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The Nexus Between Social Mobility and Regional Disparity: Empirical Evidence from India

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Abstract

This article examines the link between regional disparity and social mobility in India. There has been a steady rise in economic inequality in India. The rapid economic growth coupled with a rise in income inequality is a serious concern in India. While the emphasis is on inclusive growth, it appears difficult to tackle the problem without looking at the intricacies of the problem. The Social Mobility Index is an important tool that focuses on bringing long-term equality by identifying priority policy areas in the country. We used a multivariate statistical approach to construct a social mobility index at the regional level by considering several social and economic variables. Our findings show that while the Union Territory of Delhi ranks first in the social mobility index, Chhattisgarh has the least social mobility. From a policy perspective, a comprehensive examination of the determinants of the social mobility index shows that health, education access, and quality, and equity of education are of great importance in improving social mobility. Considering India's potential economic growth resulting from its 'demographic dividend' and improved access, markets, and technology, increasing social mobility through facilitating equal opportunities in society is key to achieving inclusive growth.

Keywords: Social Mobility, Inequality of Opportunity, Economic Inequality, Economic Growth

JEL Classification Code: D63, J62, R13

1. Introduction

Social mobility has extensively been debated in the economics literature over the past five decades (Prais, 1955; Atkinson, 1980; Solon, 1992; Zimmerman, 1992; Chetty et al., 2014; Corak, 2020). Socioeconomic mobility, strictly speaking, refers to a family's ability to progress from one social level to the next. Social mobility is defined in economics as a function of family income, educational attainment, and jobs. Social mobility is frequently seen as a result of equal opportunity. We refer to equality of opportunity as a condition in which an individual's ability to

grow and succeed is totally dependent on her own abilities and efforts. In other words, a parent's social background or economic standing has little bearing on their children's achievement. However, as Black and Devereux (2010) pointed out, the absence of any special bond between parent and child does not imply an ideal condition because it will be perceived as an unusual market structure with no return on human capital investment. From a policy perspective, we are more concerned about whether social mobility has been rising or falling with the improvement in economic progress.

In the context of widening the gap between the poor and the rich in India, an investigation into the degree of social mobility has gained great attention among social scientists in recent years. There are two specific channels through which the degree of social mobility affects economic progress. First, as mentioned earlier, the incidence of more economic inequality tends to impede social mobility (Becker & Tomes, 1979; Corak, 2013). Second, it undermines the effectiveness of public welfare programs aiming to uplift the socially and economically weaker sections of society. The recent Global Social Mobility Index provides several insights into accrued benefits of India from improved social mobility. Constructing a mobility index at the country level appears to be quixotic

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as it does not touch upon the diverse nature of the economy, particularly the glaring rural-urban dichotomy and regional differences in socio-demographic and economic conditions. Therefore, to improve the status of social mobility at the country level, it is important to understand the current status of economic development at the regional level so that appropriate steps can be taken. This study has two specific objectives. First, based on the data compiled from various sources, we aim to construct a comprehensive measure of social mobility, called the social mobility index (SMI). We examine the role of several socioeconomic determinants in predicting social mobility using principal components analysis (PCA). Second, we look at the link between India's economic inequality and social mobility. Existing research, to our knowledge, has mainly ignored the importance of regional differences in determining social mobility and how to enhance the status of social mobility.

The findings of this study show that while Delhi reports the highest social mobility, Chhattisgarh has the least social mobility. Moreover, we find that health and education are the two major factors that can maximize mobility at the national level. The rest of the paper proceeds as follows. Section 2 discusses the relevant data and methodology used in this study. The results of the empirical analysis are illustrated and reported in section 3, followed by conclusions in section 4.

2. Literature Review

A considerable body of research in the economics literature has shown that there exists an inverse relationship between inequality and social mobility (Atkinson, 1980; Solon, 1992; Zimmerman, 1992; Corak, 2013; Chetty et al., 2014; Mishra & Kumar, 2018; Kumar et al., 2002; Corak, 2020). There are two contrasting scenarios of the nexus between inequality and social mobility. The vicious cycle of social mobility states that more inequality in society is less likely to facilitate social mobility as inequality limits the scope of equality of opportunity. In other words, inequality impedes social mobility through transferring the human and social capital of parents to their children. For example, the film industry in India continues to be dominated by a few families for decades.

On the contrary, countries experiencing a virtuous cycle of social mobility are likely to witness more social mobility coupled with low inequality. Essentially, the equality of opportunity paves the way for efficiency and productivity in the labor market by accelerating the growth of human capital investment and utilizing the available resources. Importantly, the equality of opportunity has a positive impact on social mobility and appears to be more realistic than equality of outcomes (Corak, 2020). The transition of economies from a vicious cycle into a virtuous cycle will have significant

implications for economic growth. The theoretical model developed by Becker and Tomes (1979) establishes a clear relationship between inequality and social mobility.

3. Data and Methodology

3.1. Study Area

In this article, based on the size of the population and availability of data, we selected 22 states from 28 Indian states. Following the selection of the states, the screening of each state was performed using a wide range of indicators touching upon almost all major sectors of the economy, including health, education, labor market, and technology and governance structure. These measures have been used in the construction of the Global Social Mobility Index, the World Economic Forum. In this article, we performed the construction of an SMI in four phases: selection of socioeconomic variables, application of a multivariate statistical technique, construction of an index value, and interpretation of results.

