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# ODISHA ECONOMIC JOURNAL

*(Formerly Orissa Economic Journal)*

ODISHA ECONOMIC ASSOCIATION
Bhubaneswar

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The journal considers empirical and theoretical research contributions in the field of economics and development studies under the following categories of manuscript:

- Research Articles
- Book Reviews/Review Articles
- Research Notes/Commentaries
- Latest Issue/Policy Centric Database

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## Journal of the Odisha Economic Association

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Odisha Economic Journal expresses sincere gratitude to the following experts for their comments, suggestions and recommendations on draft papers:

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## Editorial

The opening article of this issue of the *Odisha Economic Journal* is the Presidential Address (delivered by Jugal Kishore Mohapatra) at the most recent 56th Annual Conference of the Odisha Economic Association held at Sambalpur University. This broadbrush lecture discusses influences of global events including climate change, the COVID-19 pandemic and armed conflicts between certain nations on national and subnational economies, their trade in particular and concerned policies. The lecture engages with the eventual rise of disruptive technologies, as artificial intelligence, and their likely impact on jobs, institutions and sustainability. That calls for a renewed and complex role for economists to observe changes and proffer policy ideas.

The following article (by Nilakantha Rath) is essentially the text of the speech on his accepting the first Lifetime Achievement Award conferred by the OEA on this very distinguished scholar. Reminiscing apart, the speech draws attention to the salience of logic and carefully-analysed empirical evidence in economics teaching as well as development decision making. The author makes a case for strengthening the rural-agrarian economy through mainly public investment in infrastructure and developing responsive institutions at the local level. The article also expresses concern over the rise of the corporates - domestic and foreign - those stymie the role of a democratic state in a developing economy.

In a rather lengthy article (by Alok Kumar Mishra) a detailed analysis has been carried out to find ways to enhance municipal financing that would ensure inclusivity. With failing financial health of urban local bodies and falling autonomy this article argues for reforms in municipal finance by discrete expenditure categories underscoring the need for applying user charges and the benefit principle of taxation. The analyses draw upon cases of major municipal corporations (Mumbai, Bengaluru and Hyderabad) as also emerging ones (Bhubaneswar and Thiruvananthapuram).

Analysing data from the World Enterprise Survey another article (by Ruchi Gupta and Bhanu Pratap Singh) evaluates if and how firm performance is influenced by such variables as capacity utilization, annual sales, labour productivityand employment growth. The study observes that access to capital

and business climate indicators influence firm performance but vary across firm size. In particular, the share of fixed assets financed externally positively impacts firm performance. Investment climate factors including low level of professional management and the type of technology affect firm performance; these are more obvious in small firms which lack resources to invest in upgradation.

As a healthy break from sectoral/economistic studies the article (by Siddharth Satpathy) takes us back in time to the *long* eighteenth century where bazaars (markets) had started to capture both physical spaces and literary imaginations in Odisha. Delving into narratives – as in the folk genres of *boli* and *katha* - on the bazaar this rather unusual study it argues that a discursive trend to envision a social body around the pursuit of discreet social status via the tasteful practice of consumption, around the language of transactional agreeability could be traced in these literary expressions.

With digitalisation on the rise, there have been deeper impacts on the labour markets not only in India, but globally. While there is a strong possibility of job loss in response to automation, new areas of work also emerge. The article (by Abhishek Singh and Karuna Shanker Kanaujiya) examines the long-term association between digital transformation and employment in the Indian context. This largely empirical study points to the likelihood increasing scope for new jobs as digitalisation grows responding to policy changes.

With platform economy taking roots in India, the article (by Manish Kumar Mishra and Sudeep Basu) enquires into the changing business strategy of Zomato, the largest food-tech company in urban India. As demand for such services grew rapidly the company improved its financial viability and attracted new investments as well. As the study shows, while corporatisation of urban food supply chains has benefitted the organised players those operating in the informal domain have largelybeen unable to join the growth momentum.

With a focus on enhancing nutritional wellbeing and access in marginalised regions the article (by Prasant Kumar Behera and Subashis Behera) emphasizes the vital role played by diversified agriculture. Considering the issue of agricultural diversification across districts of Odisha it points to the little progress

made in coastal regions in this sphere. This study focuses on nutritionally burdened districts of the state and explores potential pathways connecting diversified agriculture with nutritional health.

The last article (by Simran Sethi and Ananya Ghosh Dastidar) analyses both the Good Governance Index and the SDG Index constructed by NITI Aayog to examine the role of governance in achieving the SDGs at the state level in India.The empirical findings indicate that mere high-income levels do not automatically ensure better governance. The role of the state in improving governance at the subnational level is essential for attaining SDGs.

The research note (by Laxmikanta Gual and Amarendra Das) in this issue engages with the policy options as between the effectiveness of Regional Development Councils or Aspirational Block Development Councils in addressing chronic regional disparities as observed in the context of Odisha.

The book reviewed in this issue (by Pratik Kumar Singh) is about inclusive urbanisation in India.

***Keshab Das***
Editor-in-Chief,
*Odisha Economic Journal*

*Article*

# Economists in an Uncertain World

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**Jugal Kishore Mohapatra**

The World is currently navigating through a turbulent period, which can be arguably described as what Acemoglu and Robinson (2012: 116) have aptly referred to as a "critical juncture" in their highly acclaimed and well-researched book *Why Nations Fail*. A critical juncture in economic history, according to them, is "a major event or confluence of factors disrupting the existing economic or political balance in a society". How nations respond to these epochal events or confluence of factors has a decisive bearing on their future trajectory. The major theme of this year's Annual Conference of the Odisha Economic Association has to be viewed in this context and perspective.

Ever since Frank Knight enlightened us regarding the subtle, but significant difference between risk and uncertainty, the discipline of Economics has struggled to develop credible models to analyse their impact both at the micro and macro level. At the current critical juncture, the World is confronting three major uncertainties simultaneously. First, the spectre of Climate change is looming large over the planet Earth. Although climate science has deepened our understanding regarding how planetary health, lives and livelihoods are likely to be impacted, there remain a large number of unsettled issues of concern about which there is inadequate clarity and lack of consensus even among the scientists. In this scenario of haziness, quite predictably the global leaders are sailing in a realm of "unknown unknowns" and unable to embark on decisive action, even after commitments made in the successive COPs, to limit the speed and scale of climate change "to avoid condemning the humanity to a dystopian future". How can we mitigate the emerging effects of climate change and equip the most vulnerable communities to adapt and cope with its

President, Odisha Economic Association (2023-24).

Presidential address to the 56th Annual Conference of the Odisha Economic Association

debilitating impact? How do we ensure sustainable growth that is inclusive and equitable? How do we evolve global consensus on "climate justice" and facilitate"just economic transition" in the less developed countries of the global South adhering to the core principle of 'common but differentiated responsibility'?

Let me also add here that when we are discussing sustainable growth, we should not narrowly focus on GDP growth. To my mind, sustainable growth has at least four distinct pillars. First, the economic growth that we are targeting has to be fiscally sustainable in the long term. Second, the process of growth has to be socially sustainable, which means that the benefits of growth have to be equitably shared, narrowinghas to be equitably shared, narrowing down inequalities across social classes and geographical regions. Third, unlike in the past, we can not afford to pursue conventional, high-carbon growth strategies. We need to make a transition to a low-carbon, environmentally sustainable growth path. Otherwise, we would be seriously jeopardising 'intergenerational equity', to the detriment of our future generations. Institutional sustainability constitutes the fourth pillar of sustainability. This dimension of sustainable growth perhaps does not receive as much attention as it should in the debates and discourse on sustainable growth.In this context, we should recall the distinction between "inclusive" and "extractive" political and economic institutions and how the basic nature of these institutions shapes the course of the economic history of nations. As Acemoglu and Robinson (2012: 109) persuasively argued in the book I have referred to earlier "even though extractive institutions generate some growth, they will usually not generate *sustained economic growth*"(emphasis added). This conclusion is based on a careful analysis of five hundred years of economic history across the globe since the first industrial revolution.

The second major source of uncertainty emanates from unpredictable geopolitical and geostrategic events that have plunged the world into unforeseeable turbulence, volatility and instability. These conflicts not only have short-term economic impacts not confined to the specific regions alone but across the globe; their potential long-term consequences are even more worrisome. In the long run, the persistence of regional conflicts of this nature might even upset the settled, multi-lateral world order that has prevailed over

the past seventy years, rendering the UN systems and post-Bretton wood institutions virtually toothless to restore a stable equilibrium. Just as the World was recovering from the disastrous economic effects of the 2008 financial crisis and the unprecedented Covid-19 pandemic that took a toll of estimated 5 million human lives, humanity was confronted with a major war between an ageing, albeit unpredictable superpower armed with a huge nuclear arsenal and unbridled political authority and a small European nation on its border that has displayed remarkable audacity not to cave in. Though most people thought this war would subside in a few weeks, it has raged for nearly two years, with no signs of abatement. It has been converted to a proxy war between Russia and the NATO alliance, backed by the military might of the USA. Had anyone foreseen this two years back? As if this was not enough, just a few months back another geopolitical event of this nature in the Middle East has thrown the world into turmoil. Who could have predicted that an outfit like Hamas would carry out a daring attack deep inside Israel that dodged its much-vaunted intelligence and espionage apparatus? This has triggered a military action that is now threatening to escalate a much larger regional conflict.

These geopolitical events have severely disrupted supply chains and international trade. In particular, three fall-outs of these conflicts are concerning. First, the Ukraine war has adversely impacted the global trade in wheat and edible oil,which has enhanced food insecurity in less developed countries. Second, prices of oil and gas have substantially risen in the import-dependent countries, both the global south and the global north. Together with food price inflation, this has fuelled a full-blown "cost of living crisis" causinglarge-scale anger and disaffection among the less affluent social classes even in the developed countries.Third, the recent attacks by fringe terror groups operating from Yemen on the ships and tankers passing through the Suez Canal have virtually shut this major global trade route, as a result of which both the cost of transportation and schedule of deliveries have been severely hit. With a new form of cold war emerging between the USA and China, the threat to sustainable growthfrom uncertain geopolitical events of this nature seems to have been further heightened.

The third major source of uncertainty for sustainable global growth emanates from the arena of technological change, particularly from the emerging new

technologies in the field of Artificial Intelligence (AI). We must, however, reckon in this context that new technologies have historically disrupted settled social order through a process of "creative destruction". For instance, let us recall the movement of the "Luddites"-British weavers and textile workers- in 19th century Englandwho raided textile factories and smashed labour-saving mechanised looms and knitting frames. Though the march of the juggernaut of mechanised manufacturing in the aftermath of the First Industrial Revolution was both compelling and inevitable, the aggrievedtraditional textile workers who were victims of this disruptive technological change, won popular sympathy. Some of these machine-breaking luddites were evenconvicted with severe penalties including death which moved the famous English poet Lord Byron, who was a member of the House of Lords, to pen an "Ode" to empathise with their plight as follows:

"Some folks for certain have thought it was shocking,
When famine appeals, and when poverty groans,
That life should be valued at less than a stocking,
And breaking of frames leads to breaking of bones"
("Ode to Framers of Frame Bill")

Closer home, in Odisha too, we are familiar with a poignant tale of "Magunira Shagada" (Maguni's bullock-cart) that movingly encapsulates how the emergence of motorised transport rendered these hapless bullock-cart carriers jobless destitute.

Once again, theworld order is threatened by the potentially massive upheaval the emerging technologies in the field of artificial intelligence are apprehended to trigger. Already fears of massive job losses, large-scale use of misinformation and disinformationcampaigns and deep fakes to destabilise electoral democracies have started causing serious concerns among world leaders. If indeed AI triggers large-scale job losses and succeeds in jeopardising free and fair elections in the democracies, most certainly the social and institutional pillars of sustainable growth would be shaken to the core. At the same time, the enormous amount of potential benefits that AI might bring to humanity in various fields cannot also be overlooked. In a sense, AI, like many path-breaking technologies, is a dual-use technology. What kind of global regulatory

mechanism can harness its full potential for the benefit of humanity and limit its destructive uses has, therefore, emerged as a major global challenge.
Another dimension of the impact of AI on sustainable global growth is also uncertain. Economists have generally endorsed the Schumpeterian view of disruptive technologies leading to productivity growth through the well-known process of "creative destruction". However, in the case of AI, there are also real risks of "destructive creation". Does the global community have the institutional resources to mitigate this risk?

Given the potentially destabilising nature of AI, there are even calls for heavy-handed regulation of its development and usage. Would that be wise and for the larger long-term benefit of humanity? Would it not stifle innovation and deny humanity of its transformative power? These are indeed troubling questions for which there are no easy answers. But again, I wish to peek into economic historyand further explore how disruptive technologies were handled by the rulers in ancient times.

The great Roman writer Pliny the Elder has documented the following story. During the regime of the Roman emperor Tiberius, a man invented "unbreakable glass" and sought royal patronage, anticipating that he would be handsomely rewarded for this pioneering scientific achievement. When he showcased his invention before the emperor, Tiberius enquired if the inventor had told anyone else about it. When the inventor reassured the emperor that he had not, Tiberius had the man executed "lest gold be reduced to the value of mud".As explained by Acemoglu and Robinson, Tiberius destroyed this innovation fearingitsadverse economic impact on the existing producers and traders.

The second episode, again from the Roman Empire, provides direct evidence of the fear of the political consequences of creative destruction. The emperor Vespasian, during his reign between AD 69 and 79, was approached by an innovator who had invented a device for the transportation of columns to the Capitol, the citadel of Rome, at a very low cost. These columns were large, heavy, and logistically difficult to transport. Moving them from the mines, where they were made, engaged thousands of labourers, involving huge expenses to the government. Vespasian, however, blocked this innovation, though mercifully he did not kill him like Tiberius, declaring, "How will it be possible

for me to feed the populace?" Once again, a potentially game-changing innovation was shunned, not so much because of its economic impact, but because of the fear of political creative destruction. Vespasian reasoned that unless he kept his flock happy and under control, his political stability would be at risk. The plebians had to be kept engaged, busy and pliant. So, it was necessary to have jobs for their employment, such as moving columns from the mines to the citadel. Just pause for a moment and imagine how revolutionary it would have been for the Great Roman Empire if Tiberius and Vespasian had instead promoted the commercialisation of this innovation!

