessness length of each individual in the work power, would result in a similar degree of social misfortune as the current conveyance of unemployment term, $d_1, d_2, \ldots, d_N$. At that point d^* might be named the balanced division of equivalent unemployment span.' Accompanying from this current, characterized regarding the parameter ε, applied to contrasts between jobless individuals in their extents of unemployed months, yields

$$A^{\varepsilon} = \left(\frac{d^*}{\overline{d}}\right) - 1 = \left[\sum N^{-1}\left(\frac{d_i}{\overline{d}}\right)^{1+\varepsilon}\right]^{\frac{1}{1+\varepsilon}} - 1 \text{ - - - - - - - - - - - - - - - - - - - (14)}$$

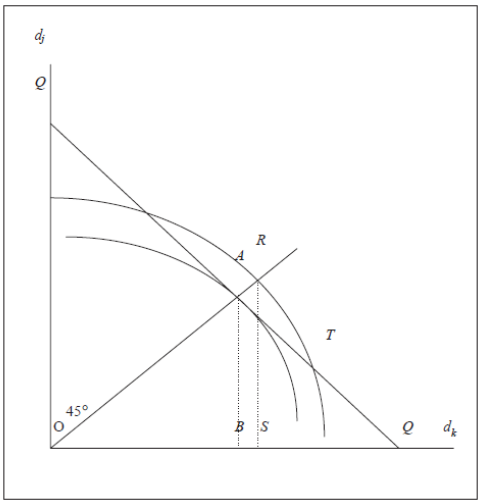
At the point when $\varepsilon = 0$, society is uninterested concerning the way in which the standard unemployment term is disseminated: $d^* = \overline{d}$ and $A = 0$.

For $\varepsilon > 0$, $d^* \geq \overline{d}$ and $A > 0$, the larger the estimation of the joblessness imbalance revulsion argument ε, the more noteworthy would be the estimation of d^* what is more, hence, of the imbalance record A. The social misfortune relating to the watched normal term $\overline{d}$ is:

$L = \overline{d}\left(1 + A_{\varepsilon}\right) = d^* = \overline{m}\left(1 + A_{\varepsilon}\right) = m^*$ - (15)

where: $X_m\ (= \overline{p} = u) = \lambda = T$ and $m^* = d^* = T$. This Condition has an intrinsic understanding: the social welfare deprivation from guaranteed ('routinely characterized') joblessness rate X_m is expanded by the level of imbalance in the dissemination of its occurrence. The worth of m^* speaks to the 'term balanced j rate' relating to the 'ordinarily characterized' unemployment rate X_m. The estimation of m^* mirrors the social loss related to X_m: this social distress (typified in the estimation of m^*) depends not simply on the estimation of X_m (registered by 'tallying heads') yet besides upon the level of unemployment disparity.

Figure 1: Duration based unemployment rate



In Figure 1, the intersection between the indifference graph and the term probability epicentre happens at a node (A) on the 45 degrees lines: for a fixed λ, community welfare deprivation is limited at the point when the two individuals have a similar unemployment length. If, be that as it may, the results concerning d_j and d_k — the unemployment span of j and k — are at T. At that point, the typical span AB is government assistance identical to average length RS if RS is similarly circulated among j and k. This implies community is impassive between the lower λ = AB at T, that is inconsistent circulated among j and k, and the greater λ = RS at point R, which is similarly circulated among j and k. The level of imbalance in circulation of joblessness rates is, based on condition, (RS/AB)-1 and this is additionally the rate sum over which the community welfare deprivation from situating at T surpasses its base with an incentive at A. The more noteworthy the level of imbalance revulsion, the greater 'bowed' will be the lack of indifference graphs, the elevated will be node R over the 45-degree lines and the more noteworthy will be the level of disparity related with the conveyance at T.

3.2.2 Effect of households on unemployment

An employment deprivation index for every family is calculated by taking the percentage of households' members who are in the work force and are jobless. These micro-level records are aggregated for the whole objective community which help us in defining the duration, intensity and unequal distribution of unemployment for households.

Let there be N households with at least one household member is of working age and available to work and with total number of members ranging from 1 to H_i, and i denoting

an individual household. The individual employment gaps for the i^{th} household can be represented as a vector-

$$g_i^{\gamma} = \left(g_{i1}^{\gamma},\ g_{i2}^{\gamma},\ g_{i3}^{\gamma},\ \dots\ g_{iH_i}^{\gamma}\right) ------------------------ (16)$$

$$g_{ij}^{\gamma} = \begin{cases} \left(\frac{\bar{h}_{ij} - h_{ij}}{h_{ij}}\right)^{\gamma} & \text{if } h_{ij} < \bar{h}_{ij} \text{ and } j \in \Theta_i \\ 0 & \text{otherwise} \end{cases} \text{-------------------------(17)}$$

Here, $h_{ij} \geq \underline{0}$ is the number of working hours for an individual member j of household i. The variable $\bar{h}_{ij} > 0$, denotes the number of hours the individual would ideally like to work for.

Θ_i is the subset of the individuals who suffer from employment deprivation, i.e. the underemployed or the unemployed.

For the set of unemployed individuals in the household, $g_i^{\gamma} = 1$, assuming $h_{ij} = 0$ and $g_{ij}^{\gamma} = 0$ for the rest of the members.

For the set of underemployed individuals in the household, $0 < g_i^{\gamma} < 1$.

3.2.3 Individual Household Employment Deprivation Index

An employment deprivation function, $u_i\left(g_i^{\gamma}, \tau\right)$ can be defined for an employment threshold $0 < \tau < 1$. The vector of index of household employment deprivation can be defined as-

$$u = \left(u_1, u_2,\ u_3, \dots u_N\right) ---------------------------- (18)$$

This index should have the following properties:

- $u_i\left(g_i^{\gamma}, \tau\right)$ should be a continuous function of g_i^{γ} over any τ. (Continuity axiom)
- A reduction in the unit-time of any work deprived person leads to an increment in the determined level of family employment loss (Monotonicity axiom).

- A transference of operating time of a deprived person towards different family member who is less deprived (with a feebler occupational gap, g_i^{γ})would continually improve the family's occupational loss (Regressive transfer axiom).
- The household employment deprivation index will not change because of:
  - Any improvement in serving times for non-deprived people (Focus axiom)

- Any scaling of both the operating-hours limits and operation time by the identical factor for all people in the family (Scale invariance axiom).
- Any alterations in occupational pauses, g_i^{γ}, between people in the same family (Anonymity axiom).
- Following r replications of the principal members of the family (Replication invariance axiom).