3.2. Selection of Variables

Data for constructing SMI come from various sources, including the Reserve Bank of India, the Ministry of Statistics and Program Implementation. A comprehensive measure of social mobility requires inputs comprising several sectors, ranging from health to education. In addition to the level of education, several other factors play a vital role in determining the degree of social mobility. In this article, taking insights from Global Social Mobility Report, we consider 10 key sectors of the economy. These are health, access to education, education quality and equity, lifelong learning, social protection, access to technology, work opportunities, fair wages, working conditions, and efficient and inclusive institutions. We assume that the vast difference across Indian states can be captured by these measures.

Health:

Good health and well-being are the key areas of sustainable development goals adopted by the member nations of the United Nations. Like investment in physical capital, it is increasingly being recognized that the investment in human capital, which primarily comprises education and health, contributes significantly to the production process. High-quality healthcare is an important factor that has a lifelong and lasting impact on employability and therefore on the ability to experience social mobility. We included the following three indicators to assess the overall performance of the Indian states in the health sector.

- **Life Expectancy:** Life expectancy is the average number of years a person is expected to live. Life expectancy is an outcome of several aspects. Among several other factors, the availability of and access to a health care facility is one of the important determinants of life expectancy. Better the health care system, the better the life expectancy would be. According to the latest data, the life expectancy in India is 69 years.
- **Adolescent birth rate:** It is defined as the number of births per 1000 women aged 15 to 19 years. It is nothing but the fertility rate with specific reference to age group. In economics parlance, the adolescent birth rate is an essential indicator for assessing the status of maternal mortality as it is high for adolescent women than older women. Moreover, women with children in their early life are directly responsible for the infant mortality rate. At present, it is estimated at 10.9 in India, less than the global average of 65.
- **Underweight:** Children with low weight for height are generally defined as underweight. Assessing the impact of nutritional imbalance on child mortality risks provides vital evidence on the economic condition of the people prevalent in different Indian states. Children with a severe case of underweight are likely to report a greater risk of death. The main goal of using this indicator is that it measures the access to basic necessities and nutritional status of the population.

Access to education:

India is a young country, and the demand for education has grown exponentially over the last two decades. In addition, India is socially very diverse, comprising many advantaged and disadvantaged social groups. A significant proportion of the workforce in India is employed in the informal sector, which barely provides sufficient wages to lead to a decent standard of living. Therefore, to uplift the socially and economically deprived sections of the society, access to education not only is widely regarded as a vital source of enhancing skills and productivity of the workforce but also plays a key role in improving the overall economic well-being of the country. The gaining of skills and knowledge helps disadvantaged groups to improve their capabilities and productivity in the long run. Access to education is further decomposed into three following indicators: percentage of schools in rural sectors, percentage of dropouts amongst ever enrolled persons in the age group of 3 to 35 years, and mean years of completed education among persons aged 15 years and older.

- **Percentage of schools in rural sectors:** The availability of schools in rural areas is an indicator to

assess access to schools as more than 65 percent of the population lives in rural areas.

- **Percentage of dropouts amongst ever enrolled persons in the age group of 3 to 35 years:** A person, who is ever-enrolled, is dropout if the person is not able to complete the enrolled educational level. This indicator represents the problems people face in completing an educational level in which he/she has enrolled. In other words, it highlights the intrinsic efficiency of educational systems.
- **Mean years of completed education among persons aged 15 years and older:** As a component of access to education, it measures the literacy level of the people in the state.

Education quality and equity:

Along with the growth of the number of educational institutions, it is also recognized that promoting quality education is essential as it provides a platform for individuals to improve their standard of living. As mentioned earlier, schools play an important role in imparting fundamental knowledge, which lays down the foundation of human capital investment. Although the provision of basic facilities such as free education, paves the way for inclusive growth, the difference in the quality of education across Indian states is a serious concern. We identified the following components, which broadly represent the quality of education and gender parity.

- **Primary pupil-teacher ratio:** It is one of the yardsticks to measure educational quality by assessing the number of students per teacher. A low primary pupil-teacher ratio not only enables teachers to interact with their students effectively but also effectively facilitate teaching and learning outcome.
- **Upper primary pupil-teacher ratio:** It ensures a specified student-teacher ratio for upper primary education. It may also highlight any imbalances or deficiencies in teacher postings.
- **Gender parity in higher education:** In India, the difference in participation of men and women in higher education is quite apparent across Indian states. In this article, we use the gender parity index for higher education to measure gender differences in higher education enrolments. This indicator sheds light on women's access to higher education relative to men in the state.
- **Percentage of schools for children with special needs (CWSN):** According to the 'State of the Education Report for India: Children with Disabilities, a report published by UNESCO in 2019, children with disabilities constitute about 1.7 percent of the total

child population. About 75 percent of the children with disabilities at the age of five are attending any educational institutions in India. An inclusive education system covers all sorts of children, including children and youth with disabilities. Hence, this component highlights the progress made by states to improve the enrollments of children with disabilities.