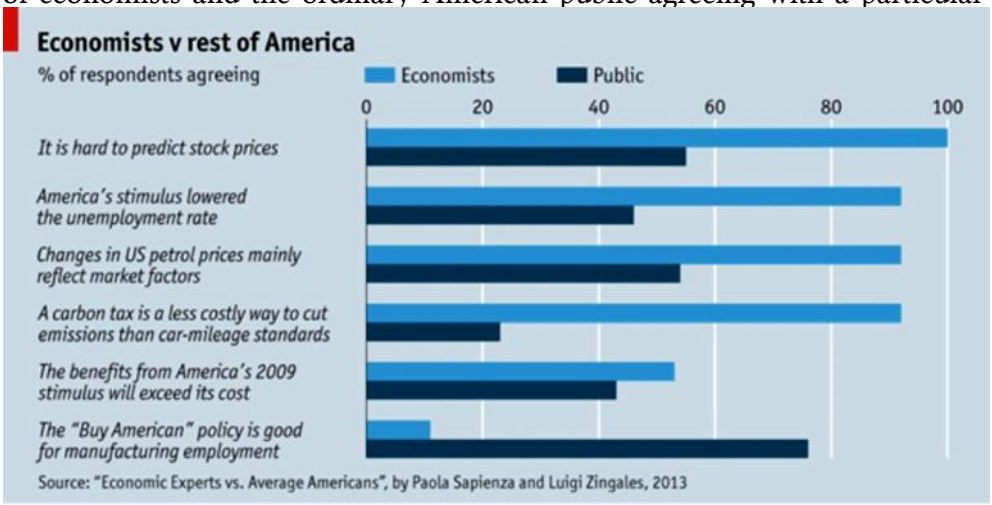
These episodes from ancient Rome certainly ring a bell when we discuss the economic and political impact of AI. The global community cannot afford to repeat the follies of Tiberius and Vespasian but explore an optimal path, through cooperation and collaboration, to harness its immensely transformative power to promote sustainable growth that is socially and institutionally inclusive. It is not a Genie to be kept bottled.

The three major sources of uncertainty I have highlighted also figure prominently in the *Global Risk Report 2024* (World Economic Forum, 2024) presented by the recently held World Economic Forum at Davos.Some observers have averred that the confluence of these uncertainties, interacting with each other, has led to a "poly crisis" for the world.Where do the economists find themselves in such a state of the world with elevated uncertainties? How relevant is the discipline of Mainstream Economics to chart sustainable pathways in this uncertain world?Are economists trusted enough to contribute meaningfully in tackling these uncertainties and ensuring sustainable long-run growth?

These questions, though somewhat troubling for us, are certainly being debated both within and outside the fraternity of economists. Recently Niranjan Rajadhyakhya (2024), in a column in *Mint* has mentioned, perhaps somewhat provocatively, that "every economic crisis tends to also become a crisis in Economics-as events throw an unsparing light on the gaps in our knowledge of how an economy works".In the wake of the global financial crisis of 2008-09 andthe Covid-19 pandemic of 2019-21, many of the well-settled "economic laws" of Mainstream Economics, such as the Phillips Curve and the Beveridge Curve are out of sync with the observed realities. More concerningly, few

economists, with all the sophisticated macro-economic models in their armoury, could forewarn the global community about the financial crisis of 2008-09. More recently, the prediction of most learned American economists about the "hard landing" of the US economy has surprisingly, albeit happily, proved wrong (*The Economist*, March 14, 2024). All these seem to have contributed to the erosion of trust of the general public in the wisdom of the economists.

Economists too seemed to be worried about this "trust deficit". Many of you might recall that in the annual meeting of the American Economic Association (AEA) held in the first week of January 2013 some membersfocused on economists' image problem (*The Economist*, January 12, 2013). An interesting paper presented at the conference by Sapienza and Zingales (2013) compared the results of a survey conducted among 41 eminent economists from seven highly regarded University departments (on a range of issues relating to the US economy) with the outcome of a similar poll of members of the public. They found a striking 37 per centage points, on average, between the proportion of economists and the ordinary American public agreeing with a particular




Source: *The Economist*, January 12, 2013

You may notice that while 93 per cent of the economists opined that a carbon tax is a less costly way to cut emissions than car-mileage standards, hardly 23 per cent of the public endorsed this policy prescription. Similarly, while few economists favoured protection for domestic manufacturing to create jobs, there was overwhelming support for this among the public.

Many of you might be aware that in the recently held annual meeting of the WEF, aspecial town hall was held on January 17, 2024 on "How to trust Economics". Interestingly, two well-known "non-economists"- President of the European Central Bank (ECB) Christine Lagarde and the Rock Star Harvard Professor of Philosophy Michael Sandel- were invited to participate. This scintillating session was moderated by Martin Wolf, Chief Economics Commentator of the *Financial Times*. During the discussion, Lagarde strongly denounced economists as a "tribal clique" in the following words:"They are among the most tribal scientists that you can think of. They quote each other. They don't go beyond that world. They feel comfortable in that world."

She went on to argue further that "if we had more consultations with epidemiologists if we had climate scientists to help us with what's coming up, if we were consulting a better with the geologists, for instance, to properly appreciate what rare earths and resources are out there, I think we would be in a better position to actually understand these developments, project better, and be better economists."

It is not only the "non-economists" who have found fault with this insularity of the economists, which, according to them, contribute towards the inadequacy of mainstream economics in capturing the interrelated, complex systems of the real world. Economists, who try to model how the economy works using highly simplifying assumptions about the behaviour of the economic agents, which are often inconsistent with the well-settled findings of the behavioural sciences, therefore, neither make correct diagnoses of the economic problems nor provide early warning signals of impending crisis. Unsurprisingly, they also often fail to provide correct policy prescriptions to mitigate these risks. Dani Rodrik (2015) is one the minority group of economists,who has emphatically endorsed this view in his book *Economics Rules: The Rights and Wrongs of the Dismal Science*. Recounting his experience in his two-year stint in the Institute of Advance Study during 2013-15, he was struck by a strong undercurrent of suspicion towards economists by the other visitors to the institute drawn from anthropology, sociology, history, philosophy, and political science. As Rodrik (2015: 5) observes: "To them, economists either stated the obvious or greatly overreached by applying simple frameworks to complex economic phenomena. I sometimes felt that the few economists around were treated as the idiots

savants of social science: *good with math and statistics, but not much otherwise*." (emphasis added).

He went on further with a more stinging piece of criticism:"Yet it was clear that economists had none other to blame for this state of affairs. The problem is not just their sense of their oftendoctrinaire attachment to a particular way of looking at the world. It is also that economists do a bad job of presenting their sciences to others" (Rodrik, 2015: 6).

It is not my contention that economists have remained oblivious to this line of criticism. In fact, they have deeply introspected this issue during the past two decades and attempted to explore real-life economic problems with more comprehensive, interdisciplinary approaches. The emergence of Behavioural Economics and Environmental Economics is a testimony to this change of track in the "Dismal Science". Award of three Nobel Prizes to these new-found approaches in recent years (Daniel Kahneman and Vernon Smith in 2002, Elinor Ostrom and Oscal Williamson in 2009, and Richard Thaler in 2017) recognises the significant difference this interdisciplinary approach has made to the discipline of Economics.

Let me conclude by affirming my strong support for this approach tohelp the global community craftworkable solutions for overcoming the daunting challenges the world is facing at this critical juncture. Let me also make it clear that I am not arguing for abandoning the "orthodox" Economics; I am simply pleading for opening the windows for the heterodox approaches to deepen our understanding of the complex economic problems that we are confronting.

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Article

# Economics and the Poor: Reminiscing Logic, Empirics and the State

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**Nilakantha Rath**

I feel greatly honoured by the decision of the Odisha Economic Association for this award. I must confess that when Professor Manoj Panda sent me this proposal I was greatly surprised. I have never taught or been a researcher in any of the higher educational institutions or Universities in Odisha. My writings in Odisha's mediums have been mostly newspaper articles. I presume I am honoured because I am an Odia scholar. Thank you.

As I think back about my scholastic life, I realize that economics is essentially an empirical discipline, which tries to understand the how's and why's of the society's economic organisation. The normative and prescriptive values are not an intrinsic part of the discipline. They come out of independent human rational thinking, which is the source of all human values. I remember that I began my professional work faced with a lot of village level data collected by a senior who had left without any statement about why these data had been collected. As I began to think of the rural scene and the analytical propositions relating to it I had been faced with in my MA class, I was suddenly asked to read and comment on the district monographs of the Rural Credit Survey of the Reserve Bank of India. These were reports which had a clearly specified purpose laid down in broad detail. So, reacting to these was straight forward. It was a very useful training for me. It prepared me to read the relevant literature and write my Ph.D. dissertation, which incidentally made me familiar with most of the literature on the Indian rural economy available at that time.

Nilakantha Rath, Emeritus Fellow, Indian School of Political Economy, Pune, India.

Text of the speech delivered online at the 56th Annual Conference of the Odisha Economic Association, Sambalpur University, Burla, February 10, 2024.

However, my learning of basic economic theory in the University of Chicago, some eight years after I had passed MA, made me think about the relevance of the logic of economic analysis for raising questions about proper economic use of resources for the best outcome. The Friedmanian orientation of most, if not all teaching there, in spite of its very rightwing orientation of social values, was basically empirical. I tried my hand there to see and show that unirrigated farmers in peninsular India did respond to changes in relative prices, though the response was so low that it understandably gave the impression to some that the dry land farmer in India was not responsive to price changes.

This logico-empirical approach led me to study the impact of food grains under Public Law 480 from the USA; it had an unfavourable impact on Indian agriculture. Fortunately, the government of the day introduced price support programme at the time the new high-yielding wheat and rice were being introduced in India. This led me to show with empirical data available that it is meaningless to advocate fixing support price on the basis of estimated cost of production, however calculated. Subsequently, I proposed calculation of terms of trade for individual crops in different states with reference to a good year in the past as the basis for the support price. Ad hoc adjustments in this by the government would land the economy and the government in trouble.

During the planning era in India very detailed sample surveys into different aspects of the rural and urban economy were undertaken, which opened up opportunity for scholars to not only use these for the specific purpose for which they were collected, but also for many other uses that the user could think of. I used the consumer expenditure data collected by the National Sample Survey Organisation (NSSO) for estimation of rural and urban poverty in different states of India. The study, carried out by Professor Dandekar and me, started with the simple notion that at that time those in India who could not get two square meals a day for 365 days in the year were poor. And the notion of two square meals was translated into calories on the basis of nutritional study by Professor P.V. Sukhatme. The study led us to the conclusion that under the prevailing situation, a public policy of employment in public works was the most appropriate measure to help the rural poor rise above poverty. Later on, I found that the Integrated Rural Development Programme of the government was not effective in this task. However, except for the government of Maharashtra, the Planning Commission took nearly thirty years to implement such an employment programme for the country as a whole.

I may mention here that some of the very detailed large scale sample surveys in the country have not been used adequately by scholars. The cost of production surveys into large number of sample farmers every year were not used by economists for any other purpose except for the calculation of average cost of production of crops. I used these data to estimate the extent of disguised unemployment in agricultural households, which turned out to be very high. This was half a century back. I presume it might have declined by now, adding to the extent of open unemployment. But these data are likely to be very useful for certain other purposes.

I had the opportunity of working in a few government-appointed committees to enquire into certain aspects of the economy. The review of land reform laws in Maharashtra led us to the conclusion that ending tenancy in farm land for small land owners was an unhelpful proposition, mainly because it prevented out-migration of workers for non-farm jobs, which was becoming growingly necessary. The other committee work led to the estimation of the extent to which social infrastructure in rural areas had been carried out by the government. It turned out that nearly forty per cent of the villages in Maharashtra had no all-weather roads linking them to the nearest highway, had no primary schools, had no access to primary health centres, etc. by 1983, thirty three years after planning. This had a very negative impact on the basic well-being of the rural populace, on their ability to rise in economic life, in creating opportunity for local entrepreneurs to open enterprise, small and medium. The committee recommended a method by which discretionary decisions about investment in such works would be avoided. I made a similar calculation for Odisha as a member of the Odisha Planning Board in the first half of the 1990s. But neither Maharashtra nor Odisha government accepted the recommendation. Later, in a paper I pointed out that the terrible social and political situation that the country had been witnessing since the middle of 1960s is a consequence of this signal failure by the Indian Planning Commission. This and proper decentralization of administration appear to be absolutely necessary for such development.

Ever since I came back from Chicago, I was teaching a course in basic price theory, while doing my research in rural economy. While teaching, it occurred to me to point out that the in equilibrium, the fixed or the smallest factor of production would have the highest average product, something that is never drawn attention to. When one of my Ph.D. students showed me his draft on

his enquiry into a lift irrigation study, I suggested this to him in order to try out a more economic use of the given quantity of water. He did it, and came with the result that the best use of that water would be in supplying the water to seasonal crops (mainly seasonal millets, pulses and oilseeds) than sugarcane, to which water was being given. This result led me to propose a research scheme in a large-scale irrigation project in Maharashtra. The result was revealing: the data clearly showed that supplying water to seasonal millets, pulses, oilseeds, cotton would lead to more than doubling the area under irrigation, doubling the total income from the same quantity of irrigation water, benefits to a much larger number of farmers and employment of a much larger body of family workers and hired labour, than the sugarcane-based irrigation. The data and the conclusion were never contested. The question raised by us, not others, was: why are the farmers not interested in this use pattern? The answer was simple: An acre of sugarcane takes a volume of water that would suffice the irrigation of ten acres of millets or the other seasonal crops. But in the flow irrigation projects there were very few farmers who had more than five acres under command of the scheme. They will stand to lose if water is diverted to non-sugarcane crops. For them the land, not water in the project area, was in short supply. It is a matter of conflict of social and private interest. The recommendation has never been accepted, though no one questions the logic of the finding. I do not wish to speculate what will happen and when.

When I was working on this I was painfully aware that this line of reasoning had not occurred to me when I was working on the Hirakud Dam project in the 1950s. I should have advocated water courses from minors to fields covering about, say, twenty acres, instead of the flooding method for irrigating fields. This would have facilitated providing fixed quantity of water to every plot and water to seasonal non-cereal crops. The Bahal lands should have been left without water courses, but required to be served by wells or shallow tube-wells for farmers who thought of supplementary irrigation of their paddy crop. I wrote newspaper articles on the subject much later, to no effect.

I did a calculation of the costs and benefits of the proposal to link rivers in India mainly to provide water to the water-short regions of peninsular India. It showed that the cost of water to even a seasonal crop would be fantastic. The alternative scheme of use of canal water for seasonal crops in peninsular India would be a far better way of using the water resources of the country. But, though uncontested, it did not draw any reactions from concerned quarters.