Now, the family's occupational deprivation index is defined as:

$$u_i\left(g_i^{\gamma},\tau\right)=\frac{1}{H_i^A}\sum_{j=1}^{H_i^A} g_{ij}^{\gamma} \quad \text{i f}$$
$$\hat{u}_i>\tau \quad ---------- (19)$$
$$u_i\left(g_i^{\gamma},\tau\right)=0 \text{ if } \hat{u}_i\le\tau$$

Here, $0<\tau<1$ is the threshold for the family's occupational loss. H_i^A is the number of economically productive people in family i. $\hat{u}_i$ is defined as mean occupational deprivation record of family i.

$$\hat{u}_i=\frac{1}{H_i^A}\sum_{j=1}^{H_i^A} g_{ij}^{1} \quad ---------- (20)$$

ω_i is defined as the weight associated to household i.

$$\omega_i=\frac{H_i{}^A}{\sum_{i=1}^{N} H_i{}^A} \quad ---------- (21)$$

Each household is weighed according to its size. This method is proven to be most consistent with the well-being of the people as it incorporates the experience of people who are out of the labor market, but whose well-being is dependent on the status of employment of others in their households.

3.2.4 Aggregate Household Occupational Deprivation Index

Now, we define an aggregate household occupational deprivation index $U(u)$, which is a is a relation of household employment deprivation index u_i.

$U(u)$ should have the following properties:

- The U index should be a continuous function of u_i (Continuity axiom).
- U increases whenever there is an increase in u_i (Monotonicity axiom).

- The U record persists unaltered after whichever transformation of u_i for a given member of families (Anonymity axiom).
- The U index remains unaltered following r reproductions of the family's primary members, thus enabling comparisons of the level of occupational deprivation in communities of different sizes (Replication invariance axiom).
- U decrements whenever there is an equalization of u_is (Choice for occupational deprivation balance amongst deprived-households axiom).

We construct the aggregate household employment deprivation index as follows-

$$U(\boldsymbol{u}) = \begin{cases} \sum_{i=1}^{N} u_i^{\alpha}\omega_i = \sum_{i=1}^{N} \left[\frac{1}{H_i^A}\sum_{j=1}^{H_i^A} g_{ij}^{\gamma}\right]^{\alpha} \omega_i \text{ if } \alpha > 0 \quad ---------- (22) \\ \sum_{i=1}^{N} I(u_i)\omega_i \quad \text{if } \alpha = 0 \quad ---------- (23) \end{cases}$$

Here, $\alpha \geq 0$, signifies the degree of aversion to the disparity in the family's occupational deprivation.
$I(u_i)$ is an indicator function, which is defined as:
$I(u_i) = 1$ if $u_i > 0$
$I(u_i) = 0$ if $u_i = 0$

γ captures the family's occupational deprivation index's responsiveness to the occupation-deprived family members' work gap. If γ=0, the participation of all people struck by economic loss in a family is equal. If γ=1, the index indicates the average family gap, exhibiting the family's degree of occupational deprivation. Nevertheless, it neglects to consider that deprivation is divided among family individuals.

$U_{\alpha}(u)$ indicates the aggregated family occupational deprivation index to the power ofα. U_0 estimates the family occupational deprivation measure. U_1 is the per-capita family occupational deprivation level of the people. If $\alpha > 1$, then $U_{\alpha}(u)$ estimates the social inclination of the family for equity. Therefore, we can say that $U_{\alpha}(u)$ estimates the responsiveness to severe family deprivation whenever the parameter α takes a high value.

Let $u = (u^1, u^2, \ldots, u^K)$ indicate a distribution of residents of families into K mutually exclusive families and u^k is the vector of occupational deprivation records into the family's which are a part of group k.
The $U_{\alpha}(u)$ index can be defined as –

$$U_\alpha(u) = \sum_{k=1}^{K} U\left(u^k\right) \times \pi^k -------------------------- (24)$$

Here, $\pi = (\pi^1,\ \pi^2,\ \ldots,\ \pi^k)$ denotes the respective population weights.

The Foster-Greer-Thorbecke (FGT) index is a generalized poverty measure, as developed by Erik Thorbecke, Joel Greer, and James Foster. Traditional decomposition of $U_\alpha(u)$ for $\alpha = 2$, leads to-

$$U_2(u) = H\left[I^2 + \left(1 - I^2\right)C_{1-u}^2\right] = H\left[I^2 + V_u\right] ------------------ (25)$$

If $\omega_i = \dfrac{H_i}{\sum_{i=1}^{N} H_i}$, then H indicates the proportion of individual members of the household affected by the employment deprivation. $I = \overline{u} = \sum_{i=1}^{q} u_i\omega_i$ and C_{1-u}^2 represents the squared coefficient of variation $(1 - u_i)$.

The weighted mean and variance of family occupational deprivation records among deprived families are denoted by V_u.

Generalizing this formula, we can say that for any $\alpha \geq 0$,

$$U_\alpha(u) = HI^\alpha\left[1 + E_u^\alpha\right] -------------------------- (26)$$

$$E_u^\alpha = \sum_{i=1}^{q} \left[\left(\frac{u_i}{\overline{u}}\right)^\alpha - 1\right] w_i -------------------------- (27)$$

, denotes the family of Generalized Entropy inequality indices.

4. Empirical Results and Inferences

4.1 Duration-Sensitive Unemployment Rate

Table 1: Employment deprivation on individual basis

m1t	m2t	m3t	m4t	m5t	m6t	m7t	m8t	m9t	m10t	m11t	m12t
0.076	0.068	0.051	0.045	0.037	0.037	0.041	0.033	0.035	0.033	0.032	0.034
U	0.014										

d bar	0.014

The above table gives the brief about the employment deprivation on the individual basis. The value of the U or $\bar{p}$ which is the average proportion of workforce unemployment over the entire duration turns out to be 0.014. Further, the value of the $\bar{d}$, or the average duration of unemployment (in months) has a value of 0.52.
The value of the social loss functions for different values of the elasticity, a measure of social inequality in the loss perceived in the word forces are:

Table 2: Social loss function for various values of elasticities

E	Social Loss Function Value
0	-16904
0.1	-10673.7
0.3	3230.024
0.5	21835.69

The value of the time-adjusted joblessness rate based on the Atkinson's (1970) inequality index turns out to be for different elasticities as:

Table 3: Duration-based unemployment rates for different values of elasticities

E	Duration based unemployment rates
0	0.014456675
0.1	0.019220278
0.3	0.030289797
0.5	0.043047674

We continue to analyze the sample of 35249 from 12 waves of quarterly data from 2016 to 2019. The mean length of span in the period that individuals in the labor force are unoccupied is $\lambda = 0.52$ which comes out to be half a month. This mean, as observed earlier, can bury substantial inter-person divergence in unoccupied span.