Lifelong learning:

In the current era of rapid technological change, it is critical that human capital development remains a lifelong endeavor, with learning made simple and accessible through the creation of appropriate facilities and skills. The following three components of lifelong learning are further broken down.

- Percentage of persons aged 5 years and above having the ability to operate computers: With the advancement in information and communication technology, computers are commonly used in day-to-day learning activities. Therefore, it is imperative to have the ability to use it daily. This indicator measures such capabilities across Indian states.
- Percentage of persons aged 5 years and over with the ability to access the internet: India has witnessed a resurgence of demand for the Internet, particularly in the rural sector due to the penetration of personal computers and low cost of internet access. Since the internet is one of the vital sources of all sorts of information, entertainment, knowledge, and educational content, it has significantly improved economic opportunities through easy access.
- Distribution per 1000 to persons aged 15 years and above who have undergone vocational training: The role of vocational education in economic growth is well-recognized. In addition to imparting skills and training, vocational training prepares job-seekers to reap employment opportunities available in the formal sector.

Technology access:

By technology access, we mean the level of technology accessible to the population. It has significant implications for creating equitable economic opportunities and developing human capabilities (Doan, 2021). In other words, access to technology has the potential to serve as an equalizer against inequalities by sharing information equally with all sections of society (Nguyen, 2021; Nguyen & Pham, 2021). To examine the impact of technology access on social mobility, we consider three components: rural population with access

to electricity, households with a personal computer, and households with internet access.

- Percentage of rural population with access to electricity: A significant number of people living in the rural sector do not have access to electricity, which is one of the necessities. Access to electricity is indispensable for a basic standard of living and other activities. For instance, as an input, it facilitates economic activities and thereby promotes economic development.
- Percentage of households with computer facilities: The significance of households having computer facilities reflects the willingness to adopt information and communication technology (ICT). Computer, in general, is important for performing routine organizational work in various institutions. In recent times, the COVID-19 pandemic has made its need even more urgent.
- Percentage of households with internet access: The number of internet users has witnessed exponential growth over the last decade. The World Bank suggests that a 10 percent increase in internet use is likely to increase the economic growth of a country by 1.2 percent. Considering the benefits of digital technology, it has become imperative to have Internet access in every household. Unfortunately, unequal distribution of access to digital platforms such as the internet across Indian states is a cause of concern.

Work opportunities:

Work opportunities measure the ability of the economy to provide work to all who want to work, irrespective of their socio-economic backgrounds. India's demographic dividend is a blessing to the country's goal of achieving a US\$ 5 trillion economy by 2025. The serious issue of protracted unemployment among the educated youth results from their inability to convert educational attainment into a labor market outcome.

- Unemployment for postgraduate and above: In a typical labor market structure, postgraduate and above is considered is the highest level of education and sufficient to get suitable employment under normal circumstances. However, if there is large unemployment at this level, it indicates a gap between labor market requirements and institutional education.
- Unemployment in rural areas per 1000: The rural sector plays a crucial role in augmenting demand for both durable and non-durable goods produced in the economy. Attention to the rural sector is more

important as the availability of jobs in villages is less and people are generally dependent on agricultural activities. If the rural sector is witnessing high unemployment, it shows the need for generating non-farm activities along with revising farm activities.

- Percentage of female labor population ratio aged 15 years and above: Despite an impressive economic performance, the female labor force has declined steadily in India. Interestingly, the percentage of women engaged in various economic activities varies significantly. From a pragmatic point of view, if women are able to participate in the labor market, it points towards an open and productive society.

Fair wages:

Fair wages are defined as the minimum wages that are sufficient and essential for a decent standard of living. The ability of an economy to provide fair wages depends on several factors such as regulatory framework on minimum wage and cost of standard of living. We use the indicator of low wages as its proxy. We consider the following two components to understand the status of fair wages.

- Percentage of taxpayers: More taxpayers in the state means a smaller number of workers at the lower level, which indicates a fair wage rate in the state.
- Sum total of average wage earnings: It compares the average wage income of different states in the country. The low average wage of any state as compared to other states indicates an unfair wage rate in the state.

Working conditions:

Working conditions have been defined in several ways. The Factories Act, 1948 clearly describes several provisions related to workers' working conditions, including working hours, eligible leaves, overtime payment, job contract, and safety and security. Strict adherence to these provisions demonstrates the ability of an economy to provide good working conditions to all workers. Under the various provisions of working conditions, we consider three following components that represent the market condition of workers' working environment.

- The aggregate of averages worked more than 48 hours: As per the Factories Act 1948, the weekly working hours are limited to 48 for an adult worker. In other words, the act mandates that an employee is eligible for overtime wage if the working hours are beyond 48 hours in a week.
- Percentage of regular salaried employees without pay leave: As per the Indian employment law, employees

are eligible for a minimum of 15 days of annual paid leaves. The condition of salaried employees without pay leave reflects not only the penurious working condition of employees but also their denial of the right to live with human dignity.