Friends, as I approach my 95th year I realize a lot of work can be done on the Odisha economy, indeed of every state economy. I am not thinking of new fact finding surveys, but use of available survey data. It is a great pity that the government of India is not permitting conduct and publication of such surveys in recent years. But a lot of work I feel is possible with already published data. The Statistical Bureau of Odisha government has been carrying out detailed enquiry every year since 1981 in 20 per cent of the villages of the state for information plot-wise. The data show steadily declining area under cultivation in the state. This needs investigation and analysis. Since 2000 the NSSO has carried out the survey, at six-year interval, into the household income of agricultural families. The data show that Odisha is the state with the lowest household income from agriculture and it is declining since 2002 till 2018. What is more, its income from agriculture is lower than from wages. This is something that needs investigation and analysis. This can be helped by the annual investigation data of the Bureau referred to above. The spread of irrigation, the use of manures/fertilizers can be investigated with the available data. There are many questions that can be raised and answers sought. Diversification in agriculture is another aspect that needs looking into. It is not as if the Odia farmer is completely silent. But what needs investigation is the circumstance preventing quick adoption of good examples.

It is not only agricultural development or rather the lack of it. Rural areas need opening up for small and medium non-farm enterprises. The periodic economic census which was being carried out has not been repeated after 2017; even the report of 2017 census is not being published. These data would show the changing situation and point indirections that would need investigation and analysis. Spread of different types of crops need and will facilitate location of appropriate processing units This, besides the processing units for household needs, which are slowly opening up. Location of industrial units in rural and semi-urban areas to supply needs of larger factories is another possibility. Studies show that such units in India are not all in the neighbourhood of the large factories opening up of the villages with all-weather roads and electricity may facilitate location of such units. And data show the possibility of locating such units in villages on non-farm lands. I can go on, but must stop listing what I cannot do now.

Economic development, meaning greater spread of economic wellbeing, I think,

requires large scale investmentin creating social infrastructure, not privatization and insurance. In this context, the privatization of channels for mobile telephone and e-mail facility run the risk of emergence of monopoly. There are parties with deep pockets who will sooner than later monopolise these and many other sectors of the economy. What is necessary is creating apublic sector channel of broad-band message carrying facility which various service providers can hire for their use. Failure in this matter will lead to serioussocio-political and economic consequences. I can at this stage do nobetterthan quote from a signal study by a distinguished historian into the East India Company, the world's oldest and most outstanding joint stock company:

"The East India Company remains today history's most ominous warning about the potential for the abuse of corporate power – and the insidious means by which the interests of shareholders can seemingly become those of the state. For as recent American adventures in Iraq have shown, our world is far from post-imperial, and quite probably never will be. Instead Empire is transforming itself into forms of global power that use campaign contributions and commercial lobbying, multinational finance systems and global markets, corporate influence and the predictive data harvesting of the new surveillance-capitalism rather than – or sometimes alongside – overt military conquest, occupation or direct economic domination to effect its ends.

Four hundred and twenty years after its founding, the story of the East India Company has never been more current" (Dalrymple, 2019: 397).

Friends, I must stop. I am greatly obliged to you for the award and this gracious opportunity to share my recollections with you.

Sorry, as I was coming to the end of my little speech, I suddenly realized that this is more appropriately a talk for senior students of economics from an old retiring teacher rather than to seasoned teachers and researchers of economics. Pardon me, it is too late.

## Reference

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Article

# Improving Municipal Revenues: A Comparative Study of Selected Municipal Corporations of India

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## Abstract

Cities drive economic growth through agglomeration and network externalities, but these benefits are unsustainable without adequate infrastructure and quality service delivery. Urban local bodies face the dual challenges of providing infrastructure and services amidst poor financial conditions, leading to excessive dependence on higher tiers of government. Local governments receive insufficient financial allocations and fail to utilise their assigned revenue sources fully. This has deteriorated the financial health of city governments, highlighting the urgent need for municipal finance reforms. This paper examines major municipal corporations like Mumbai, Bengaluru, and Hyderabad, as well as emerging ones like Bhubaneswar and Thiruvananthapuram, to understand the trends and issues in municipal finance. It identifies a lack of autonomy and outdated mechanisms as key factors behind their financial struggles and proposes reforms for each category of municipal revenue with a due focus on user charges and the benefit principle of taxation.

**Keywords:** Agglomeration, network externalities, municipal revenues, benefit principle, municipal taxes, and user charges.

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## 1. From Municipal Corporations to Municipal Economic Regions

The economic development of any nation involves a structural transformation characterised by a decline in the primary sector's importance and a rise in the secondary and tertiary sectors. This transformation is accompanied by spatial changes, leading to the emergence of cities, which are often hailed as humanity's greatest invention (Glaeser, 2011). Cities developed as firms, industries, and households sought to co-locate to minimise distance and transportation costs (Fujita 1989; Rosenthal and Strange 2004, Henderson 1974, Brueckner 2011). This co-location resulted in various externalities, such as knowledge spillovers, a skilled labour pool,and efficient supply chains, broadly known as agglomeration economies. People and firms are (Duranton and Puga 2004; Fujita and Thisse 2002, Puga 2010; Cheshire, Nathan, and Overman 2014; Duranton, Henderson, Strange 2015 and Mishra 2024). Consequently, densely populated regions dominated by non-agricultural activities have emerged. Today's world is characterised by such densely populated cities, which drive economic growth and prosperity.

The economic significance of cities is demonstrated by the "productive environment" they offer, including lower transport costs, a specialised labour pool, raw materials, infrastructure, a knowledge base, and opportunities for collaboration and competition. According to a Brookings Institution report, Global Metro Monitor 2018, the 300 largest metropolitan cities, which house just under one-fourth of the global workforce, generated nearly half of the world's production in 2016. Additionally, 48 out of the 60 best-performing metropolitan cities are in emerging economies (Bouchet et al., 2018).

India's economic development mirrors global trends, with rapid growth over the past two decades primarily driven by the service sector and centered in cities. The top 10 metropolitan cities in India, which occupy just 0.1 per cent of the country's land area and house 8 per cent of its population, contribute about 15 per cent of the nation's GDP. Similarly, the 53 cities with populations over a million, accounting for 0.2 per cent of land area and 13 per cent of the population, generate 31 per cent of India's GDP. It is projected that by 2030, urban areas will contribute around 75 per cent of India's GDP (Planning Commission 2008, Smart Cities Mission, Government of India 2015).

According to McKinsey (2010), cities will account for 70 per cent of new employment and 85 per cent of public finance in India over the next two decades. The 2011 Census of India reports an urbanisation level of 31.2 per cent, though this figure likely understates the true extent due to "hidden urbanisation" in the outskirts of large cities. A World Bank agglomeration index estimates that 55.3 per cent of India's population lived in areas with "urban-like" features in 2010. This increasing urban population places significant demands on city governments to provide adequate infrastructure, civic amenities, and services (Mohanty, 2014). Without proper financial resources, it is challenging to maintain the efficiency of cities in generating agglomeration economies, which are crucial for sustaining growth (HPEC 2011, Ahluwalia, Kanbur and Mohanty 2014).

The significance of metropolitan areas to the economy is now widely acknowledged. The Ministry of Housing and Urban Affairs has also emphasised the role of planned urban development in fostering economic growth. Urban governance in India is divided into Municipal Corporations, Municipal Councils, and Nagar Panchayats based on territorial jurisdictions. These elected bodies are constitutionally mandated to mobilise or receive funds and deliver public services. According to the Constitution, Nagar Panchayats serve transitioning rural-to-urban areas, Municipal Councils manage smaller urban areas, and Municipal Corporations oversee larger urban areas. In practice, this varies across states, as state notifications are governed by different Municipal Acts. State governments establish these urban local bodies based on factors like population, local administration revenue, and employment in non-agricultural activities. Consequently, multiple urban local governments often coexist within the same metropolitan region, leading to diverse property tax rates, uncoordinated spatial and transport planning, and inconsistent service delivery. This renders the governance structure of these areas mostly inefficient, unclear, and fragmented.

An improper and inefficient governance structure has led to uncoordinated efforts in expenditure and revenue mobilisation, occurring at a time when there is a critical need for substantial funds to finance the infrastructure and service demands of large cities. Municipal finances in India are not only in a poor state but are also deteriorating year after year. The introduction of GST has exacerbated these issues. Data submitted by state governments to the 14th

Finance Commission of India reveals that the estimated total revenues of all municipal bodies combined were less than Rs. 100,000 crore in 2012-13 - approximately 1.03 per cent of GDP. Data from the Eleventh and Twelfth Finance Commissions show that the municipal tax-to-GDP ratio stagnated at around 0.70 per cent in the 1990s, and the Thirteenth Finance Commission estimates this figure at about 0.94 per cent for 2007-08. Municipal revenue as a per centage of GDP has been declining from 2007-08 to 2017-18, reaching just one per cent in 2017-18. As far as the own sources of revenue are concerned, property tax is the only major source for such revenue (Mishra et al., 2020). Since the 74th Constitutional Amendments Act, the framework and trends in revenue receipts of ULBs have mostly remained unchanged. Intergovernmental transfers continue to dominate the revenue structure (Verma, Mondal, Bazaz and Dubey, 2023).

This paper is dedicated to studying the financial position of the leading municipal corporations of India: Mumbai, Bengaluru and Hyderabad. The study also includes two emerging corporations, namely, Bhubaneswar and Thiruvananthapuram. The study draws lessons for improving municipal revenue. The rest of the paper is organised as follows: Section 2 is dedicated to the state of municipal revenues in India and highlights the need for urgent reforms. Section 3 includes the study of the finances of the selected municipal corporations (Mumbai, Bengaluru, Hyderabad, Thiruvananthapuram and Bhubaneswar). This section reflects upon the lessons these municipal corporations can learn from each other. Section 4 draws lessons from the comparative study, international best practices and theory to provide directions for improving municipal revenue structure in India. Section 5 concludes.

## 2. State of Municipal Revenues in India

Via the 74th Constitutional Amendment Act, extensive provisions pertaining to the duties of urban local authorities have been enacted and are included in the 12th schedule. Finances, however, are not discussed in relation to these duties. The mismatch has made ULBs' financial situation worse. Their tax base is unclear and small. They also lack buoyancy and flexibility. Additionally, state governments have a significant influence on tax rates, with less local participation. As a result, local governments become impoverished and reliant

on higher-level subsidies and aid. The nation's municipalities' decreasing revenue mobilisation is indicative of this trend. While India has duly acknowledged the role cities play in economic development, the financial standing of city administrations remains plagued. The "rich city-poor city government syndrome" affects India's urban local bodies (ULBs). It is acknowledged that Indian municipalities lack "fiscal autonomy" and are unduly reliant on the upper levels of government.

Table 1 shows the trends in municipal revenue in India. The "own sources of revenue" comprising tax and non-tax revenue raised independently by municipalities has been experiencing a downward trend from 2007-08 to 2017-18. As a per cent of total municipal revenue, own-revenue has declined from 55.7 per cent to 42.71 per cent over this period. Municipal taxes as a per cent of total municipal revenue have declined from 37.2 per cent to 25.02 per cent over the same period. Over this period transfers as a per cent of total municipal revenue have marked a rise from 44.3 per cent to 57.29 per cent indicating a surge in fiscal dependency. Further, municipal revenues formed a meagre one per cent of GDP in 2017-18.

**Table 1: Trends in Municipal Revenues in India by Source: 2007-08 to 2017-18**

| Sl. No. | Sources of Revenue | 2007 – 08 | | 2012 – 13 | | 2017-18 | |
|---|---|---|---|---|---|---|---|
| | | Total (Rs. Crore.) | % of Total Municipal Revenue | Total (Rs. Crore) Total | % of Total Municipal Revenue | Total (Rs. Crore) | % of Total Municipal Revenue |
| A. | Own Sources | | | | | | |
| 1. | Total Taxes | 18,366 | 37.20 | 30,912 | 32.00 | 42954.3 | 25.02 |
| | Property Tax | 8,159 | 16.53 | 15,110 | 15.64 | 25551.9 | 14.88 |
| | Other Taxes | 10,207 | 20.68 | 15,801 | 16.35 | 17402.4 | 10.14 |
| 2 | Non-Taxes | 9,134 | 18.50 | 19,002 | 19.70 | 30377 | 17.69 |
| | Total Own Source Revenues | 27,501 | 55.70 | 49,913 | 51.60 | 73331.3 | 42.71 |
| B. | Other Sources | | | | | | |
| 1 | Government of India Transfers | 3,515 | 7.10 | 5,387 | 5.60 | 8244.9 | 4.8 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | Central Finance Commission Transfers | 986 | 2.00 | 3,760 | 3.90 | 12324.5 | 7.18 |
| 3 | State Assignment/ Devolution | 9,342 | 18.90 | 18,537 | 19.20 | 55573.9 | 32.367 |
| 4 | State Grant-in-Aid | 6,653 | 13.50 | 14,809 | 15.30 | | |
| 5 | Others | 1,355 | 2.70 | 4,234 | 4.40 | 22222.5 | 12.943 |
| | Total Other Source Revenues | 21,851 | 44.30 | 46,727 | 48.40 | 98365.8 | 57.29 |
| C. Total Revenues | | 49,351 | 100.00 | 96,640 | 100.00 | 171679.1 | 100.00 |
| Gross Domestic Product at Factor Cost in Current Prices (GDP) | | 45,82,086 | | 93,88,876 | | 1,70,95,005 (At Market Prices) | |
| Municipal Revenue as a % of GDP | | | 1.08 | | 1.03 | | 00 |

Source: Mishra et al. 2020

Table 2 shows the distribution of municipal revenues by source for all three categories of ULBs (Nagar Panchayats, Municipalities and Municipal Corporations). As is evident from the table, the state of smaller ULBs is far worse than that of larger municipal corporations.

**Table 2: Distribution of Municipal Revenues by Category of Urban Local Body: 2007-08, 2012-13 and 2017-18**

(Per centage)

| Sl. No. | Sources of Revenue | Municipal Corporations | | | Municipalities | | | Nagar Panchayats | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2007 -08 | 2012 -13 | 2017 -18 | 2007 -08 | 2012 -13 | 2017 -18 | 2007 -07 | 2012 -13 | 2017 -18 |
| A. | Own Sources | | | | | | | | | |
| 1. | Total Taxes | 45.5 | 40.9 | 30.4 | 18.6 | 14.7 | 14.6 | 10.9 | 8.2 | 8.1 |
| 2 | Non-Taxes | 22.2 | 23.9 | 21.4 | 9.3 | 10.5 | 10 | 11.3 | 11.8 | 10.3 |
| | Total Own Sources | 67.6 | 64.8 | 51.8 | 27.9 | 25.2 | 24.6 | 22.1 | 20.1 | 18.4 |
| B. | Other Sources | | | | | | | | | |
| 1 | Govt. of India Transfers | 7.0 | 4.6 | 8.4 | 8.4 | 7.3 | 19.2 | 3.0 | 2.2 | 21 |
| 2 | Central Finance Commission Transfers | 0.8 | 2.1 | | 5.3 | 8.8 | | 2.8 | 8.8 | |
| 3 | State Assignment/ Devolution | 11.4 | 12.6 | 26 | 31.2 | 29.0 | 43.9 | 63.1 | 49.9 | 54.7 |
| 4 | State Grant-in-Aid | 10.4 | 12.2 | | 24.2 | 23.8 | | 6.9 | 14.0 | |
| 5 | Others | 2.7 | 3.8 | 13.8 | 3.0 | 5.8 | 12.3 | 2.1 | 5.2 | 5.9 |
| | Total Other Sources | 32.4 | 35.2 | 48.2 | 72.1 | 74.8 | 75.4 | 77.9 | 79.9 | 81.6 |
| C | Total Revenue | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Mohanty (2016) and compiled by authors from ICRIER 2019.