Two plots were considered:

- Equality case: every one of the 35249 individuals in the labor force was unoccupied for 2 months in a particular year.
- Inequality case: this is based on the actual sample data that is used for the calculation of the unemployment duration calculation.

For each ase, based on diverse numbers of the inequality aversion argument e, the time regulated unemployment rate, corresponding to the 1.44% unemployment rate, was calculated.

This denoted that with a low level of inequality aversion ($\varepsilon = 0.5$), a 1.44% joblessness rate can be expressed as a time-regulated unemployment measure of 4 percent under the inequality case.

Table 4: Unemployment deprivation rates in the equality and inequality scenarios

E	Equality	Inequality
0	0.014456675	0.014456675
0.1	0.014456675	0.019220278
0.3	0.014456675	0.030289797
0.5	0.014456675	0.043047674

We can see that there is a considerable change in the duration-based unemployment values over different social inequality values, around 300% increase in the inequality considering the inequality of 0.5 scenario. As the scenario can be further changed to an elasticity of 1.5 the value turns out to be a very high value depicting the change in the general unemployment measure and the duration-based unemployment measure. This is basically attributed to the fact that the social loss is minimized when all the people of the population are equally unemployed which is not the usual scenario.

This part of the calculation is not considered when the usual unemployment rates are being calculated based on the headcount of the count of individuals unoccupied at the end of the period to the total population considered. This misses out both the facts of unequal deprivation based on the size of the household, duration of unemployment and the inequality index taken into account of the society; and the intermediate months unemployment duration and deprivation values.

4.2 Aggregate Household Occupational Deprivation Index $U(\,.\,)$

The following are the values of aggregate household employment deprivation index $U(\,.\,)$ decomposed into incidence, intensity and inequality of deprivation in employment, according to the formula: $U(Y,z) = (1+e) \times H_i^{\alpha}$.

Figure 2: Decomposition of aggregate household occupational deprivation index

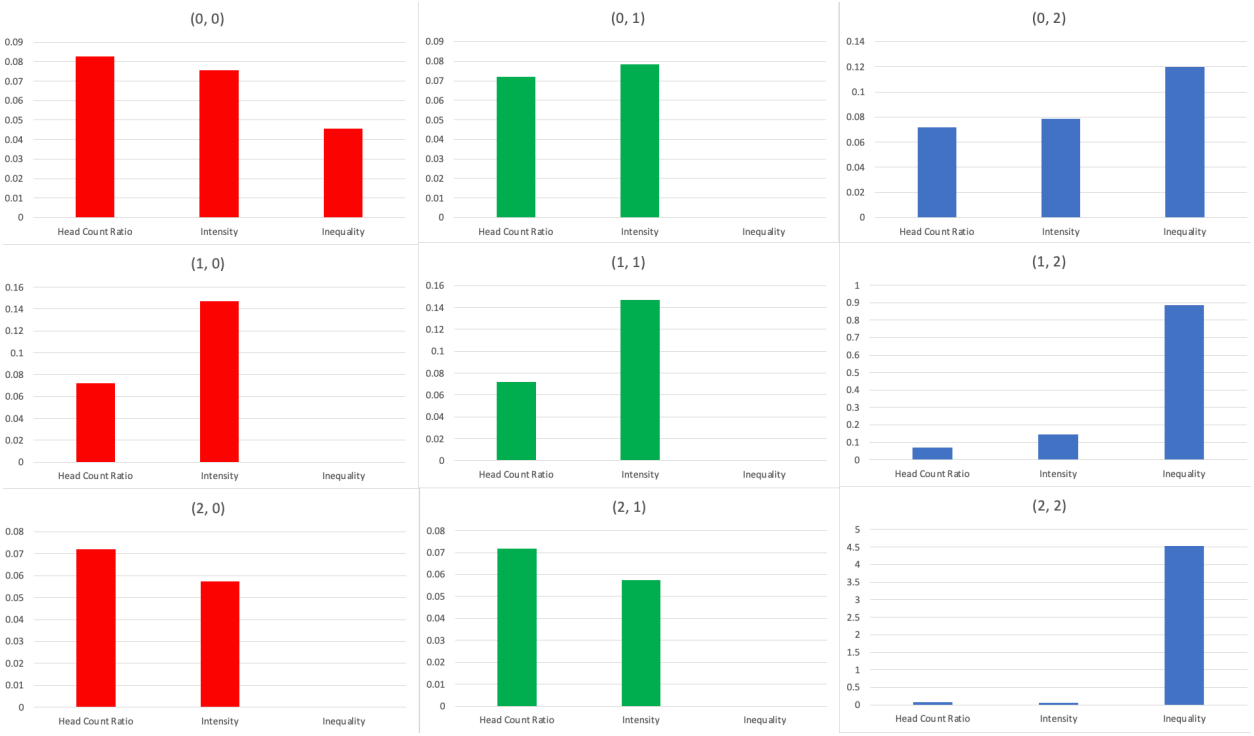


Table 5: Decomposition of aggregate household employment deprivation index $U(.)$ into head count ratio, intensity and inequality

		γ		
α		0	1	2
0	Head count Ratio	0.0719	0.0719	0.0719
	Intensity	0.0784	0.1472	0.0575
	Inequality	0.0000	0.0000	0.0000
1	Head count Ratio	0.0719	0.0719	0.0719
	Intensity	0.0784	0.1472	0.0575

	Inequality	0.0000	0.0000	0.0000
2	Head count Ratio	0.0719	0.0719	0.0719
	Intensity	0.0784	0.1472	0.0575
	Inequality	0.1201	0.8871	4.5212

From the above table, we can see that there is a difference in the unemployment rate calculation based on the different methodologies from the necessary headcount to the intensity calculations. The headcount measure remains the same in all the situations of sensitivity due to social inequality or due to variability in the employment within the households. The unemployment rate due to the headcount ratio turns out to be 7.19% in all the situations. The intensity part of the unemployment deprivation keeps decreasing as the variability measure in the households keeps increasing. The intensity has reduced from 0.74 to 0.05, with an increase in the parameter gamma (γ). The inequality measure is only measured for the inequality indexed parameter of 2(α), and the inequality increases from a value of 0.12 to 4.52, a massive increase with an increase in the variability in the unemployment within the households. All this data needs to be taken into account while calculating the net unemployment deprivation of the country, and only the headcount ratio does not satisfy the needs as it does not account for the variability and inequality in the unemployment scenarios in the society.