- Percentage of regular salaried employees without a job contract: One of the salient features of the job contract is that it lays down most of the terms and conditions such as appointment, nature of work, emoluments, and termination procedures. Issuance of a job contract avoids all sorts of employment-related disputes and maintains a healthy relationship between employer and employees during the tenure.

Social protection:

Social protection is intended to safeguard not only employees from external shocks but also the interests of the elderly and low-wage workers who are barely able to make ends meet. Informal workers account for roughly 94% of the entire labor in the country. Basic and economic security are two of the most important forms of social protection. Basic social security appears to be critical in determining the quality of work as a primary and necessary entitlement.

- Percentage of regular salaried employees without social security benefits: It calculates the percentage of employees in each state who do not receive social security benefits.
- Percentage of households with any usual member covered under the health scheme: Health insurance is the basic necessity in today's life as it is becoming difficult to stay healthy. This indicator measures the percentage of households with a health plan.

Efficient and inclusive institutions:

Indian society is quite diverse- be it socially or culturally. An efficient and inclusive institution not only provides fair and equitable access to its justice system and institutions but also safeguards the interests of the historically marginalized and disadvantaged groups. To examine the impact of efficient and inclusive institutions on social mobility, we consider the following three indicators under the efficient and inclusive institutions: crime against Scheduled Tribes (STs) and Scheduled Castes (SCs), persons with disabilities, and gross enrolment in higher education for SC/STs.

- Rate of total crime against Scheduled Tribes (STs) and Scheduled Castes (SCs): These are the most backward class in India. This indicator compares the crime rate against them in the state.
- Percentage of persons with disabilities of 15 years and above have the highest level of education: The

availability of higher education to persons with disabilities is a clear indication of an inclusive system of education.

- Gross enrolment ratio (GER) in higher education for SC/STs: Gross enrolment ratio is a widely used measure for detecting the status of educational attainment in a country. The enrolment of SC/STs in higher education reflects the efforts undertaken by governments to uplift socially excluded groups, indicating an inclusive society.

3.3. Normalisation of Data

As mentioned earlier, the main goal of this paper is to construct a comprehensive measure of social mobility, called the social mobility index. Considering the identification of variables, we used all the above-mentioned components to construct the SMI. As mentioned earlier, principal components analysis (PCA) was applied to measure the factor loadings and their respective weights. Each component is uncorrelated.

All components were normalized before PCA was applied using the following two formulas:

$$\text{The normalized value for positive components} = \frac{\text{Observed value} - \text{Min value}}{\text{Max value} - \text{Min value}}$$

$$\text{The normalized value for negative components} = \frac{\text{Max value} - \text{Observed value}}{\text{Max value} - \text{Min value}}$$

3.4. Assignment of Weights to Variables

The paper adopts a PCA-based approach to assign weights to the components as suggested by Kumar et al. (2017). As shown in Table 1, we selected eight out of 31 components for the assignment of weights to the individual component whose eigenvalue was greater than one and which explained 85 percent of the variation. The following formula was used to compute the weights for each component:

$$W_i = \sum |L_{ij}| E_j$$

where,

W_i is the weight of i^{th} indicator; E_j is the eigenvalue of the j^{th} factor; L_{ij} is the loading value of the i^{th} state on j^{th} factor; $i = 1, 2, 3, \dots, 31$ components; $j = 1, 2, \dots, n$ principal components (PCs).

3.5. Composite Indexing and Categorisation

Following the assignment of weight to variables, we use the following formula to construct the SMI:

$$I_{\text{State}} = \frac{\sum_{i=1} X_i W_i}{\sum_i W_i}$$

where,

I is the index of each state; X_i is the normalized value of i^{th} indicator; W_i is the weight of i^{th} indicator.

After generating the index for each state, the SMI scores were used to classify the states into three categories. The three categories are as follows: states with high social mobility have a value of 0.561 and above in the 75th percentile and above, states with moderate social mobility have a value between 0.260 and 0.561, which is between the 25th and 75th percentile, and states with low social mobility have a value below 0.260 and the 25th percentile.

4. Results and Discussion

4.1. Constructing SMI

Using the above methodology, the SMI was constructed for the 22 Indian states. Table 2, which presents the score of SMI, category of social mobility, and ranking for the Indian states, shows that the minimum and maximum scores of SMI range between 0.195 and 0.853. While Chhattisgarh reports the lowest SMI score, New Delhi, the National Capital Territory, has the highest score of SMI. A careful examination of the SMI scores of different states shows that there are considerable variations in the SMI score across Indian states. Moreover, five Indian states –New Delhi, Himachal Pradesh, J and K, Kerala, and Uttarakhand- fall under the category of high social mobility. The sample states are divided into six regions for analysis: northern, north-eastern, eastern, central, western, and southern. An analysis of Indian states by region reveals that almost all of the country's eastern states and the majority of its central states have low social mobility. Except for Uttar Pradesh, BIMARU, an acronym established by Ashish Bose in the early 1980s to denote Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh's poor demographic position, similarly reports limited social mobility.