Table 3 presents the distribution of municipal revenues by source in the states of India in 2017-18. Except Maharashtra, Punjab, Andhra Pradesh, Telangana and Nagaland, ULBs of all the states are heavily dependent on state and central transfers. The central transfers include the Government of India transfer and Central Finance Commission (CFC) transfers. State transfers comprise assigned revenues, devolution through the State Finance Commission (SFC) and grants-in-aid from state governments.

**Table 3: Percentage Distribution of Municipal Revenues by Source in India: 2017-18**

| State | Taxes | Non-Taxes | Central Transfers | State Transfers | Others |
|---|---|---|---|---|---|
| Andhra Pradesh | 35.4 | 27.4 | 13 | 18.4 | 5.8 |
| Arunachal Pradesh | NA | 5.6 | NA | 94.4 | NA |
| Assam | 36.2 | 25.8 | NA | 38 | NA |
| Bihar | 5.1 | 1.2 | 32.9 | 60.8 | NA |
| Chhattisgarh | 34 | 18.5 | 26.9 | 2.5 | 18.1 |
| Goa | 21.4 | 25.5 | 15.3 | 23.4 | 14.3 |
| Gujarat | 33 | 14.1 | 8 | 35.2 | 9.6 |
| Haryana | 12.7 | 12.4 | 14.3 | 60.5 | NA |
| Himachal Pradesh | 11.3 | 19.6 | 21.8 | 47.3 | NA |
| Jammu and Kashmir | 4.6 | 4.3 | 3.9 | 83.8 | 3.3 |
| Jharkhand | 4.9 | 3.9 | 40.7 | 50 | 0.5 |
| Karnataka | 19.7 | 7 | 9.1 | 62.3 | 1.8 |
| Kerala | 14.6 | 8.6 | 22.6 | 54.2 | NA |
| Madhya Pradesh | 32.3 | 10.4 | 6.9 | 42.2 | 8.2 |
| Maharashtra | 33.2 | 32.2 | 2.6 | 8.8 | 23.2 |
| Manipur | 1.8 | 2.6 | 50.4 | 43.6 | 1.4 |
| Meghalaya | 51 | 8.9 | 0 | 22.3 | 17.8 |
| Mizoram | 6.3 | 4.5 | 46.3 | 43 | NA |
| Nagaland | 69.1 | 23 | 0 | 8.4 | 0 |
| Odisha | 4.7 | 5.5 | 17.1 | 67.4 | 5.3 |
| Punjab | 66.6 | 15.4 | 13.5 | 1.7 | 2.9 |
| Rajasthan | 15 | 17.5 | 18.2 | 44.1 | 5.2 |
| Sikkim | 4.9 | 36.9 | 34.5 | 23.8 | 0 |
| Tamil Nadu | 16.4 | 13.4 | 13.4 | 27 | 29.8 |
| Telangana | 35.8 | 30 | 6.8 | 27.4 | 6.7 |
| Tripura | 2.6 | 2.8 | 5.6 | 51.1 | 37.9 |
| Uttar Pradesh | 7.5 | 6.1 | 18.1 | 56.7 | 11.5 |
| Uttarakhand | 6.5 | 4.6 | 27.9 | 61 | 0 |
| West Bengal | 10.3 | 9.6 | 38.4 | 37.7 | 4 |
| India | 25 | 17.7 | 12 | 32.4 | 12.9 |

Source: Mohanty (2016), compiled by authors from ICRIER 2019.

Further, there is a lack of uniformity in terms of taxes raised by different municipalities. The municipal corporations covered in the study also reflect varying trends. Table 4 shows this distribution for the municipal corporations covered in the study. Most of the municipal corporations show heavy dependence on property tax, which has remained the only major source of own-tax after the advent of the GST regime.

**Table 4: Distribution of Tax Revenue Sources of Select Metropolitan Cities, 2018**

| Name of City | Composition of Municipal Tax Revenues (% of Total Tax Revenue) |
|---|---|
| Mumbai | Property Tax - General (26.8), Water Tax (22.25), Sewerage Tax (21.61), Education Tax (11.43), Fire Tax (4.11), Street Tax (14.48), Tree Cess (0.006), Theatre Tax (0.04) |
| Bengaluru | Property Tax (98.5), Advertisement Tax (1.5) |
| Hyderabad | Property Tax- General (45), Sewerage Tax (12.5), Conservancy Tax (30), Lighting Tax (12.5) |
| Thiruvananthapuram | Property Tax (55.4), Advertisement Tax (0.55), Profession Tax (41.53), Entertainment Tax (2.52), |
| Bhubaneswar | Property Tax (74.3), Advertisement Tax (25.7) |

Source: Budget and Accounts of Indian States

To sum up, the state of municipal finances is miserable. This is a critical issue since the ability of cities to support economic growth is largely dependent on agglomeration and network externalities, which in turn depend on the availability of adequate infrastructure and services. With the poor financial status of ULBs, such provisions are difficult, posing a severe threat to city-led economic growth. The next section takes up a detailed study of the municipal finances of Mumbai, Bengaluru, Hyderabad, Bhubaneswar and Thiruvananthapuram to better understand revenue mobilisation attempts and problems therein.

## 3. A Study of Selected Municipal Corporations

The richest civic organisation in India is widely acknowledged as the Municipal Corporation of Greater Mumbai (MCGM). The Bruhat Bengaluru Mahanagar Palike (BBMP) is commended for its unique financial tools and property tax

strategy. Some innovative land-based finance techniques have been implemented by the Greater Hyderabad Municipal Corporation (GHMC) and should be replicated across India. Additionally, because they are developing cities with comparable areas and populations of urban dwellers, Thiruvananthapuram Municipal Corporation and Bhubaneswar Municipal Corporation have been included in the study (Census of India 2011). The RBI Handbook of Statistics on Indian States, the ICRIER Study created for the 15th Finance Commission, the Budget and Accounts of the Municipalities,the Indian Municipal Finance Report 2023, and other sources have provided data for all five municipal corporations. For comparison, data for the years 2012-13, 2016-17 to 2022-23 have been used. The demographic profile of the municipalities under study has been presented in the Table 5. Mumbai is the largest in terms of area, while Hyderabad is the most populated. Further, Hyderabad has a greater share of the state's urban population at 49.5.

**Table 5: Population and Area of the Municipalities**

| Municipal Corporation | Population (in million) | Area (in sq. km.) | Share in State Urban Population (in %) |
|---|---|---|---|
| Mumbai | 12.44 | 603 | 24.48 |
| Bengaluru | 8.44 | 709.96 | 35.81 |
| Hyderabad | 6.73 | 715.10 | 49.50 |
| Thiruvananthapuram | 0.74 | 141.74 | 4.68 |
| Bhubaneswar | 0.84 | 186 | 12.04 |

Source: Census of India, 2011

The municipal corporations covered under the study not only have discrepancies in area and population but also differ in revenue mobilisation and productive capacity. The larger municipalities have larger tax and non-tax bases and also employ a larger basket of tools. Further, some municipalities under study (Mumbai, Bengaluru and Hyderabad) have higher density and higher values of property compared to others (Bhubaneswar and Thiruvananthapuram). Thus, in order to make a comparison regarding their revenue-raising ability and performance, it is appropriate to study the various data sets in relative terms

(i.e. as a per centage of total municipal revenue). The rest of the paper analyses the "own revenue", own tax, own non-tax, etc., in both relative and absolute terms. A key autonomy ratio compares municipal revenue as a ratio of GSDP. Table 6 analyses these ratios for the ULBs under study.

**Table 6: Comparative Budgets of Select Municipal Corporations: Municipal Revenue Share of GSDP (%)**

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 1.2 | 1.03 | 1.00 | 1.08 | 1.07 | 1.2 | 1.05 | *1.03* |
| Bengaluru | 0.49 | 0.5 | 0.52 | 0.69 | 0.3 | 0.3 | 0.49 | 0.32 |
| Hyderabad | 0.63 | 0.47 | 0.49 | 0.2 | 0.21 | 0.23 | 0.18 | 0.16 |
| Thiruvanant -thapuram | 0.05 | 0.06 | 0.05 | 0.07 | 0.07 | 0.08 | 0.09 | *0.09* |
| Bhubaneswar | 0.99 | 0.08 | 0.03 | 0.08 | 0.07 | 0.1 | 0.08 | 0.07 |

Source: Own Calculations

As the above table reflects, the ratio of municipal revenue to GSDP marked a fall for all the ULBs under study. However, over the last three years, the ratio has been more or less stable for all of them. In terms of their revenue performance, Bhubaneswar and Thiruvananthapuram fare very poorly compared to the other municipalities.

## Municipal Revenues

The majority of municipalities have implemented the functional budgeting framework, which assigns particular revenue and expenditure tasks to each department or function within the municipal corporation. A structure like this lessens the likelihood that certain departments will spend money that has been raised by another department without taking on the associated duties. The revenue details are expressly reported by the source and department individually in GHMC, MCGM, and TMC budgets. Only department-by-department budgets for the years 2018–19 were reported by BBMP. Therefore, in order to get a consolidated total for a certain head (such as tax, fees and user charges, non-tax, grants, etc.), one must sum the revenues collected by all departments under that head. As a result, the combined image of receipts under categories

such as taxes, assigned revenues, user charges and fees, sale and hiring charges, intergovernmental transfers, etc., was not easily available in the BBMP budget. The Bhubaneswar Municipal Corporation, however, just offers the revenue information under each heading; no analysis of the financial standing of individual departments has been done.

Each municipal corporation has a similar primary revenue head. That being said, the makeup of each municipal corporation differs. Own revenue and transfers make up the revenue receipts. Tax and non-tax revenue make up own revenue. The different types of taxes and non-taxes also differ throughout municipal entities. The trends in own tax revenue are presented in Table 7. Mumbai is ranked highest in terms of own revenue mobilisation till 2017-18, as the table shows. For 2012–13 and 2016–17, the existence of octroi provides an explanation for the Mumbai case. When it comes to own revenue mobilisation, GHMC outperforms other ULBs since 2018-19. The existence of an array of non-tax revenue sources is the reason behind the exemplary performance of GHMC. Though Bhubaneswar does not perform very well, its performance is better than Thiruvananthapuram. We may conclude that Thiruvananthapuram is more dependent on the higher tiers of government (soft budgeting) for its finances than the other municipal corporations under study.

**Table 7: Own Revenue of Selected Municipal Corporations (in Rs. Crore)**

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 17197.9 (97.6) | 22348.9 (98.3) | 17299.8 (73.1) | 12074.7 (50.3) | 11691 (46.8) | 14037.3 (49.3) | 12669.9 (44.8) | 14969 (47.4) |
| Bengaluru | 1691.1 (49.6) | 2836.6 (47) | 3048.7 (44.1) | 5254.2 (56.4) | 3004 (68) | 3075.8 (70) | 3593.4 (41) | 3983.4 (61.6) |
| Hyderabad | 1420.2 (57.9) | 2252.9 (73.1) | 2293.7 (50.26) | 2452.1 (84.4) | 2636.2 (82.1) | 2903.9 (79.2) | 2859.7 (87) | 3042.2 (88.6) |
| Thiruvanan -thapuram | 80.4 (38.2) | 128.3 (35.2) | 123.2 (33.7) | 189 (38.3) | 209.2 (38.5) | 213.5 (38.1) | 211.4 (27.2) | 249.2 (25.8) |
| Bhubaneswar | 120.9 (31.2) | 167.13 (55.7) | 170.87 (50.8) | 116.5 (34.1) | 93.1 (27.4) | 210.3 (46) | 167.3 (34.3) | 170.1 (34.4) |

Source: Budget and Accounts of different years, Compiled from ICRIER (2019) and Verma et al. (2023)
Note: *Figures in the parentheses show own revenue as a per centage of total municipal revenue.

Own revenue is comprised of tax and non-tax revenue. Table 8 and Table 9 show trends in tax revenueand non-tax revenue, respectively. The revenue mobilised through taxes is higher for the bigger municipal corporations. GHMC outperforms BBMP which despite having an elaborate property tax regime does not seem to fare good. This can be explained by the presence of vacant land tax in Hyderabad. Bhubaneswar is behind Thiruvananthapuram in terms of tax mobilisation. Non-tax revenue comprises of fees and user charges and sales and hire charges. Looking at the data on non-tax revenue as a per centage of total municipal revenue, the performance of Bhubaneswar marked a drastic fall since 2018-19. GHMC outshines other ULBs even under the non-tax head. However, BBMP fares well in 2022-23 due to the introduction of several cess linked to the plinth area of buildings.

**Table 8: Tax Revenue of Selected Municipal Corporations (Rs. crore)**

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 9916.5 (56.3) | 12013.9 (52.8) | 7195.3 (30.4) | 5206.2 (21.7) | 5016.2 (20.1) | 6768.6 (23.8) | 7000 (24.7) | 7000 (22.2) |
| Bengaluru | 1102.4 (32.4) | 1753 (29.1) | 1804.3 (26.1) | 2750.3 (29.5) | 2202.3 (49.8) | 2530.3 (57.6) | 2828.6 (32.3) | 3680.2 (56.9) |
| Hyderabad | 776.2 (31.7) | 1311.1 (42.6) | 1392.7 (30.5) | 1565 (53.8) | 1694 (52.8) | 1803 (49.2) | 1650 (50.2) | 1700 (49.5) |
| Thiruvanan -thapuram | 68.7 (32.6) | 100 (27.4) | 97.7 (26.8) | 147 (29.8) | 160.6 (29.6) | 153 (27.3) | 162.9 (21) | 184.8 (19.2) |
| Bhubaneswar | 39.15 (15.2) | 48.71 (16.2) | 53.98 (16.04) | 64.8 (19) | 57 (16.8) | 158 (34.6) | 81.2 (16.7) | 96.6 (19.6) |

Source: Budget and Accounts of different years, Compiled from ICRIER (2019) and Verma et al. (2023).