For $\alpha = 2$, an alternative decomposition can be done, based on the formula-

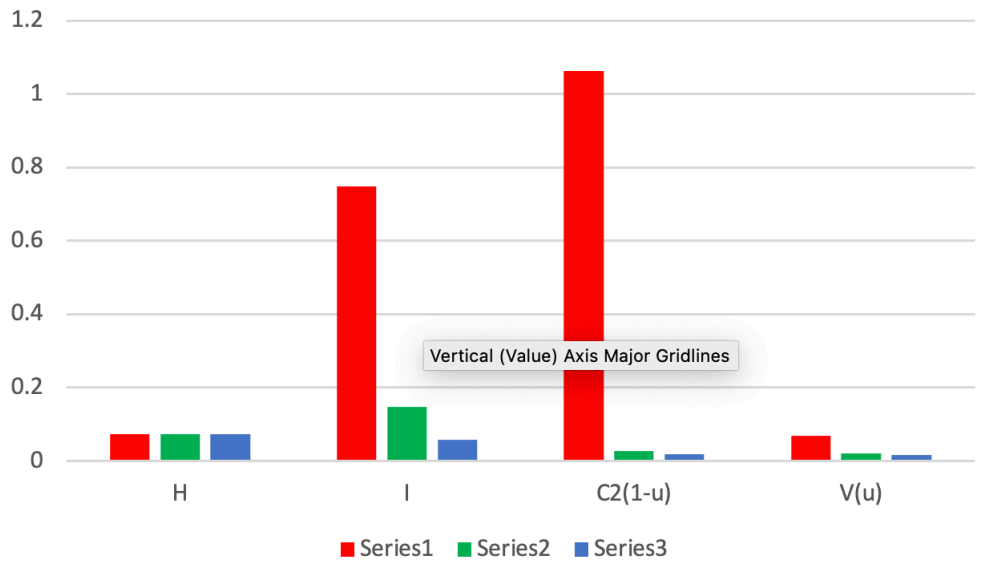
$$U_2(u) = H\left[I^2 + \left(1 - I^2\right)C_{1-u}^2\right] = H\left[I^2 + V_u\right]$$

$$V_u = \left(1 - I^2\right)C_{1-u}^2$$

Table 6: Alternative decomposition of aggregate household occupational deprivation index for $\alpha = 2$, i.e. $U_2(u)$

γ	Head count ratio	Intensity	C_{1-u}^2 Squared coefficient variation of $(1-u)$	V_u Variation of $(1-u)$
0	0.0719	0.7484	1.0627	0.0673
1	0.0719	0.1472	0.0265	0.0192
2	0.0719	0.0575	0.0168	0.0149

Figure 3: : Alternative decomposition of aggregate household occupational deprivation index for $\alpha = 2$



Built on the FGT index for poverty that captures the inequality in the incomes, we can use a similar model to calculate the unemployment rate, which includes the headcount ratio, the intensity of unemployment, and the variation in the unemployment of the households. Further, this measure can be calculated for various degrees of variation in unemployment within the household. The headcount ratio and the intensity have already been discussed earlier, but the variation in unemployment rapidly decreases as the value of Υ increases from 0.0673 to 0.014. These measures are multiplied together to form a composite unemployment index which is analyzed later.

4.3 Analysis of Employment Deprivation

Distribution of employment deprivation is analyzed for the categories: region, gender, literacy, caste and religion. The responsiveness of the family occupational deprivation index to alternation of employment (γ) and inequality among deprived households (α) has also been analyzed. Here γ ranges from 0-2 and α ranges from 0-2. Employment deprivation is supposed to be minimum when the unemployment distribution is even across various households, which is denoted by α. The deprivation index should also decrease with a change in employment in the household, which is measured by γ.

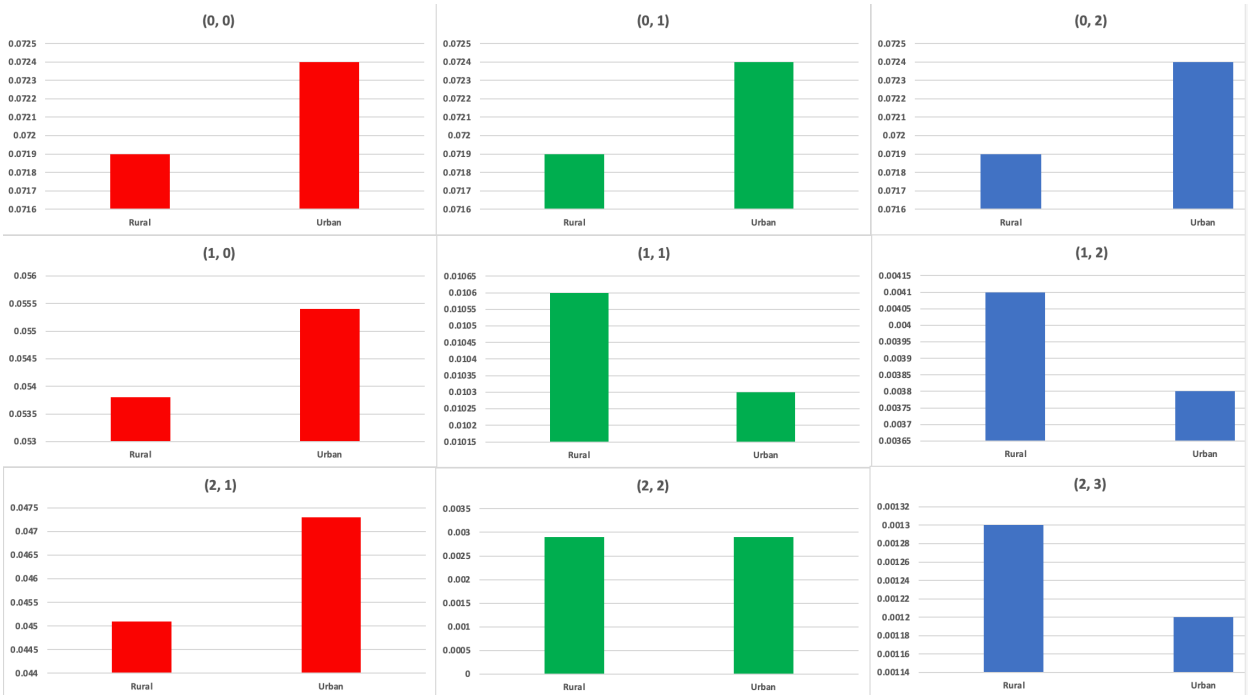
1. Employment Deprivation Across Region

Table 7: Employment deprivation index for households based on region

	(γ, α)								
Region	(0,0)	(0,1)	(0,2)	(1,0)	(1,1)	(1,2)	(2,0)	(2,1)	(2,2)

Rural	0.0719	0.0719	0.0719	0.0538	0.0106	0.0041	0.0451	0.029	0.013
Urban	0.0724	0.0724	0.0724	0.0554	0.0103	0.0038	0.0473	0.029	0.012

Figure 4: Graphs showing employment deprivation index for households for different sensitivities based on region



As we can infer from this analysis, when the family's occupational less index is insensitive to variation in employment, the index remains constant for rising sensitivity to inequality among deprived households. This is applicable to both rural and urban households. Both rural and urban households face cyclical changes in their employment, Hence, their deprivation index is roughly similar to each other's.