Based on the PC factor loading value, we observed that health, access to education, quality, and equity have the highest weightage in the index. Hence focusing on these parameters seems more crucial at the aggregate level to improve social mobility in India. Data also suggest that all the states with high social mobility perform well in these areas, as shown in Table 3. We also observe that there is a positive relationship between economic development and social mobility. For instance, states with high social mobility fall under the category of highly developed and medium developed. While social mobility is low in all the less

Table 1: Factor Loadings of Related Major Components

Variables	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Comp7	Comp8
Life Exp	0.247	−0.016	0.043	0.194	−0.048	−0.05	0.046	0.168
ADB	0.196	0.081	−0.011	−0.225	0.281	−0.165	−0.029	−0.16
UW	0.245	−0.117	0.148	−0.08	−0.132	0.018	0.122	−0.007
RUSCH	−0.134	−0.035	0.317	−0.203	−0.177	−0.166	0.087	0.042
DRPOU	0.159	0.198	−0.033	−0.363	0.129	0.088	−0.07	−0.288
MEDU	0.265	0.132	−0.097	−0.149	0.043	0.125	−0.105	0.074
GEPAR	0.226	0.114	0.182	−0.05	0.103	−0.213	0.228	−0.041
CWSN	−0.095	0.317	−0.055	−0.243	0.077	−0.17	0.339	0.266
PUPMY	0.15	−0.382	0.115	−0.045	0.159	−0.094	−0.064	0.02
PUPUP	0.147	−0.308	0.128	−0.092	0.219	−0.066	−0.327	0.102
COMF	0.255	0.135	−0.131	0.177	−0.026	−0.08	−0.018	−0.079
RUREL	0.221	−0.292	−0.125	−0.006	−0.012	−0.079	−0.006	0.011
INTFAC	0.277	0.088	0.049	0.031	0.111	−0.119	−0.053	−0.084
ABUIN	0.293	0.087	−0.035	0.077	−0.036	−0.049	−0.066	−0.019
OPCOM	0.28	0.078	−0.102	0.102	−0.112	−0.122	−0.051	0.06
VOCTR	0.163	0.057	0.138	0.071	−0.196	−0.376	0.221	0.317
UNPG	−0.159	0.171	−0.061	0.39	−0.005	−0.029	−0.103	−0.142
UNRUR	−0.065	−0.114	−0.285	0.109	0.385	0.221	0.274	−0.007
FERUR	0.042	−0.342	−0.206	−0.123	0.076	0.217	0.233	0.085
SSB	−0.008	0.149	0.289	0.022	0.019	0.394	−0.153	0.231
HEAIN	0.011	−0.27	−0.184	−0.175	−0.406	−0.005	0.15	0.054
CRST	0.121	0.163	0.143	0.066	−0.358	0.176	−0.017	−0.197
CRSC	0.162	−0.282	0.131	0.248	−0.146	0.075	−0.086	−0.127
DISHIG	0.247	0.171	−0.095	0.194	0.115	0.13	−0.091	−0.104
GERHC	0.171	−0.006	−0.278	−0.133	−0.227	0.272	−0.059	0.24
GERHT	0.155	0.148	−0.108	−0.329	−0.242	0.279	0.057	−0.125
WORM	0.131	−0.039	−0.16	0.155	0.075	−0.044	0.496	−0.269
WPAIL	0.137	−0.005	0.265	0.244	0.023	0.318	0.269	0.226
WJOCO	0.005	0.001	0.355	0.052	0.085	0.266	0.302	−0.17
TAXPA	−0.018	0.144	−0.331	0.211	0.001	−0.025	−0.055	0.364
AVGWA	0.137	0.073	0.147	−0.121	0.303	0.121	−0.03	0.384

Table 2: Social Mobility of India Index Ranking

State	SMI	Category of Social Mobility	Rank	Region
Andhra Pradesh (AP)	0.252	Low	19	Southern
Assam (A)	0.352	Medium	12	North-eastern
Bihar (B)	0.260	Low	17	Eastern
Chhattisgarh (C)	0.195	Low	22	Central
Delhi (D)	0.853	High	1	Northern
Gujarat (G)	0.321	Medium	13	Western
Haryana (H)	0.548	Medium	6	Northern
Himachal Pradesh (HP)	0.642	High	3	Northern
J and K (J&K)	0.602	High	5	Northern
Jharkhand (J)	0.282	Low	14	Eastern
Karnataka (Ka)	0.360	Medium	11	Southern
Kerala (K)	0.746	High	2	Southern
Madhya Pradesh (MP)	0.213	Low	20	Central
Maharashtra (M)	0.513	Medium	8	Western
Odisha (O)	0.211	Low	21	Eastern
Punjab (P)	0.522	Medium	7	Northern
Rajasthan (R)	0.260	Low	16	Northern
Tamil Nadu (TN)	0.450	Medium	9	Southern
Telangana (T)	0.403	Medium	10	Southern
Uttar Pradesh (UP)	0.275	Medium	15	Central
Uttarakhand (U)	0.633	High	4	Central
West Bengal (WB)	0.255	Low	18	Eastern

Table 3: Best Performing States and their Areas

State	Area of Best Performance
Delhi	Health, technology access, inclusive institutions
Himachal Pradesh	Education access
J and K	Health, education quality and equity, working conditions
Maharashtra	Work opportunities
Kerala	Health, education quality and equity, life-long learning
Tamil Nadu	Social protection
Uttarakhand	Education access

developed states. A close examination of all the components at the state level indicates that health, lifelong learning, and inclusive institutions are key components for improving social mobility in moderately developed states. Access to technology is found to be an additional factor required for less developed states. Social protection and working conditions are the two essential components to improve social mobility.