Note: *Figures in the parentheses show tax revenue as a per centage of total municipal revenue

**Table 9: Non-Tax Revenue of Selected Municipal Corporations (Rs. crore)**

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 7281.5 (41.3) | 10335.1 (45.9) | 10104.5 (42.7) | 6868.5 (28.6) | 6674.9 (26.7) | 7268.8 (25.6) | 5669.9 (20) | 7969 (25.2) |
| Bengaluru | 588.7 (17.3) | 1083.6 (18) | 1244.4 (18) | 2503.9 (26.9) | 801.7 (18.1) | 545.5 (12.4) | 764.8 (8.7) | 303.2 (4.7) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Hyderabad | 644 (26.3) | 941.9 (30.6) | 901 (19.7) | 887.1 (30.5) | 942.2 (29.4) | 1100.9 (30) | 1209.7 (36.8) | 1342.2 (39.1) |
| Thiruvananth -apuram | 11.7 (5.5) | 28.3 (7.8) | 25.4 (7) | 42 (8.5) | 48.6 (8.9) | 60.5 (10.8) | 48.5 (6.3) | 64.4 (6.8) |
| Bhubaneswar | 81.75 (31.7) | 118.42 (39.5) | 116.89 (34.8) | 51.7 (15.1) | 36.1 (10.6) | 52.3 (11.4) | 86.2 (17.7) | 73.5 (14.9) |

Source: Budget and Accounts of different years, Compiled from ICRIER (2019) and Verma et al. (2023)

Note: *Figures in the parentheses show non-tax revenue as a per centage of total municipal revenue

The tax basket across the municipal corporations covered under this study varies from one another. Table 10 shows the tax basket of these municipal corporations. As the table reveals, Mumbai presents an excellent example of tax basket drawing lessons from the "general benefit principle" which observes that beneficiaries ought to pay for the services rendered by public authorities. There is an enormous opportunity for city governments to raise revenue based on the principle of "beneficiaries pay" including "users pay." By the same logic, those who create dis-benefits in the economy (in the form of congestion and pollution) ought to pay towards meeting the mitigation costs. Thus, "polluters pay", "congesters pay", "exacerbaters pay" and "growth pays" paradigms may be considered as natural corollaries to the benefit principle. These principles, widely applied in developed countries - can be pooled together under the caption of the "generalised benefit principle" (Mohanty, 2016).

**Table 10: Tax Basket of the Selected Municipal Corporations**

| Municipal Corporation | Taxes Collected |
|---|---|
| Mumbai | Property Tax, Water Tax and Water Benefit Tax, Sewerage Tax and Sewerage Benefit Tax, Education Tax, Vehicle Tax, Animal Tax, Electricity Tax, Fire Tax, Theatre Tax, Street Tax, Tree Cess |
| Bengaluru | Property Tax, Advertisement Tax (Hoardings, Hoardings on Private Land, Bus Shelter, Sky walks) |
| Hyderabad | Property Tax, Vacant Land Tax, Property Tax on Super Structure, Other Minor Taxes |
| Thiruvananthapuram | Property Tax, Advertisement Tax, Service Cess on Property Tax, Profession Tax, Entertainment Tax, Tax on Animals |
| Bhubaneswar | Property Tax, Advertisement Tax, Entertainment Tax |

Source: Budget Documents of Different Municipal Corporations

Property tax is the most important own tax across the municipal corporations. Table 11 shows the trends in revenue mobilised through property tax across these municipal corporations. Mumbai follows the capital value-based property tax regime. GHMC and BBMP follow the unit area method with self-assessment of property tax. Property tax mobilisation seems to be better in GHMC than other municipal corporations.

**Table 11: Property Tax Revenue of the Selected Municipal Corporations**

(Rs. crore)

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 3272.4 (18.6) | 4823.1 (21.2) | 5200.8 (22) | - | - | 5788.48 (20.3) | 6050.27 (21.4) | 5907.76 (18.7) |
| Bengaluru | 1085 (31.9) | 1724.5 (28.6) | 1777.4 (25.7) | 2401.4 (25.76) | - | - | - | - |
| Hyderabad | 776.2 (31.7) | 1311.1 (42.6) | 1392.7 (30.5) | 1337.7 (46.02) | 1356.5 (42.26) | 1632.9 (44.53) | 1466.6 (44.6) | 1600 (46.6) |
| Bhubaneswar | 29.35* (11.4) | 32.62** (10.9) | 40.13** (14.8) | 37.43** (10.9) | 42.46# (12.5) | 56.27# (12.3) | 60.47# (12.4) | 81.58# (16.5) |
| Thiruvananth-apuram | 34.5 (16.4) | 51.1 (14.0) | 54.1 (11.9) | 51.9 (10.5) | - | 42.8 (7.6) | 89.91 (11.6) | 100 (10.4) |

Source: Budget and Accounts of different years, Compiled from ICRIER (2019)
Notes: * Holding Tax + Latrine tax + Lighting Tax ** Holding Tax # Consolidated property tax on land and building - Data is not available
Figures in the parentheses show property tax as a per centage of total municipal revenue

Table 12 shows the trends in taxes other than property tax for the selected municipal corporations. It reveals that very meagre amount of tax is mobilised from sources other than property tax. However, the case of Mumbai is explained by the presence of octroi before it was abolished.

**Table 12: Other Tax Revenue of the Selected Municipal Corporations** (Rs. crore)

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 6644 (37.7) | 7190.8 (31.6) | 1994.6 (8.4) | - | - | 980.12 (3.44) | 949.73 (3.35) | 1092.24 (3.46) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bengaluru | 17.4 (0.5) | 28.5 (0.5) | 26.9 (0.4) | 348.93 (3.74) | - | - | - | - |
| Hyderabad | 0.004 (0) | 0.004 (0) | NA | 227.35 (7.8) | 337.53 (10.5) | 170.09 (4.6) | 183.42 (5.6) | 100 (2.9) |
| Thiruvanant-hapuram | 34.2 (16.2) | 48.8 (13.4) | 43.6 (11.9) | 95.1 (19.3) | - | 110.2 (19.7) | 72.99 (9.4) | 84.8 (8.8) |
| Bhubaneswar | 9.8 (3.8) | 16.09 (5.4) | 13.85 (4.1) | 27.37 (8) | 14.54 (4) | 101.73 (22.2) | 20.73 (4.3) | 15.02 (3) |

Figures in the parentheses show other tax as a per centage of total municipal revenue
Source: Budget and Accounts of different years, Compiled from ICRIER (2019)

In recent years, Hyderabad has been making several attempts to rationalise the levy of town planning-related charges under fees and user charges head. Table 13 describes the town planning charges currently being levied by the Greater Hyderabad Municipal Corporation (GHMC). These have a strong connotation with the benefit principle. Hyderabad sets an excellent example for exploring the "growth pays" paradigm of the "general benefit principle". These consistent efforts being undertaken by the GHMC make it one of the leading municipal corporations in the country and the pioneer in exploring innovative tools for financing planned urban development. With the exception of Hyderabad and few fees and charges of Bengaluru and Mumbai, most of the fees and charges heads are uniform across the different municipal corporations.

**Table 13: Town Planning-related Charges and Fees: Greater Hyderabad Municipal Corporation 2014-15**

| Instrument | Description |
|---|---|
| Fee for layout development /sub-division of site/ construction/reconstruction | Fee for permission to undertake land development/ building construction/reconstruction/addition/ alteration. |
| Betterment charges for land development/construction | Charges for on-site installation of internal amenities like water supply, drainage, roads, etc. – Rs. 86 to Rs. 129 per square metre of site area. |
| External betterment charges for land development/ construction | Charges for off-site or external amenities like major arterial roads, flyovers, regional parks, etc., range from Rs. 86 to Rs. 176 per square metre of site area. |

| | |
|---|---|
| Development charges | Charges for institutions or changes in land use - industrial, commercial, residential, agricultural, and miscellaneous. |
| City level infrastructure impact fee on tall buildings | Buildings taller than 15 meters are required to pay a fee towards city level infrastructure, which varies depending on the building's nature, height, and location. There is no impact fee for the first 15 meters or five floors, whichever is lower, and different rates apply for additional floors or portions thereof. The money collected will be escrowed, with half going toward developing the infrastructure in the same area and the remaining half going toward improving city level infrastructure. |
| Impact fee on commercial buildings on important roads | A one-time fee, ranging from Rs. 2,200 to Rs. 4,400 per square foot of built-up area depending on the type of road, will be used for both on-site and off-site infrastructure under the capital improvement and decongestion plan. This includes road widening, link roads, junction improvements, flyovers, and other improvements. The purpose of this fee is to mitigate the effects of commercial building construction on major roads that result in increased traffic and the need for decongestion. |
| Special fees | Development charges at special rates set by the state government on lands, sites, and premises adjacent to or near ring roads, other highways, mass rapid transit, and light rail transit as defined in the Master Plan. |
| Value addition charges | Additional levy per square metre of built-up area in High-tech City area of Cyberabad where an information technology hub has been developed. |
| Rain-water harvesting charges | Levy per square metre of built up area for all categories of buildings. |
| Compounding fee | Fee for compoundable violations of building/layout regulations at a rate 33 per cent higher than normal fee. |
| Charges for unobjectionable projections into streets | Charges for unobjectionable projections into footpaths or streets by way of balconies, sheds, etc. |
| Open space contribution | Contribution from planned developments in plans that did not include the statutory minimum amount of open space (10% of the land value for park construction, compensating greening, etc.). |

Source: Greater Hyderabad Municipal Corporation Budgets and Accounts; Vyas, Vyas and Mishra (2022)

In addition to receiving compensation for the loss of profession tax, property tax from concessions to tax-paying groups, octroi, and motor vehicle tax, GHMC also receives shares in the surcharge on stamp duty and entertainment tax. In 2019–2020, GHMC received such revenues totalling Rs. 420.6 crore. The State Government's Surcharge on Stamp Duty, Entertainment Tax, and Profession Tax shares are not available to BBMP. Nonetheless, the State of Karnataka grants it a substantial sum in accordance with the recommendations of the State Finance Commission and choices made by State Governments. Under this heading, Bhubaneswar solely receives compensation in lieu of octroi.

According to the benefit taxation principle, some expenses with large inter-jurisdictional spillovers, lengthy gestation periods, or benefits distributed over multiple generations should be funded through intergovernmental transfers. For the ULBs, however, an overabundance of reliance on transfers from higher levels of government is problematic. This encourages reliance and increases ULBs' laziness. In India, local administrations frequently demand more funding from the federal and state governments without making sincere attempts to cut expenses or make the most of the budgetary tools at their disposal. Hyderabad is the city that depends on state and central transfers the least, according to data. These transfers account for around half of all municipal earnings in other ULBs, demonstrating their reliance on higher tiers. Thiruvananthapuram has the highest level of dependency, with state and central transfers accounting for more over 60 per cent of total municipal revenue. Moreover, the per centage has increased over the course of time. These patterns are shown in Table 14.

**Table 14: Combined Central Transfers and State Transfers for the Selected Municipal Corporations** (Rs. crore)

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 418 (2.37) | 392.3 (1.73) | 6378.3 (26.94) | 11910.8 (49.7) | 13292.9 (53.2) | 14411 (50.1) | 15638.2 (55.2) | 16620.6 (52.6) |
| Bengaluru | 1146.6 (33.65) | 3199.6 (53.00) | 3865.2 (55.90) | 4068.3 (43.6) | 1414.6 (32) | 1314.8 (30) | 5169.3 (59) | 2488.3 (38.4) |
| Hyderabad | 502.3 (19.83) | 461 (14.80) | 1060.4 (28.50) | 454.5 (15.6) | 573.7 (17.9) | 763.2 (20.8) | 428.4 (13) | 391.8 (11.4) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Thiruvananth-apuram | 130.2 (61.82) | 236 (64.78) | 242.2 (66.30) | 304.7 (61.7) | 333.9 (61.5) | 346.8 (61.9) | 564.4 (72.8) | 715.4 (74.2) |
| Bhubaneswar | 136.96 (53.11) | 132.81 (44.28) | 165.48 (49.20) | 225.6 (65.9) | 246.3 (72.6) | 246.6 (54) | 319.8 (65.7) | 323.9 (65.6) |

Source: Budget and Accounts of different years, Compiled from ICRIER (2019) and Verma et al. (2023)
Note: *Figures in the parentheses show central and state transfers as a per centage of total municipal revenue

The fiscal autonomy of a ULB can be gauged by comparing the ratio between its own revenues and transfers. These ratios are given in Table 15. These ratios indicate fiscal autonomy has been declining for all the municipal corporations except GHMC. The drastic fall in Mumbai's autonomy was due to the abolishment of octroi.

**Table 15: Fiscal Autonomy Ratio: Own Revenue / Combined Central Transfers and State Transfers**

| Municipal Corporation | 2012 -13 | 2016 -17 | 2017 -18 | 2018 -19 | 2019 -20 | 2020 -21 | 2021 -22 | 2022 -23 |
|---|---|---|---|---|---|---|---|---|
| Mumbai | 41.14 | 57 | 2.7 | 1.01 | 0.88 | 0.97 | 0.81 | 0.9 |
| Bengaluru | 1.5 | 0.9 | 0.8 | 1.3 | 2.12 | 2.34 | 0.7 | 1.6 |
| Hyderabad | 2.83 | 4.9 | 21.6 | 5.4 | 4.6 | 3.8 | 6.66 | 7.76 |
| Thiruvanan-thapuram | 0.62 | 0.54 | 0.51 | 0.62 | 0.63 | 0.62 | 0.37 | 0.35 |
| Bhubaneswar | 0.88 | 1.26 | 1.03 | 0.52 | 0.38 | 0.85 | 0.52 | 0.53 |

Source: Budget and Accounts of different years, Compiled from ICRIER (2019) and Verma et al. (2023)

***Tax Buoyancy: A Comparison***

Tax buoyancy gives the growth of tax revenue in relation to growth in GDP. It can be applied with both changes in tax base as well as policy changes (like tax rate). However, if tax mobilises greater revenue compared without any policy change like change in tax rate, it is said to be buoyant. Over the period of study, no major changes in tax rates have taken place thus, checking buoyancy could give proper results.

$$X = \alpha Y^{\beta}$$

Where, X = Tax Revenue

Y = GSDP (Gross State Domestic Product)

α = constant

β= Buoyancy

We undertake the following regression to arrive at β. The results are summarised in Table 16.

$$In\ Tax\ Revenue_t = \alpha + \beta \ln GSDP_t + \varepsilon_t \quad \text{(Equation 1)}$$

**Table 16: Buoyancy of Selected Taxes for the Selected Municipal Corporations**

| Municipal Corporation | Total Municipal Revenue | Property Tax |
|---|---|---|
| Mumbai | -0.93 | 0.47 |
| Bengaluru | 1.27 | 1.19 |
| Hyderabad | 0.57 | 0.42 |
| Thiruvananthapuram | 1.25 | 1.4 |
| Bhubaneswar | 1.26 | 1.37 |

Source: Own calculation

This analysis aims to explore the relationship between municipal revenue growth and GSDP growth. During the period under study, municipal revenues were mainly derived from octroi and property tax in Mumbai and primarily from property tax in other cities. A tax buoyancy greater than one signifies that tax revenues are increasing at a faster rate than the economy, indicating that the municipal revenue system is effectively capturing economic growth. However, as shown in the table, municipal revenues generally lack buoyancy, resulting from urban local bodies (ULBs) failing to capitalize on the agglomeration benefits that cities generate, which contribute to broader economic growth.