For households in both regions, when it becomes more susceptible to change the employment status of its members (γ), the employment deprivation index decreases, as it should.

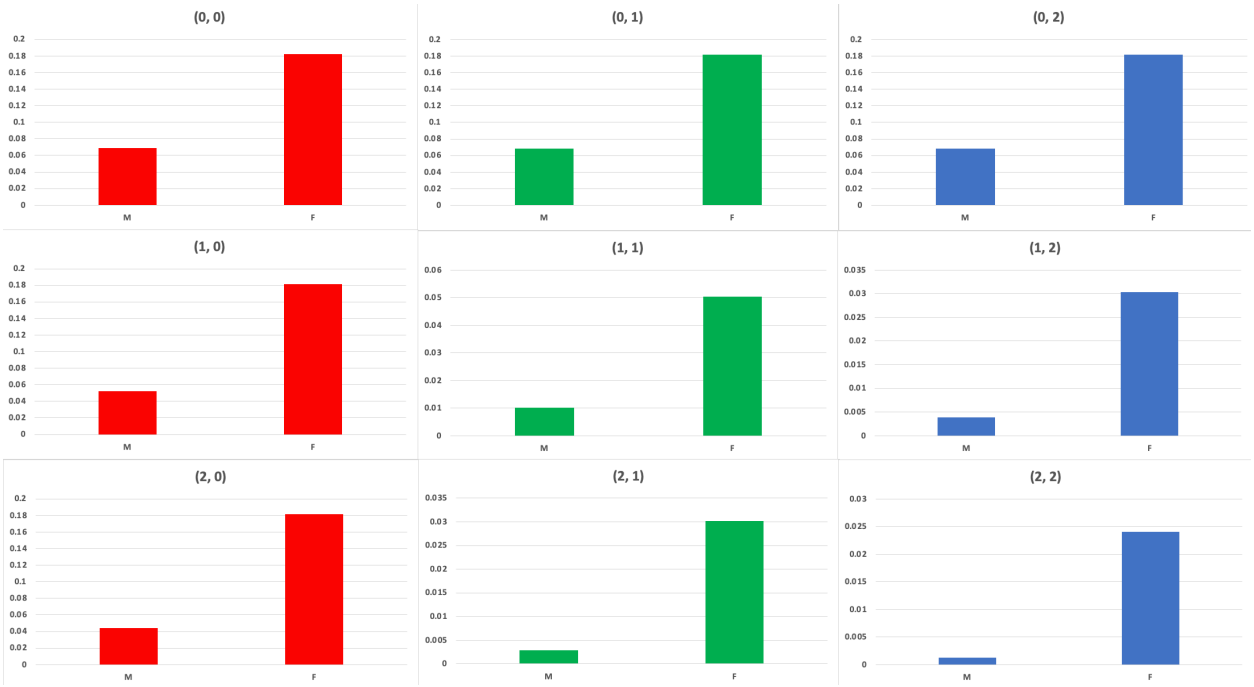
Similarly, when there is rising sensitivity to inequality among deprived households (α), the employment deprivation index decreases for both rural and urban households.

2. *Employment Deprivation Across Gender*

Table 8: Employment deprivation index for households based on gender

	(γ, α)								
Gender	(0,0)	(0,1)	(0,2)	(1,0)	(1,1)	(1,2)	(2,0)	(2,1)	(2,2)
Male	0.0687	0.0687	0.0687	0.0521	0.0102	0.0039	0.0441	0.0029	0.0013
Female	0.182	0.182	0.182	00.1816	0.0503	0.0304	0.1814	0.0302	0.024

Figure 5: Graphs showing employment deprivation index for households for different sensitivities based on gender



Analysing the employment deprivation index for both male and female genders, we can conclude that the female population feels more deprived than the male population, as many females choose to become housewives, which is still not included as a part of the employment. Apart from this, women usually do not seek employment in order to focus on raising a family.

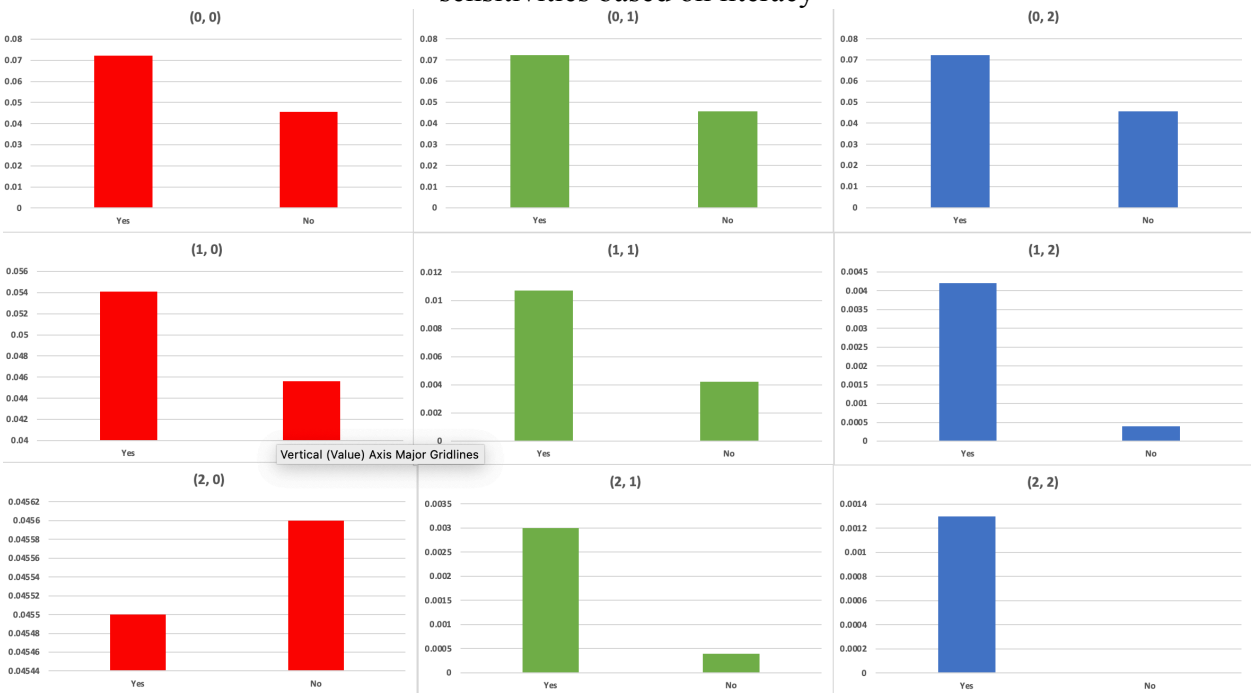
A clear trend shows that as households become more sensitive to change in employment (γ) and to inequality amongst deprived households (α), the employment deprivation index decreases for both the genders.