We attempt to identify factors explaining low social mobility in Indian states. We discovered that states with a high population density and low economic conditions have a high adolescent birth rate. States like Assam, Bihar, and West Bengal, for example, have high adolescent birth rates. Poverty is the most significant cause for early marriage, which is a key promoter of teenage pregnancies in India, as stated by

Otoo-Oyortey and Pobi (2003) and Paul (2019). It obstructs women's development and health. Furthermore, these states have a larger incidence of stunted, wasted children under the age of five as a result of maternal malnutrition. India has just launched the POSHAN Abhiyaan scheme, which attempts to address malnutrition among children, pregnant women, and breastfeeding mothers as a policy response. The initiative was launched in 2017 with the goal of attaining food security and improved nutritional levels, in accordance with the UN-mandated Sustainable Development Goals (SDGs). In addition, West Bengal, Rajasthan, and Madhya Pradesh are among the states with the worst performance in terms of inclusive institutions.

We did find, however, that even developed states are weak in several areas. Surprisingly, states with a limited level of social mobility fare better. As previously indicated, states with little social mobility, like West Bengal, Chhattisgarh, and Madhya Pradesh, have higher female labor force participation and employment rates than other states, and hence do better in terms of job chances. Similarly, the percentage of families covered by health insurance is greater in Andhra Pradesh and Chhattisgarh. When looking at the overall performance of the health sector, these states do not meet expectations. The data show that having health insurance does not always imply better health care. It also has the greatest percentage of workers who do not receive social security payments (SSB). Dropout rates are lower in Uttar Pradesh and Punjab, which have low and moderate socioeconomic mobility, respectively. Similarly, Bihar has little social mobility, despite improvements in access to education in the rural sector, which accounts for about 90% of the population.

Kerala, on the other hand, has a lower percentage of schools in rural areas and greater dropout rates than other states, notwithstanding its significant social mobility. Odisha, interestingly, has a high dropout rate while having a high school enrollment rate. These findings clearly show that increased enrollment and school access do not translate into higher educational quality, resulting in fewer persons finishing their school and, as a result, fewer total average years of education. This clearly demonstrates the inequalities in social mobility amongst Indian states. The relationship between inequality and social mobility in the country is examined in the next section.

4.2. A Trade-off between Inequality and Social Mobility

Many scholars have noted that income inequality in developing economies, particularly India, has been rising coupled with the expansion of economic activities (Dreze & Sen, 2011; Chancel & Piketty, 2017; Atkinson et al., 2017).

A major impact of rising inequality is that it tends to reduce opportunities available for future generations. Empirically, evidence of a strong relationship between inequality and intergenerational mobility has already been established in the economics literature (Corak, 2013). If a country has a high degree of economic inequality, it is likely to have lower levels of intergenerational mobility. This relationship is commonly illustrated as the Great Gatsby Curve (GGC).

On the horizontal axis, the GGC plots the Gini Coefficient, and on the vertical axis, the intergenerational income elasticity, which measures the elasticity between paternal income and his adult son's income (Corak, 2013). Social mobility tends to be low when intergenerational income elasticity is high, and vice versa. The GGC curve is an upward-sloping line, demonstrating that increasing inequality impedes social mobility by unequally dividing economic progress possibilities among future generations (Ferreira, 2001). We aim to analyze whether social mobility is connected with inequality, as assessed by the Gini coefficient, using insights from the Great Gatsby Curve research.

As shown in Figure 1, the plot of inequality and social mobility indices shows no evidence of the relationship between economic inequality and social mobility in the context of Indian states. Although the degree of social mobility differs considerably across Indian states, inequality alone does not account for the social mobility in Indian states.

In this study, we hardly provide any empirical evidence to support the relationship between inequality and social mobility. As a result, we attempt to investigate the uncertain relationship between these two variables in various Indian states. Table 4 depicts different circumstances in India, indicating that great social mobility coexists with both low and high inequality. For example, whereas Delhi has great social mobility due to low inequality, states like Himachal Pradesh, Kerala, and Uttarakhand have high social mobility but higher inequality. Increased inequality mixed with a high degree of social mobility is generally acceptable from the standpoint of society. As a result, this study strengthens the conclusion that inequality and social mobility are local phenomena that require regional research (Shroder, 2001).

Furthermore, greater social mobility in the most unequal regions may be linked to inequality as a result of the rapid expansion of the upper quartile of the income distribution, which has to be examined further. Apart from that, we believe that other factors, such as the complicated caste structure and its link to economic prospects, are to blame for the mixed results. When a country lags behind in terms of human growth and social transformation, such variables play a significant impact. It's worth noting that BIMARU states have low social mobility in combination with significant economic inequality.