As seen in Table 16, the relationship between municipal tax growth and GSDP growth is generally positive, except in Mumbai. For Mumbai, the buoyancy of both total municipal revenue and property tax is below one. The negative buoyancy in total revenue reflects that municipal revenues are declining relative

to economic growth. This decline is attributed to the loss of octroi, a key revenue source, and the underutilization of property tax despite the adoption of a capital value assessment system in Mumbai. On the other hand, the relationship between municipal tax growth and GSDP growth in Hyderabad, Bengaluru, Thiruvananthapuram and Bhubaneswar is positive but of low magnitude. As implied by Equation 1, $\beta = \Delta T/\Delta Y$. Y/T revenue growth depends on several factors, such as tax base, tax rate, exemptions, and tax collection efforts.

Bengaluru exhibits positive buoyancy for both total municipal revenue and property tax, with both values exceeding 1. This indicates that Bengaluru's revenue system is robust, with tax revenues growing faster than the economy, possibly due to property tax reforms, such as the introduction of innovative unit-linked self-assessment schemes. In Hyderabad, total municipal revenue and property tax buoyancy are below one, with property tax being even less responsive to economic growth than total revenue. This is due to the fact that property tax rates have not been revised since the 1990s.

Thiruvananthapuram and Bhubaneswar both show buoyancy values above 1, indicating that total revenue and property tax revenues are growing faster than state-level economic growth, with property tax being particularly responsive. However, a closer look at Bhubaneswar reveals that the buoyancy is mainly driven by property tax growth due to introducing a unique user charge component, which was later struck down by the courts, leading to refunds of collected property taxes. Therefore, Bhubaneswar's municipal corporation needs to reassess its property tax system, including the tax base, rates, coverage, rationalization, exemptions, and collection strategies. Bhubaneswar still uses the holding tax system and has yet to fully implement the capital value method of taxation recommended by the 15th Finance Commission.

Municipal finances are in a precarious state. Outdated taxes, insufficient revenue mobilising mechanisms, limited tax sources and tax bases, excessive dependency on higher tiers and lack of borrowing are the major issues plaguing municipal finance regimes. Despite being ill-devised and outdated, property tax remains the sole municipal tax in most of the ULBs. More than 50 per cent of the tax revenue is generated by property tax. Advertisement tax mobilisation has been poor. Entertainment tax seems to be just existing as a

tax head, since, almost negligible funds have been raised under it. A major chunk of the municipal revenue is comprised of transfers from state and central governments. This shows that ULBs are highly dependent and do not perform well in own revenue mobilisation. The sadder part is that ULBs are not exploiting the available avenues. The autonomy ratio has also been showing a declining trend.

The problems are not just regarding revenue mobilisation but are rooted in the very structure of municipal finances. Thus, ULBs need a comprehensive and holistic approach towards municipal finance reforms. This should address the assignment of revenue sources, design of taxes, accountability and transparency ensuring mechanisms, efficient service delivery and revenue collection mechanisms. The benefit principle can act as the foundation of such reforms. Drawing lessons from the benefit principle and practices of successful municipalities, some approaches towards municipal finance reforms for Indian ULBs are discussed in the next section.

## 4. Directions for Improving Municipal Revenues

Indian city governments must implement a strong municipal finance reform system informed by the benefit principle, performance of successful ULBs and global best practices. Here are a few suggestions that can be considered:

### Property Tax Reforms

The property tax system needs to be reformed as quickly as feasible by all ULBs. They have the choice of using the Self-Assessment program in conjunction with either Bengaluru's Unit Area Method or Mumbai's Capital Value System. The local population may be strongly against the Capital Value System even though it is more effective because of the significant increase in property taxes. However, in order to ensure transfers, ULBs should proceed with a property tax system based on capital values, as per the orders of the 15th Finance Commission. Since the market value of a property is a good indicator of how its owners and tenants use the civic services, it would seem reasonable to use that value when determining the collective municipal services tax.

The reform agenda may include:

- All three policy variables—tax base, exemptions, and tax rate—as well as the three tax administration variables—coverage ratio, valuation ratio, and collection efficiency—must be taken into consideration while designing property tax reform. Resistance to high tax rates will come from the fact that property taxes are quite noticeable. Therefore, it is preferable to increase tax coverage while keeping tax rates low.
- Avoiding needless exemptions and comparable concessions on upkeep for both new and existing structures is advised. It is imperative that government properties are included in the tax registry. When granting such an exemption becomes necessary, urban local governments ought to get full compensation for the lost revenue.
- The first priority should be to register all significant properties, particularly "vacant and under-used lands, additions and alterations" to homes and unauthorised constructions.
- For tiny properties, a bulk tax connected to the plinth area would be suitable to prevent the enormous expense of obtaining data on the property, computing, collecting, and enforcing tax.
- The capital value of the land, as determined by the ready reckoner values released by the Registration Department for stamp duty purposes, may be the basis for the general tax component of property tax and vacant land tax levies. Using easily accessible land and property value data from already-existing government sources eliminates the need for time-consuming and expensive property-by-property appraisal.
- Adopting a GIS-enabled Management Information System (MIS) is required to address the inadequate data; full automation of the property tax management system, including records, is required. This includes data collection, tax levy, collection, account and record updating, tax notice generation, and more. For this, Bengaluru has developed a replicable methodology.

**Other Taxes**

For the majority of ULBs, the property tax is the only source of own tax revenue, despite being antiquated and ineffective. It is undesirable for ULBs to

rely too heavily on property taxes, and they ought to look into alternative forms of funding like:

- Advertisement Tax: Every hoarding, including those on public and private property, bus shelters, public service stations, etc., should be attempted to be included in the tax base.
- Entertainment Tax: Under the GST system, states are not allowed to impose an entertainment tax. Municipal corporations are able to take advantage of this. For example, Mumbai was able to collect entertainment tax of Rs. 1.25 crore from a single IPL match. A similar model should be attempted by other ULBs.
- Profession Tax: At the moment, the state government collects profession tax, and ULBs receive a portion of the revenue, as requested. It is appropriate to classify profession tax as a municipal tax. Additionally, the current ceiling on it has to be raised.

**Fees and User Charges**

According to the golden rule of public finance, user fees are the "first-best" way to ensure that the services rendered and the money received match. There must be an attempt to implement a town planning-related fee structure akin to Hyderabad. These devices release land's potential for cash generation. A variety of tools are available to monetise land value, including impact fees, betterment levies, premiums on Floor Space Index (FSI) relaxations, Transfers of Development Rights (TDR), vacant land tax, and others. Further, several types of cesses are collected by BBMP: a 15 per cent health cess, a 3 per cent beggarly cess, a 6 per cent library cess, and a solid waste management (SWM) cess connected to the building's plinth area. To make sure that instruments like the property tax's conservancy tax component, bulk rubbish collection fees, SWM cess, and tipping fee for sanitary dump sites may all be used to cover the expense of street cleaning, ULBs may want to look into implementing a SWM cess.

**Assigned Revenues and Compensations**

ULBs do not get any share in significant taxes. This is unfortunate because cities pay the largest share of these taxes. Among the taxes that ULBs ought to receive a portion of are:

- Stamp duty surcharge: The majority of properties are bought and resold in cities. Plots are particularly bought and sold on a big scale on the edges of expanding cities. Therefore, giving municipalities a portion of the profits is appropriate. For example, in Telangana, the Registration Department charges stamp duty equal to two per cent of the instrument's value, and the State Government distributes the entire amount to ULBs, including GHMC, on a quarterly basis. Other states must likewise implement a structure like this.
- Compensation for Profession Tax: State governments levy profession taxes even when they are eligible as municipal taxes. Local bodies should receive full devolution of the proceeds.
- Octroi Compensations: Primarily ad hoc payments are made against the octroi, rather than being based on a formula. Since the octroi was a significant tax revenue source, compensation need to reflect on this.
- Motor Vehicle Tax: Since most people own cars in cities, these areas are the main payers of the motor vehicle tax. Therefore, the motor vehicle tax should be compensated to municipalities. Around the world, a "local motor vehicle tax" is levied by numerous localities.
- Property Tax Compensations: In addition, ULBs ought to receive reimbursement for the money they lost as a result of various exemptions granted to government-owned assets or specific demographic groups.

**Sharing of GST**

The primary GST tax bases are cities. The ULBs have not received any of the GST revenue, which is divided between the federal and state governments. In order to replace or do away with taxes such as the Octroi, Motor Vehicles Tax, Entry Tax, and so on, the State Government may provide a formula-based fiscal transfer to all municipalities as compensation.

In addition to implementing national best practices and broad theoretical guidelines to direct the development of municipal finance systems and local resource mobilisation, it is imperative to examine and learn from cutting-edge global approaches.The spectrum of instruments that municipalities around the world have access to and could potentially employ in India is compiled in Table 17.

**Table 17: Revenue Instruments of Municipalities: International Practices**

| Category of Instrument | Description of Instrument and Countries/Provinces/Cities where practiced |
|---|---|
| Land-based Taxes | Property tax (Most countries); Vacant land tax (Brazil, Andhra Pradesh, Telangana State); Land value tax and Land value increment tax (Taiwan); Site value tax (Australia); Comprehensive real estate holding tax (Korea); Land gains tax (United States and Canada); Windfall tax (Ireland); Real property gains tax (Malaysia); Urban land tax (Tamil Nadu); Real estate transfer tax (United States, Andhra Pradesh, Tamil Nadu, Telangana State,) |
| Non-land based Taxes | Local income tax, Local sales tax, Local excise tax, Local payroll tax and based Taxes Local motor vehicles tax (United States, Europe); Profession tax (Andhra Pradesh, Kerala); Entertainment Tax (Andhra Pradesh, Telangana State); Advertisement Tax (Andhra Pradesh, Karnataka, Telangana State, West Bengal); Business licensing tax (Latin America); Water benefit tax and Sewer benefit tax (Mumbai); Utility user taxes (Chicago, Cape Town, Delhi) |
| User Charges | Water charges (Most cities); Pay as You Throw (PAYT) charges and Tipping fees (United States); Bulk garbage collection charges (Hyderabad) |
| Benefit Charges | Sewerage and storm drainage charges hooked onto water charges (Most countries); Special assessment districts (United States); Business improvement districts (Canada, United States); Betterment charges (*Contribucion de Valorizacion; ParticipacionenPlusvalias* and *Contrubuciones de Mejoras* in Latin America) |
| Shared Taxes | Income tax (Brazil, China, Japan); Value added tax (Argentina, Brazil, China, Spain); Excise tax (Japan, Peru, Punjab); Vehicle tax (Argentina, Brazil, Peru, Spain); Motor fuel tax (United States – dedicated to highways and transit); Business taxes (China, Latin America) |
| Shared General Revenues/ Transfers | Practically all countries, including Brazil, China, Nigeria, Philippines, and South Africa |
| Development Financing Tools | Developer exactions (United States); Impact fees (United States, Hyderabad, Ahmedabad); Developer contribution (Australia); Planning obligations (United Kingdom); Community infrastructure levy (United Kingdom); Incentive zoning (United States) |
| Value Capture Financing Tools | Sale of developer land (Most countries); Lease/sale of project-related land (Australia, France, China); Lease/sale of development rights (Floor space index charges - *OutorgaOnerosa do Direito de Construir*(OODC) in |

| | |
|---|---|
| | Brazil, Auctionable development rights - *Certificados de Potencial Adicional de Construcao* (CEPAC) in Brazil); Monetisation of land assets (Mumbai Metropolitan Regional Development Authority - Bandra-Kurla Complex); Joint development mechanism (Japan, China); Betterment taxes (Latin America); Tax increment financing (United States). |

Source: Bahl and Linn (1992), Bahl, Linn and Wetzel (2013) and Mohanty (2016)

One important takeaway from these practices is that a large municipal tax base is necessary to support the economic development, social welfare, and poverty alleviation needs of expanding cities. This is especially true for large cities, which are the main forces behind structural change and the expansion of the national economy.

## 5. Conclusion

India is becoming more and more urbanised quickly. Furthermore, India's metropolises are expanding at a never-before-seen pace. The "engines of growth" for the nation are these cities. These cities will continue to grow economically and geographically in the near future. In quest of employment, more migrants will relocate to these cities. More businesses will open up to take advantage of the agglomeration economies. However, unless cities provide the services, infrastructure, and civic amenities that these economic agents require, this growth momentum cannot be maintained. These needs are financed by municipal corporations, which also need stronger financial backing and improved governance to keep up with the demands of expanding cities and populations.

This paper examined the municipal financing structures of the Municipal Corporations of Bengaluru, Mumbai, Hyderabad, Bhubaneswar and Thiruvananthapuram. Over time, the municipal corporations of India have seen a decline in their financial situation. This has persisted despite certain earnest attempts to improve their financial situation. The cause has to do with the flaws in the municipal finance system itself. Not only are their tax bases small, but they are also not buoyant. However, a closer look at Bhubaneswar reveals that the buoyancy is mainly driven by property tax growth due to the introduction of a unique user charge component, which was later struck down by the courts, leading to refunds of collected property taxes. Therefore, the

Bhubaneswar Municipal Corporation needs to reassess its property tax system, including the tax base, rates, coverage, rationalization, exemptions, and collection strategies. These public bodies are not financially independent. Higher governmental-level transfers are necessary for municipalities to function. Further, they also do not exploit the tax bases already available to them including the land-based taxes.

Municipalities' financial situation has been worsening since the introduction of GST. The GST now includes a number of taxes, including the local body tax, advertisement tax, entrance tax, and octroi. In proportion to the amount of revenue lost as a result of this subsumption, compensation has not been given. Moreover, only the federal and state governments share GST. Despite being the major contributor (as regions) to such taxes, local governments have been excluded.

Restructuring the inadequate municipal finance system is necessary in order to make it a tool for planned urban development and economic expansion. The municipal tax base, including Bhubaneswar, should be broadened. This paper calls for urgently reforming the property tax regime, since it is the sole "own tax" for ULBs and pivotal in ensuring fiscal autonomy for these local bodies. An abrupt increase in tax rates is likely to be met with resistance. Hence, the focus should be on increasing the tax coverage using GIS Mapping and adopting the capital value method as per the recommendations of the 15$^{th}$ Finance Commission. The paper recommends exploring other forms of local taxes, including advertising tax, entertainment tax and professional tax. Mumbai's entertainment tax is worth replication. Hyderabad's town planning fee structure needs to be adopted by other ULBs. These devices can unleash the land's potential for revenue generation. The cess linked to the building's plinth area, collected by Bengaluru, sets an example for other ULBs. A Solid Waste Management cess may be imposed following the Bengaluru model. The ad-hoc transfer system also needs to be revamped, giving ULBs their due share. ULBs should be provided with a share of stamp duty surcharge and motor vehicle tax. The primary GST tax bases are cities. Hence, a formula-based fiscal transfer to all municipalities must be undertaken as compensation for taxes subsumed under GST. Furthermore, this structure must be followed with commitment, clarity, and consistency.