3. *Employment Deprivation Across Literacy*

Table 9: Employment deprivation index for households based on literacy

	(γ, α)								
Literacy	(0,0)	(0,1)	(0,2)	(1,0)	(1,1)	(1,2)	(2,0)	(2,1)	(2,2)
Yes	0.0722	0.0722	0.0722	0.0541	0.0107	0.0042	0.0455	0.003	0.0013
No	0.0456	0.0456	0.0456	0.0456	0.0042	0.0004	0.0456	0.0004	0

Figure 6: Graphs showing employment deprivation index for households for different sensitivities based on literacy



The statistics calculated above clearly indicate that literate people are more deprived of unemployment than the illiterate people. This trend can be explained by the dependency of illiterate people on the literate people. Many people, who were unable to get access to education earlier, now rely on their educated children to look after them. For many women in India, education is not considered a priority and as a result, they become financially dependent on their spouses.

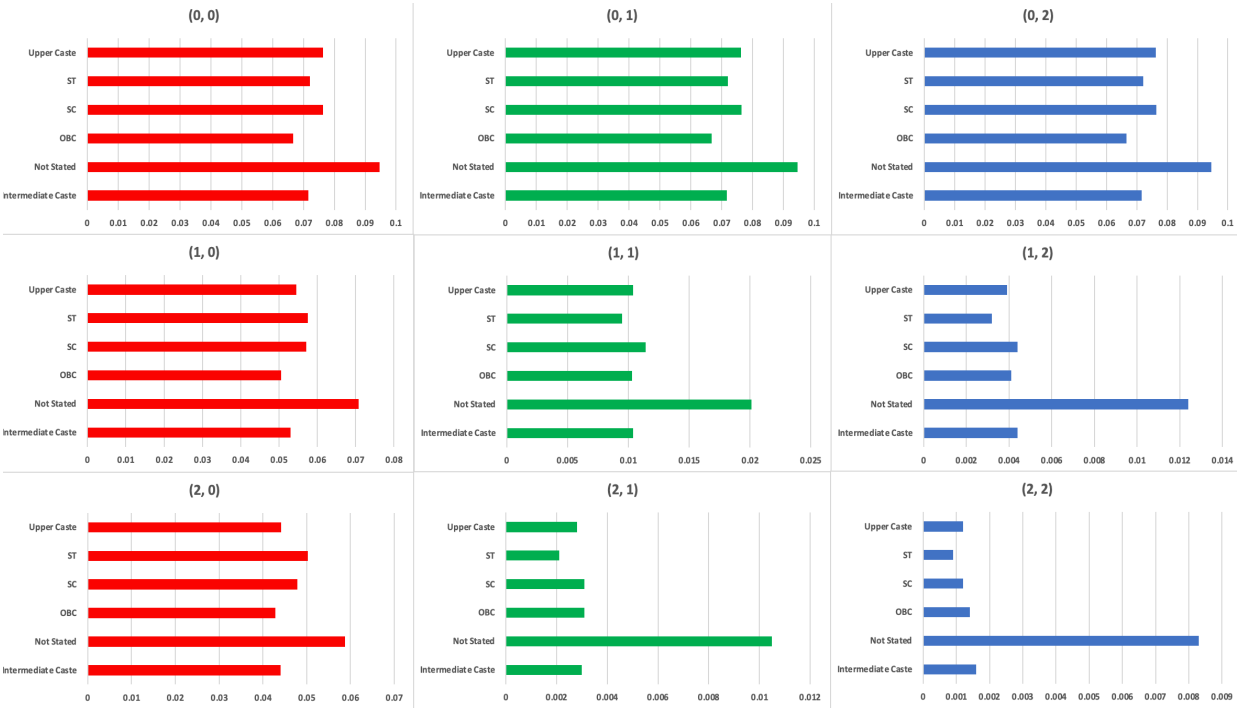
The employment deprivation index decreases with an increasing sensitivity to changes in employment (γ) and inequality amongst deprived households.

4. *Employment Deprivation Across Caste*

Table 10: Employment deprivation index for households based on caste

	(γ, α)								
Caste	(0,0)	(0,1)	(0,2)	(1,0)	(1,1)	(1,2)	(2,0)	(2,1)	(2,2)
Intermediate	0.0716	0.0716	0.0716	0.053	0.0104	0.0044	0.0441	0.003	0.0016
Not Stated	0.0946	0.0946	0.0946	0.0708	0.0201	0.0124	0.0588	0.0105	0.0083
OBC	0.0667	0.0667	0.0667	0.0506	0.0103	0.0041	0.0429	0.0031	0.0014
SC	0.0764	0.0764	0.0764	0.0571	0.0114	0.0044	0.0479	0.0031	0.0012
ST	0.0721	0.0721	0.0721	0.0575	0.0095	0.0032	0.0503	0.0021	0.0009
Upper Caste	0.0763	0.0763	0.0763	0.0545	0.0104	0.0039	0.0442	0.0028	0.0012

Figure 7: Graphs showing employment deprivation index for households for different sensitivities based on caste



The people who have not stated their caste appear to suffer from the highest level of employment deprivation. Relatively, other castes have a low employment deprivation that might be because of the support from their communities. The minor castes like SC, ST,

OBC etc. also enjoy government benefits in terms of reservations in educational institutes etc. This provides them with a better opportunity to provide for themselves.