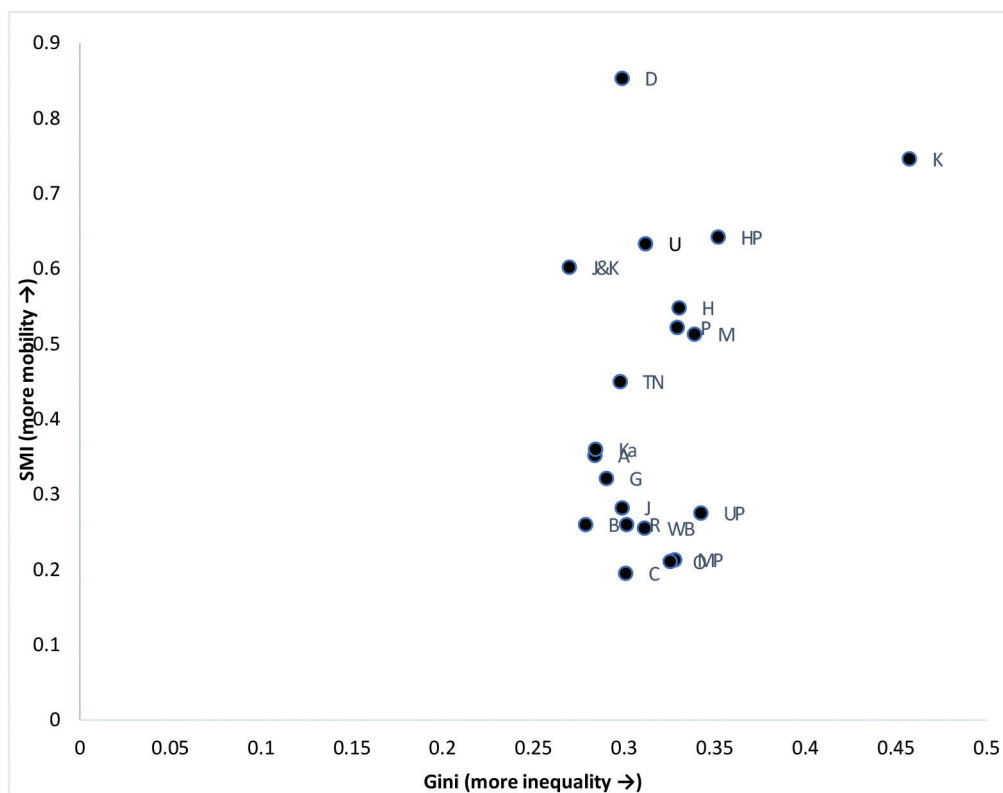


Figure 1: Inequality Versus Social Mobility

Source: The Gini coefficient of consumption expenditure distribution is derived from the estimates of the Planning Commission, Government of India using the 66th round of NSS. We consider below 0.30 as low-income inequality and above as high-income inequality.

Table 4: Different Scenarios Existing Between Social Mobility and Economic Inequality

Basis	States
• High social mobility and low inequality	Delhi, J&K
• High social mobility and higher inequality	Himachal Pradesh, Kerala, Uttarakhand
• Medium social mobility and low inequality	Assam, Gujarat, Jharkhand, Karnataka, Tamil Nadu
• Medium social mobility and high inequality	Haryana, Maharashtra, Punjab, Uttar Pradesh
• Social immobility and less inequality	Bihar, Chhattisgarh
• Social immobility and higher inequality	Madhya Pradesh, Odisha, Rajasthan, West Bengal

5. Conclusion and Implications

In this article, we attempted to construct a comprehensive measure of social mobility by considering a wide range of factors explaining the status of economic development. For this, we considered 22 major Indian states based on the size of the population and geographical area. Similar to the human development index (HDI), each state was given an index value to examine the status of social mobility. The application of the PCA-based approach validated the socio-demographic and economic indicators used in the construction of this index. The indicators were sourced from the recently published Global Social Mobility Report by the World Economic Forum. Taking insights from this report, we used 10 following components: health, access to education, education quality and equity, lifelong learning, social protection, access to technology, work opportunities, fair wages, working conditions, and efficient and inclusive

institutions. An examination of the SMI across Indian states shows that Delhi ranks first in terms of social mobility, followed by Kerala (2nd), Himachal Pradesh (3rd), and Uttarakhand (4th), and Jammu and Kashmir (5th). These findings indicate that the top-ranked states are quite sound in terms of providing opportunities to grow irrespective of one's social background. Our investigation on the relationship between economic inequality and social mobility reveals that there is no clear link between the two. Future research could look into the possible explanations for the lack of a link between these two factors.

We discovered that health, access to school, education quality, and equality are the most important determinants in enhancing social mobility among the ten components. Several economists have argued that investing in human capital is critical for enhancing social mobility and development. Given India's potential economic growth and the country's 'demographic dividend,' promoting social mobility by facilitating equal opportunities in society is critical to achieving inclusive growth. We must focus on small and medium enterprises (SMEs), which are a major source of employment generation in the country, as well as skill development, to increase the degree of social mobility.