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Article

# Access to Finance, Investment Climate, and the Performance of Small and Medium Enterprises in India

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## Abstract

The study aims to examines how various access to finance and investment climate variables impact the performance of SMEs in India. Utilizing data from the World Bank Enterprise Survey (2014), encompassing 6996 Indian firms, the study evaluates firm performance through metrics such as capacity utilization, annual sales growth, labour productivity growth, and employment growth. Factors like firm age, operations, agglomeration, ownership, and industry type are considered to control for firm performance. The study reveals that the influence of access to capital and business climate indicators varies across different firm sizes. Specifically, access to finance, such as the proportion of fixed assets financed externally, positively impacts firm performance. In contrast, the effects of working capital financed externally and sales on credit show mixed results. Investment climate factors indicate that management time negatively affects performance, while the impacts of bribes and power outages are mixed and inconclusive. Additionally, firm performance decreases with a reduction in firm size, highlighting the use of indigenous technology and the lack of professional management in smaller firms.

**Keywords:** SMEs, access to finance, firm performance, investment climate

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## 1. Introduction

Access to finance and a favourable investment climate is critical for firm performance, especially in emerging economies where markets and institutions are less developed. Investment climate can be synonymously used as business environment/investment climate/business climate (Lakuma et al., 2019; Beck et al., 2006). Financial constraints are major obstacles to firm performance, with small firms facing more challenges than larger ones (Malhotra et al., 2007). Thus, access to capital is essential for firms to expand, innovate, operate, and invest.

The major objective of this article is to assess the impact of access to finance and the investment climate on the performance of Indian SMEs. This research is crucial because SMEs performance is vital for job creation, poverty eradication, and achieving the target of a five trillion-dollar economy in the medium term. This study expands previous knowledge on access to credit and institutional constraints for SMEs in India. Unlike past studies, it utilizes anextensive dataset from the World Bank Enterprise Survey (WBES) 2014 and employs various firm performance indicators namely employment growth, annual sales growth, capacity utilization, and labor productivity growth, whereas previous studies focused primarily on employment and sales growth (Lakuma et al., 2019; Aterido et al., 2011; Beck et al., 2005; Chauvet and Jacolin, 2017).

This paper is structured as follows: A review of literature is presented in Section 2. While Section 3 explains the framework for analysis Section 4 provides a comprehensive overview of the data and methodology. Section 5 contains the empirical findings. The study's conclusion is reported in Section 6.

## 2. Literature Review

Formal financial access is vital for firms' survival, growth, and expansion. Many MSMEs in India rely on informal financing due to difficulties in accessing formal sources. Constraints such as collateral requirements, high lending rates, rigid policies, lack of financial knowledge, and complex procedures hinder formal finance access. Saghir and Aston (2017) found that government regulations, high interest rates, and financial crises negatively affect access to financial resources. Beck et al. (2005) provided initial insights into financing constraints

and their impact on firm performance, finding that small-sized firms suffer more than big firms due to weak financial and institutional development.

Access to formal credit becomes more critical when debt procedures are complex, taxes are high, laws are rigid, and the business environment is unfavorable. In emerging economies, entrepreneurs face an unfavorable business climate with complicated registration, taxation, and commercial laws that affect firm performance (Ahmad, 2012). The business environment includes physical infrastructure, access to capital, and security, such as the absence of bribes and crime. Assessing the business environment is crucial since MSMEs often lack the managerial and financial resources to navigate complex procedures. Aterido et al. (2007) investigated the effect of various business environment determinants like access to credit, business regulation, corruption, and infrastructure bottlenecks, on job creation across firms of different sizes in a sample of 70,000 firms in 107 developing countries. They found that a weak business environment shifts the distribution of firm sizes downward, with business regulation and access to finance reducing employment growth, particularly in micro and small firms. Weak environment such as bribes and infrastructure deficiency reduces the growth offirms by reducing employment growth. Lakuma et al. (2019) and Aterido et al. (2011) explored the influence of investment climate on firm performance. Ezebilo et al. (2019) investigated how perceived public sector corruption by managers and owners affects firm performance, finding that corruption perceptions were tied to attempts to increase employment growth.

Institutional failures hinder MSMEs' performance, innovation, and competitiveness. Numerous studies have shown that corruption hampers firm growth. Sharma and Mitra (2015), Hanousek et al. (2017), and Fisman and Svensson (2007) confirm that corruption by firm owners and managers decreases growth. Conversely, Wang and You (2012) found that bribes enhance sales revenue for both state and privateowned firms in China.

Firm-specific variables namely location, sector, size, type, age, and ownership closely relate to firm performance. MSMEs face different obstacles based on these characteristics. Uddin et al. (2022) examined how firm-specific factors influenced MSMEs' access to finance during COVID-19 in India, finding that these characteristics affect financial accessibility. Enhancing MSMEs

performance is a key strategy for achieving national goals like job creation, poverty alleviation, and double-digit growth. Marketing and entrepreneurial skills are crucial for firm success, requiring organizational, managerial, and risk-taking capabilities (Carroll, 2004).

Studies measure firm performance through innovation, access to finance, quality certification, and other variables. Lakuma et al. (2019) analyzed the influence of financial limitations and investment climate variables on firm performance, using employment growth as a performance indicator. In their 2016 study, Hanousek and Kochanova looked at the correlation between bribery and business success in CEE nations, using labour productivity and sales growth as performance metrics. Ali (2016) studied the Indian agro and food processing industry, finding significant variations in firm performance based on the WBES (2014) data on 515 firms. Ratnawati (2020) explored that financial inclusion impacts on MSMEs performance through access to capital and financial intermediation, using variables namely profit growth, sales growth, workforce growth, and market share growth.

Pandey and Chaudhary (2024) examined the role of Indian MSMEs in India's economic growth. The study focuses on the importance of MSMEs in job creation, innovation, and regional development. The study findings suggest that MSMEs growth is hindered by inadequate access to finance, bureaucratic hurdles, and insufficient infrastructure. The study suggests targeted interventions to better support this sector, which is essential for India's long-term economic prosperity.

Similarly, Gupta and Singh (2023) investigate how financial limitations and the investment environment affect the productivity of SMEs in India. The study highlighted financial constraints, such as limited access to credit, which significantly hinder SMEs productivity by restricting their ability to invest in growth and innovation. Additionally, the study examined the role of the business environment, including regulatory challenges and infrastructure quality, in shaping firm performance. The findings suggest that enhancing access to capital and the investment climate are crucial for boosting SMEs productivity and fostering economic growth. The work underscores the need for targeted policy interventions to address these constraints and create a more supportive environment for SMEs development.

Jha and Mittal (2024) assessed the role of various financing patterns and firm-specific variables on the performance of listed SMEs in India. By analyzing panel data, the study identifies key factors such as capital structure, ownership, and firm size that significantly impact financial outcomes. The findings highlight that while external financing, particularly long-term debt, can enhance growth and performance, its effectiveness varies with firm characteristics. The study underscores the importance of tailored financing strategies and internal factors, suggesting that a nuanced approach to financing can better support the financial health and growth of SMEs in the Indian context.

Moreover, Altaf (2024) examined the influence of different working capital financing strategies on the performance and financial flexibility of hospitality firms in India. The research highlights that firms utilizing external sources for working capital financing, such as short-term loans and credit lines, experience improved performance metrics like profitability and operational efficiency. Additionally, the study finds that maintaining financial flexibility, the ability to adapt to changing financial conditions, is crucial for sustaining long-term growth and stability in the hospitality sector. The evidence suggests that strategic management of working capital and financial flexibility can significantly enhance the competitive edge of hospitality firms in the dynamic Indian market.

Given the literature, no study has examined the influence of access to finance and investment climate on SMEs performance in India using the WBES (2014) database. This study aims to bridge this gap. Its specific objectives are: to examine the impact of different determinants of finance on SMEs performance indicators in India, to investigate the effect of various investment climate variables on these performance indicators, and to explore how firm-specific variables such as sector, location, size, ownership, and age influence firm performance.

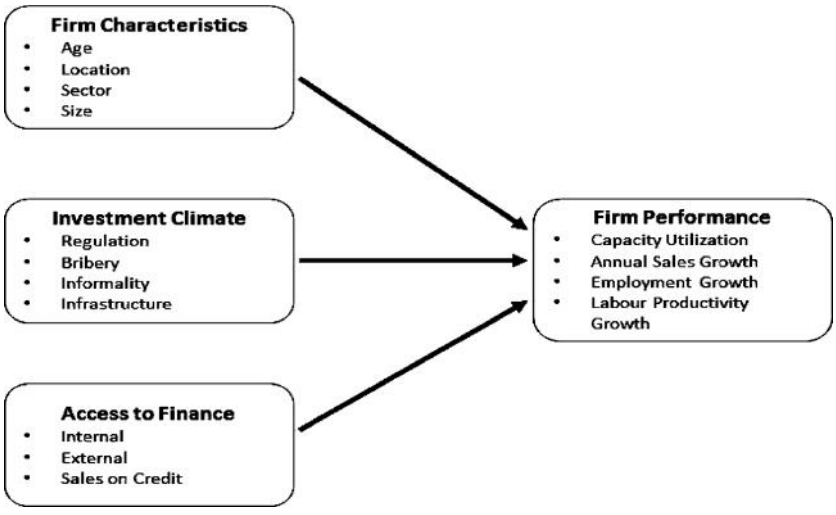
## 3. Analytical Framework

The importance of access to capital and the business environment on firm growth is widely debated among academicians and policymakers (Singh and Kumar, 2022). Schumpeter (1911) was among the first to highlight the significance of a well-developed financial system in firm growth and performance. In his theory of economic development, Schumpeter emphasized

that banks and finance are central to the innovation dynamics of a capitalist economy. Beck et al. (2005) further explored this concept by analyzing the structure of firms' financing constraints and their impact on firm performance. Their study revealed that small businesses suffer greater losses than large businesses due to weaker institutional and financial frameworks. Additionally, Aterido et al. (2007) found that the effect of various business environment factors, such as business regulation, bribes, and infrastructure, on job creation varies with firm size.

The theoretical insights on the effect of institutions on economic outcomes were extensively discussed by North (1990) in the new institutional literature. North argued that institutions are crucial in an economy with non-zero transaction costs. The concept of 'institutional void' describes how the underdevelopment of institutions leads to lower economic outcomes (Khanna and Palepu, 1999). A supportive environment for entrepreneurship comes from a network of institutions such as political, financial, legal, and regulatory systems (Mair and Marti, 2009; Estrin et al., 2013). Firm characteristics namely location, age, sector, and size also significantly affect firm performance (Lakuma et al., 2019). The roles of investment climate and access to finance are particularly critical for MSMEs, because small businesses benefit more from access to financing than large corporations (Beck et al., 2006).

**Figure 1: Impact of Access to Finance and Investment Climate on Firm**




Source: Authors' conceptualisation

**Performance**

Figure 1 illustrates the various indicators of access to capital, business environment, and firm characteristics that influence firm performance across different sizes. Access to credit variables, namely the share of fixed assets financed externally, the share of working capital financed externally, and the share of sales on credit, significantly impact firms' performance. Similarly, infrastructure, informality, bribery, and regulation play substantial roles in determining how well an enterprise performs. Firm-specific parameters, including location, sector, size, type, age, and ownership, are also strongly correlated with different performance indicators. Studies confirm that the institutional environment and firm-specific features, such as financial development, affect an organization's growth potential (Claessens and Tzioumis, 2006).

Access to capital, business environment, infrastructure, and bribes all affect firm performance. The investment climate is a framework that helps MSMEs expand. It includes the political, economic, and financial factors that affect people's and institutions' propensity to invest in and lend money to firms. Government openness, corruption-free zones, infrastructure, stable financial markets, and regulatory framework are important elements influencing investment climate. A favorable investment climate, characterized by efficient infrastructure, laws, courts, and financial markets, enhances entrepreneurial activities and boosts firm performance. Conversely, an adverse investment climate, marked by obstacles like inadequate public business infrastructure and restrictive regulations, hinders potential investors. Thus, a solid financial and institutional system is essential for regulating business effectively.

The access to credit variables used in the study are consistent with those employed by Lakuma et al. (2019), Aterido et al. (2011), and Beck et al. (2005). Similarly, the investment climate variables in this study align with those applied by Aterido et al. (2011) and Lakuma et al. (2019).

## 4. Data And Methodology

### 4.1 Data

The study uses the WBES (2014) dataset covers a sample of 6996 Indian SMEs. The methodology for data collection is detailed in the WBES. Firms were selected based on the availability of data on various variables relevant to this study. The sample includes firms from different sectors and sizes: 74 per cent are from the manufacturing sector (including food, tobacco, textiles, garments, leather, etc.), 3 per cent are from the retail sector, and 22 per cent are from other services (such as hotels, restaurants, IT, and motor vehicle services). Micro firms are referred as those with 1 to 4 permanent employees, small sized firms as those with 5 to 19, and medium-sized firms as those with 20 to 99 or more. This categorization is in agreement with the research of Aterido et al. (2011) and Lakumaet al. (2019). Accordingly, the dataset consists of 3,040 small firms and 3,956 medium firms.

The study incorporates variables from past empirical literatures (Aterido et al., 2011; Lakuma et al., 2019; Ali and Shabir, 2017; and Ali and Yusuf, 2021). Different firm performance variables are employed, including employment growth, annual sales growth,labour productivity, and capacity utilization, following Ali and Shabir (2017) and Ali and Yusuf (2021). To find the employment growth rate, we take the difference between the average number of permanent employees in 2010 and 2013 and divide it by the change in permanent employment over that time.

Table 1 summarizes the average employment growth, capacity utilization, annual sales growth, and labour productivity growth across different firm sizes, using the firm size from 2010 as a reference. The average firm growth rate for 2010-13 is 7.5 per cent. Annual sales growth reflects a 28.3 per cent change in total sales for the sampled firms from the previous year. Labor productivity is determined by dividing total sales by the number of permanent employees, with productivity growth calculated as the change from the previous period. The sampled firms show an average 19.7 per cent growth in labour productivity. Capacity utilization measures the output of a company as a proportion of the potential output if all materials are fully utilized.