Even this distribution of employment deprivation index follows the trend of decreasing deprivation while increasing the responsiveness of the deprivation records to change in occupation (γ) and increasing the sensitivity to inequality amongst deprived households (α).

5. Employment Deprivation Across Religion

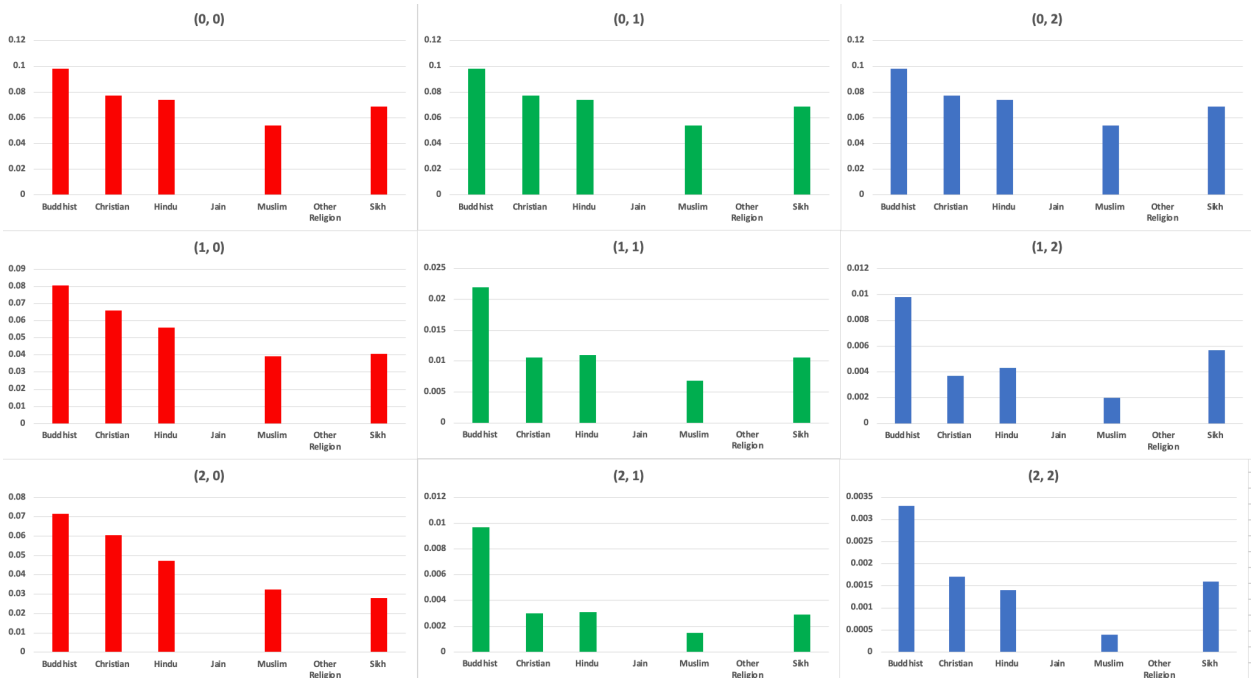
Table 11: Employment deprivation index for households based on religion

	(γ, α)								
Religion	(0,0)	(0,1)	(0,2)	(1,0)	(1,1)	(1,2)	(2,0)	(2,1)	(2,2)
Buddhist	0.0983	0.0983	0.0983	0.0805	0.0219	0.0098	0.0716	0.0097	0.0033
Christian	0.0771	0.0771	0.0771	0.066	0.0106	0.0037	0.0604	0.003	0.0017
Hindu	0.074	0.074	0.074	0.0559	0.011	0.0043	0.0472	0.0031	0.0014
Muslim	0.0539	0.0539	0.0539	0.0394	0.0068	0.002	0.0325	0.0015	0.0004
Sikh	0.0685	0.0685	0.0685	0.0405	0.0106	0.0057	0.0279	0.0029	0.0016

The distribution of the employment deprivation index amongst different religions follows the pattern of decreasing deprivation, with increasing change in employment. Out of all the religions mentioned, Buddhism has the highest employment deprivation and the Muslim community has the lowest.

Apart from this trend, we can also observe how the employment deprivation index decreases with increasing sensitivity to change in employment (γ) and increasing sensitivity to inequality amongst deprived households.

Figure 8: Graphs showing employment deprivation index for households for different sensitivities based on religion