These are primarily inefficient, low-skilled, and rural-based industries. Improving the skills and productivity of unorganized workers will aid in the integration of the unorganized sector into the organized sector, providing employees with job security and social security benefits. At the same time, a lot of socioeconomic disparities, particularly the ability to invest in human capital, lead to more parity between parent and child. This circumstance necessitates the government's active involvement in promoting welfare programs.

References

- Atkinson, A. B. (1980). On intergenerational income mobility in Britain. *Journal of Post Keynesian Economics*, 3(2), 194–218. <https://doi.org/10.1080/01603477.1980.11489214>
- Atkinson, A. B., Hasell, J., Morelli, K., & Roser, M. (2017). *The chartbook of economic inequality*. <https://www.chartbookofeconomicinequality.com/inequality-by-country/India/>
- Becker, G. S., & Tomes, N. (1979). An equilibrium theory of the distribution of income and intergenerational mobility. *Journal of Political Economy*, 87(6), 1153–1189. <https://doi.org/10.1086/260831>
- Black, S., & Devereux, P. (2010). Recent developments in intergenerational mobility. *National Bureau of Economic Research*, 15, 89. <https://doi.org/10.3386/w15889>
- Chancel, L., & Piketty, T. (2017). Indian income inequality, 1922–2015: From British Raj to Billionaire Raj? *The Review of Income and Wealth*, 65(S1), S33–S62. <https://doi.org/10.1111/roiw.12439>
- Chetty, R., Nathaniel, H., Patrick, K., Emmanuel, S., & Nicholas, T. (2014). Is the United States still a land of opportunity? Recent Trends in Intergenerational Mobility. *American Economic Review*, 104(5), 141–47. <https://doi.org/10.1257/aer.104.5.141>
- Corak, M. (2013). *Inequality from generation to generation: The United States in comparison* (IZA Discussion Paper No. 9929). Bonn, Germany: Institute for the Study of Labor. <https://ftp.iza.org/dp9929.pdf>
- Corak, M. (2020). Intergenerational mobility: What do we care about? What should we care about? *Australian Economic Review*, 53(2), 230–240. <https://doi.org/10.1111/1467-8462.12372>
- Doan, T. T. T. (2021). The effect of perceived risk and technology self-efficacy on online learning intention: An empirical study in Vietnam. *The Journal of Asian Finance, Economics, and Business*, 8(10), 385–393. <https://doi.org/10.13106/jafeb.2021.vol8.no10.0385>
- Dreze, J., & Sen, A. (2011). *Putting growth in its place*. Outlook India. <https://www.outlookindia.com/magazine/story/putting-growth-in-its-place/278843>
- Ferreira, F. H. G. (2001). Education for the masses? The interaction between wealth, educational and political inequalities. *Economics of Transition and Institutional Change*, 9(2), 533–552. <https://doi.org/10.1111/1468-0351.00087>
- Kumar, R S A., Sendhil, R., Singh, S., Verma, A., Venkatesh, K., & Gupta, V. (2017). *Data analysis tools and approaches in agricultural sciences*. Karnal, Harayana: ICAR-Indian Institute of Wheat and Barley Research.
- Kumar, S., Heath, A., & Heath, O. (2002). Determinants of social mobility in India. *Economic and Political Weekly*, 37(29), 2983–2987. <https://www.jstor.org/stable/4412376>
- Mishra, A. K., & Kumar, A. (2018). What lies behind income inequality and income mobility in India? Implications and the way forward. *International Journal of Social Economics*, 45(9), 1369–1384. <https://doi.org/10.1108/IJSE-03-2017-0119>
- Nguyen, H. T. (2021). Financial development, income inequality and the role of Democracy: evidence from Vietnam. *The Journal of Asian Finance, Economics, and Business*, 8(11), 21–29. <https://doi.org/10.13106/jafeb.2021.vol8.no11.0021>
- Nguyen, P. T., & Pham, T. T. T. (2021). The Impact of financial development on economic growth: Empirical evidence from transitional economies. *The Journal of Asian Finance, Economics, and Business*, 8(11), 191–201. <https://doi.org/10.13106/jafeb.2021.vol8.no11.0191>
- Otoo-Oyortey, N., & Pobi, S. (2003). Early marriage and poverty: Exploring links and key policy issues. *Gender & Development*, 11(2), 42–51. <https://doi.org/10.1080/741954315>
- Paul, P. (2019). Effects of education and poverty on the prevalence of girl child marriage in India: A district-level analysis. *Children and Youth Services Review*, 100, 16–21. <https://doi.org/10.1016/j.childyouth.2019.02.033>

- Prais, S. J. (1955). Measuring social mobility. *Journal of the Royal Statistical Society. Series A (General)*, 118(1), 56–66. <https://doi.org/10.2307/2342522>
- Shroder, M. (2001). Moving to opportunity: An experiment in social and geographic mobility. *Cityscape*, 5(2), 57–68. <https://doi.org/10.1516/41.cs.2001.05.02.5768>
- Solon, G. (1992). Intergenerational income mobility in the United States. *The American Economic Review*, 21(8), 393–408. <https://www.jstor.org/stable/2117312>
- Zimmerman, D. J. (1992). Regression toward mediocrity in economic stature. *The American Economic Review*, 82(3), 402–429. <https://www.jstor.org/stable/2117313>