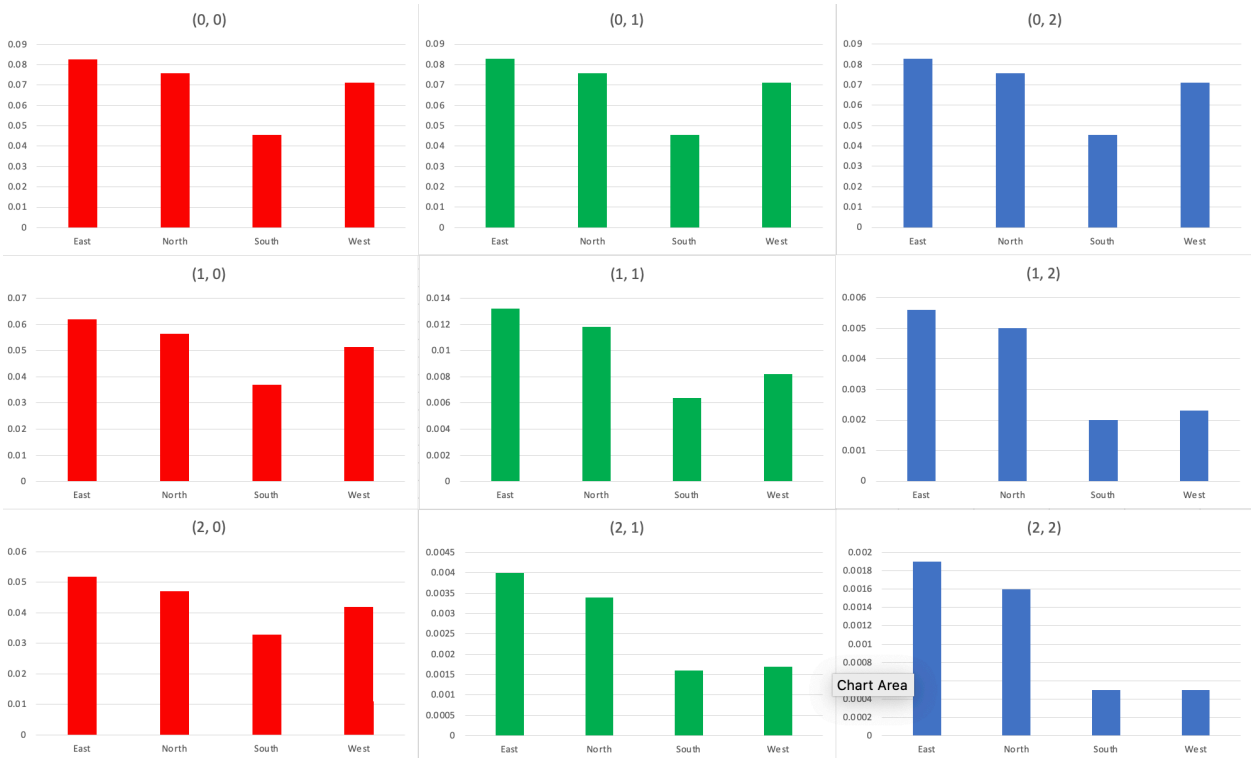


6. *Employment Deprivation Across Demographic Regions*

Table 12: Employment deprivation index for households based on demographic regions

	(γ, α)								
Region	(0, 0)	(0,1)	(0, 2)	(1, 0)	(1, 1)	(1, 2)	(2, 0)	(2, 1)	(2, 2)
East	0.0828	0.0828	0.0828	0.0619	0.0132	0.0056	0.0519	0.004	0.0019
North	0.0757	0.0757	0.0757	0.0564	0.0118	0.005	0.047	0.0034	0.0016
South	0.0455	0.0455	0.0455	0.037	0.0064	0.002	0.0328	0.0016	0.0005
West	0.0711	0.0711	0.0711	0.0514	0.0082	0.0023	0.042	0.0017	0.0005

Figure 9: Graphs showing employment deprivation index for households for different sensitivities based on religion



Note: The regions are composed of the following states: North: Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttarakhand, and Uttar Pradesh. East: Assam, Arunachal Pradesh, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Sikkim, Tripura, and West Bengal. South: Andhra Pradesh, Andaman & Nicobar Islands, Goa, Karnataka, Kerala, Lakshadweep, Pondicherry, and Tamil Nadu. West: Chhattisgarh, Dadra and Nagar Haveli, Daman and Diu, Gujarat, Madhya Pradesh, and Maharashtra.

Based on the above table and graph, we can see the geographical breakup of the degree of unemployment across the four regions in the Indian Subcontinent. We can see that there is significant heterogeneity in the unemployment deprivation across the regions. Considering the incidence of unemployment, we can see that the unemployment deprivation is highest in the eastern part of India, followed by the Northern Region and the Western Region, and the unemployment deprivation is the least in Southern India. We can support the above facts by bringing the development of the cities in the states. Cities such as Delhi, Hyderabad, Bengaluru, Chennai, Kolkata, Mumbai have been the cities with employment opportunities. The NCR region in Delhi, Bengaluru, and Hyderabad have emerged as IT hubs. A considerate amount of the population has been migrating for job opportunities from Eastern and Northern India where the employment opportunities are few to urban regions causing the unemployment shift across the regions.

By increasing the sensitivity of household employment deprivation indices to the variability of employment within the household, we can see that the trend of unemployment deprivation remains the same. However, the value of the is less for all the regions. In all the regions, when households become more susceptible to change the

employment status of their members (γ), the employment deprivation index decreases, as it should.

When there is an increase in sensitivity to inequality among deprived households (α), the employment deprivation index decreases in the regions. This decrease can be seen a lot in the western region and the southern region. This shift is observed for $\gamma > 0$.

5. Conclusion

After analysing the employment experience of more than 35,000 people over three years, 2016-2019, it can be concluded that the hypothesis of the unemployment rate being insufficient to explain the welfare loss of the people is true. When other factors, such as impact of households on welfare, duration of unemployment and unequal distribution of employment gaps etc. are taken into account, the social welfare loss of the people increases by a huge margin. Hence, we can confidently say that a new index of measuring unemployment and welfare can be a better tool for the government to create policies and programs that can help target unemployment and increase the welfare of the society.

The analysis of the distribution of household employment deprivation index also shows several patterns of unemployment in households based on region, gender, literacy, gender, caste and religion. One common trend is observed for the distribution of unemployment across all sections of the society. The household employment deprivation index decreases with increasing sensitivity to change in employment (γ) and with increasing sensitivity to inequality amongst households (α), as it should.

The other trends and patterns are a reflection of the social norms of our country. Urban and rural households show approximately equal levels of employment deprivation. Females are found to be more deprived of unemployment than males, because of various personal reasons. Similarly, the non-literate population was found to be less deprived of employment as compared to the literate population, as they depend on the latter for their welfare. It was also observed that households who did not identify with any caste and the community of Buddhism experienced the highest levels of employment deprivation, as compared to households of other castes and religion.

For solving (or lessening) this graving problem of employment deprivation, we need to consider some ‘structural changes’ and ‘fundamental changes’ during the policy making. Initially while devising a policy for the unemployed, we have to redirected the thinking process towards those who are willing to do the work but yet are not able to attain a suitable job. This section of the society is the least catered society wherein they are deemed as unemployed. These people still aspire to remain in the workforce and contribute to the economy’s growth progress. However, the Government is unable to see them, under the blanket of unemployment and to address the issue

of employment deprivation. The three most common causes of employment deprivation are increasing inequality, increasing unemployment and involuntary job loss situation. To improve this situation, policies need to target at the Micro level and Macro level which will help in enhancing the welfare for both the country and its people.

For targeting the micro level, we intent to focus our policies towards individual/ families in the economy. Continuous and timely increasing investment in human capital can in a way cater to improving the quality of human capital and also imbibing them with new skills required. The impetus should lay in encouraging to conduct training programmes for the employment deprived youth to develop new skills required for the job market in a timely manner. Since India has a lot of productive population, programmes should initiate creating more of labour-intensive jobs with emphasis on skill-based jobs. The central issue is the quantity and quality of employment, and the social and economic processes that drive employment patterns, and the new approaches need to be developed if India's employment problems are to be adequately addressed. (Rodgers. G,2020)

Having a tool for analysing the trend in the employment experience of various households can help in highlighting the social norms of our country. Policies need to strike a balance between the social welfare, duration of unemployment and the unequal distribution of employment gaps. This can be achieved by enforcing appropriate policies which will help in contributing towards the increase in welfare. The setting of an appropriate and clear job – search – match requirements along with honest implementation will benefit the household and its welfare in long run. A better understanding of these patterns can help in modifying the government policies and programs in a way that targets the problems of unemployment and poverty effectively and efficiently.

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