**Table 1: Descriptive Statistics of Different Firm's Performance Indicators**

| Variable | Mean | Std | Min | Max |
|---|---|---|---|---|
| Employment growth | 0.075 | 18.644 | -1.200 | 1.729 |
| Annual sales growth | 0.283 | 0.808 | -1.000 | 12.333 |
| Labour Productivity Growth | 0.197 | 0.754 | -1.000 | 12.333 |
| Capacity Utilization | 0.802 | 0.169 | 0.020 | 1.000 |

Source: Authors' analysis

Factors affecting the business climate and the availability of capital are detailed in Table 2. The proportion of sales made on credit (sh-sales-cr), the proportion of working capital funded externally (work-cap-fin), and the proportion of fixed asset investment financed externally (sh-invest-fin) are the three metrics that are used to measure access to financing. According to Table 2, 32.71 per cent of firms rely on external finance for fixed asset investments, 34 per cent depend on external finance for working capital needs, and 54.96 per cent of firms sell their output on credit.

**Table 2: Variables Description of Access to Finance and Investment Climate**

| Variable | Description | Mean | Std |
|---|---|---|---|
| Sh-invest-fin | % Share of fixed assets finance externally | 32.71 | 38.51 |
| Sh- work-cap-fin | % Share of working capital finance externally | 34 | 33.11 |
| Sh-sales-Cr | Per centage of sales were sold on credit | 54.96 | 34.88 |
| Mng-time | % senior management's time spent dealing with management | 4.56 | 14.8 |
| Bribe Y-N | Gift or informal payments were requested | 0.18 | 0.38 |
| Days no power | Establishment experience power outages in 2012-13 | 0.64 | 0.47 |

Source: Authors' analysis

Investment climate variables are also summarized in Table 2. Managers of sampled firms spend an average of 4.56 per cent of their time interacting with authorities (mng-time). The bribe is measured by a binary variable indicating whether the enterprise was asked for a gift or payment to get things done (bribe

y-n), with 18 per cent of firms reporting being asked for informal payments. Infrastructure challenges are captured by the number of days the establishment experienced power outages, with 64 per cent of firms reporting power outages in the financial year 2012-13.

### 4.2 Methodology

The present study investigates how access to credit and business environment variables, along with firm-specific variables, affect firm performance. Utilizing ordinary least squares (OLS) regression, the study assesses the influence of various access to capital factors—such as sales sold on credit, the share of fixed assets financed externally, and the share of working capital financed externally—as well as investment climate factors, including management time, bribery, and power outages, on different performance indicators (employment growth, capacity utilization, annual sales growth, labour productivity growth). Moreover, robust standard errors are estimated and reported to address possible issues of heteroskedasticity. Each regression model (Eq. 1, 2, and 3) also incorporates firm-specific characteristics to provide anextensive analysis. The study explores these specifications to understand how these factors affect business outcomes.

$$\text{Performance of Firm}_i = \beta_0 + \beta_1\text{Access to financ}_i + \beta_2\text{small}_i + \beta_3\text{Exporter}_i + \beta_4\text{foreign ownership}_i + \beta_5\text{small city}_i + \beta_6\text{firm age}_i + \beta_7\text{manufacturing}_i + \epsilon_i \quad (1)$$

$$\text{Performance of Firm}_i = \beta_0 + \beta_1\text{Investment climate}_i + \beta_2\text{small}_i + \beta_3\text{Exporter}_i + \beta_4\text{foreign ownership}_i + \beta_5\text{small city}_i + \beta_6\text{firm'age}_i + \beta_7\text{manufacturing}_i + \epsilon_i \quad (2)$$

$$\text{Performance of Firm}_i = \beta_0 + \beta_1\text{Access to finance}_i + \beta_2\text{Investment climate}_i + \beta_3\text{small}_i + \beta_4\text{Exporter}_i + \beta_5\text{foreign ownership}_i + \beta_6\text{small city}_i + \beta_7\text{firm age}_i + \beta_8\text{manufacturing}_i + \epsilon_i \quad (3)$$

In equations (1), (2), and (3), we explore the influence of various access to capital and investment climate variables, alongside firm characteristics, on different performance indicators of firms: employment growth, labour productivity growth, annual sales growth, and capacity utilization. The study uses six experimental variables: sales sold on credit, the share of fixed assets financed externally, and the share of working capital financed externally to measure access to finance; and management time, bribery, and power outages to assess the investment climate. Additionally, the study incorporates various

determinants of firm performance, such as whether a firm is an exporter (defined as exporting 10 per cent or more of its output) or foreign-owned (defined as having 10 per cent or more foreign ownership). The location indicator classifies a firm as being in a small city if the city has a population of less than ten lakhs. A company's age is to look at how many years have passed since its establishment. Moreover, a dummy variable captures the industry-specific effect, with a value of 1 for manufacturing and 0 for other services.

## 5. Empirical Findings

This section reports the outcomes of the impact of different indicators of access to credit and business climate on the various firm performance indicators. Medium firms are the base category of firms.

### 5.1 Influence of Access to Finance and Business Climate on The Capacity Utilization of Firms

Capacity utilization is one of the important measures of the performance of the firms. Table 3 reports the influence of various access to credit and business climate variables on the capacity utilization of firms. The relationship in Eq. (1) with different access to finance variables is reported from Cases 1 to 3 in Table 3. Moreover, Cases 4 to 6 describe the relationship in Eq. (2) with different investment climate variables. Finally, the relationship in Eq. (3) is reported in Case 7. The coefficients of the sales on credit (-0.0978) negatively impact capacity utilization which implies sales on credit adversely affect firms' liquidity due to delayed payment. Thus, firms face the problem of delayed payment and fraud. Moreover, the share of working capital (-0.0309) is negative when the current firm's assets are less than its current liabilities. The study's finding shows that finance is helpful in firm performance; when financial access expands production capacity through fixed assets. However, if financial leverage is utilized for working capital needs, it negatively affects enterprise performance. Further, the impact of external finance on organizational performance varies with the firm's source of finance and size. The present study's empirical findings follow Lakuma et al. (2019) and Beck et al. (2006). Additionally, Zhang (2022) assessed the influence of financiallimitations on the capacity utilization of 4790 manufacturing organizations. The study observes that low access to finance hurts firms' capacity utilization.

**Table 3: Impact of Access to Finance and Business Environment on Capacity Utilization**

| Variables | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 |
|---|---|---|---|---|---|---|---|
| Access to finance | | | | | | | |
| Sh-invest-fin | 0.00897 | | | | | | 0.0129 |
| | (0.0120) | | | | | | (0.0172) |
| Sh-sales-cr | | -0.0978*** | | | | | -0.0424* |
| | | (0.00740) | | | | | (0.0236) |
| Sh-work-cap-fin | | | -0.0309*** | | | | -0.0734*** |
| | | | (0.00784) | | | | (0.0225) |
| Business environment | | | | | | | |
| Management-time | | | | -0.112*** | | | -0.117*** |
| | | | | (0.0221) | | | (0.0393) |
| Bribe | | | | | -1.590* | | 1.148 |
| | | | | | (0.846) | | (1.553) |
| Power Outages Yes | | | | | | -4.753*** | -3.468** |
| | | | | | | (0.533) | (1.674) |
| Small firms | -3.666*** | -2.962*** | -3.152*** | -2.677*** | -3.538*** | -2.887*** | -3.433** |
| | (0.968) | (0.484) | (0.493) | (0.579) | (0.730) | (0.486) | (1.511) |
| Exporter | 2.235* | 0.476 | 0.272 | -0.689 | 1.215 | 0.616 | 1.561 |
| | (1.227) | (0.639) | (0.644) | (0.795) | (1.013) | (0.642) | (2.472) |
| Foreign ownership | -3.905 | -4.055 | -4.257 | 0.542 | -6.741* | -3.335 | -0.0437 |
| | (4.873) | (2.941) | (3.090) | (3.321) | (3.618) | (2.912) | (3.715) |
| Small city | 3.241*** | -0.918* | -0.863 | -2.468*** | -1.999** | 0.383 | 3.149* |
| | (1.147) | (0.509) | (0.527) | (0.613) | (0.823) | (0.551) | (1.811) |
| Firm Age | -0.104*** | -0.130*** | -0.137*** | -0.145*** | -0.174*** | -0.136*** | -0.127** |
| | (0.0329) | (0.0176) | (0.0180) | (0.0210) | (0.0262) | (0.0177) | (0.0518) |
| Manufacturing | -14.42*** | -4.069 | -4.587 | -8.786* | -2.937 | -3.668 | Drop |
| | (4.945) | (4.915) | (4.713) | (5.136) | (5.672) | (4.629) | Drop |
| Constant | 90.83*** | 93.50*** | 89.34*** | 93.72*** | 86.58*** | 89.43*** | 82.95*** |
| | (5.115) | (4.937) | (4.738) | (5.154) | (5.701) | (4.641) | (2.873) |
| Observations | 1,508 | 5,252 | 5,291 | 3,623 | 2,584 | 5,317 | 620 |
| R-square | 0.030 | 0.053 | 0.022 | 0.032 | 0.029 | 0.034 | 0.073 |

Source: Authors' estimation

Note: Robust standard errors in parentheses (); ***, ** and * are the level of significance at 1, 5 and 10 per cent respectively

In Table 3, Cases 4 to 6 report the impact of business climate variables on capacity utilization. The coefficient of time spent by managers (-0.112) have negative impact on capacity utilization that reduces the efficiency of firms (Williams et al., 2016). Further, the bribe (-1.590) is negatively associated with capacity utilization, which shows to avoid bureaucratic delays, the firms go for informal payments, which raises the cost of production and decreases capacity

utilization. Moreover, if a firm is engaged in informal activities such as bribes, it will hamper the competitive ability of firms, and benefit from such activities. The investment climate variable power outage (-4.753) is found to be significantly negative to the firm performance. The findings follow Cissokho and Seck (2013). Their findings show that power outage increases production cost and reduces the efficiency of firms. Additionally, Ahiekpor et al. (2014) suggested that infrastructure bottlenecks like poor power supply and transport are the major reasons for low-capacity utilization.

Table 3 reports firm size negatively influences capacity utilization, implying that the capacity utilization of firms decreases with the firm's size. This is because most SMEs are labour-intensive, using indigenous technology which reduces efficiency and productivity. The effect of firm age on capacity utilization is negative because the firm lacks managerial skill, which creates inertia in decision-making and adversely affects capacity utilization (Goel and Nelson, 2021). The impact of exporter firms is positive on capacity utilization, which shows that the exporter firms are more efficient. Foreign ownership negatively impacts capacity utilization, indicating greater substitution from domestic production to foreign production (Goel and Nelson, 2021). This is because domestically owned firms enjoy government subsidies compared to foreign counterparts. The impact of a small city on firm performance is inconclusive. The manufacturing dummy is insignificant in Cases 1 to 6. Moreover, it is not included in Case 7 to avoid the problem of multicollinearity. The results show that capacity utilization is critical for firm productivity, and SMEs' capacity utilization is lower than large firms.

### 5.2 Impact of Access to Finance and Investment Climate on Annual Sales Growth of Enterprises

The annual sales growth is also essential for the firm's performance. Table 4 shows the influence of various access to capital and business climate variables on the annual sales growth of firms. The relationship in Eq. (1) with different access to finance variables is reported from Cases 1 to 3 in Table 4. Moreover, Cases 4 to 6 describe Eq. (2) 's relationship with different investment climate variables. Finally, the relationship in Eq. (3) is reported in Case 7. The coefficient of the sales credit (0.00106) positivelyimpacts annual sales growth in case 2. The rise in the share of sales credit leads to increased sales growth. Additionally, Zhang (2022) observed that SMEs are credit-constrained firms, and financially constrained firms do not use sales credit to increase sales.

In Table 4, Cases 4 to 6 report the influence of business climate on the annual sales growth. The result shows that bribe positivelyinfluences the annual sales growth with the coefficient value (0.0696). It is because, in India, owners of firms find an informal way to deal with government regulations, leading to an increase in sales. Ezebilo et al. (2019) report that corruption is positively linked with increased employment growth. Ayaydin and Hayaloglu (2014) experienced a positive link between bribes and the growth of Turkish manufacturing enterprises. The study also found that corrupt officials could boost economic growth by facilitating the use of unlawful techniques and expediting money to circumvent bureaucratic red tape. Moreover, government employees can accept bribes as a work incentive and enhance efficiency. The coefficient value ofpower outage is (0.0667) shows power outages positively impacts sales growth, implying that firms are mostly dependent on alternative power sources.

**Table 4: Impact of Access to Finance and Business Environment on Annual Sales Growth**

| Variables | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 |
|---|---|---|---|---|---|---|---|
| Access to finance | | | | | | | |
| Sh-invest-fin | 0.00897 | | | | | | 0.0129 |
| | (0.0120) | | | | | | (0.0172) |
| Sh-sales-cr | | -0.0978*** | | | | | -0.0424* |
| | | (0.00740) | | | | | (0.0236) |
| Sh-work-cap-fin | | | -0.0309*** | | | | -0.0734*** |
| | | | (0.00784) | | | | (0.0225) |
| Business environment | | | | | | | |
| Management-time | | | | -0.112*** | | | -0.117*** |
| | | | | (0.0221) | | | (0.0393) |
| Bribe | | | | | -1.590* | | 1.148 |
| | | | | | (0.846) | | (1.553) |
| Power Outages Yes | | | | | | -4.753*** | -3.468** |
| | | | | | | (0.533) | (1.674) |
| Small firms | -3.666*** | -2.962*** | -3.152*** | -2.677*** | -3.538*** | -2.887*** | -3.433** |
| | (0.968) | (0.484) | (0.493) | (0.579) | (0.730) | (0.486) | (1.511) |
| Exporter | 2.235* | 0.476 | 0.272 | -0.689 | 1.215 | 0.616 | 1.561 |
| | (1.227) | (0.639) | (0.644) | (0.795) | (1.013) | (0.642) | (2.472) |
| Foreign ownership | -3.905 | -4.055 | -4.257 | 0.542 | -6.741* | -3.335 | -0.0437 |
| | (4.873) | (2.941) | (3.090) | (3.321) | (3.618) | (2.912) | (3.715) |
| Small city | 3.241*** | -0.918* | -0.863 | -2.468*** | -1.999** | 0.383 | 3.149* |
| | (1.147) | (0.509) | (0.527) | (0.613) | (0.823) | (0.551) | (1.811) |
| Firm Age | -0.104*** | -0.130*** | -0.137*** | -0.145*** | -0.174*** | -0.136*** | -0.127** |
| | (0.0329) | (0.0176) | (0.0180) | (0.0210) | (0.0262) | (0.0177) | (0.0518) |
| Manufacturing | -14.42*** | -4.069 | -4.587 | -8.786* | -2.937 | -3.668 | Drop |
| | (4.945) | (4.915) | (4.713) | (5.136) | (5.672) | (4.629) | Drop |
| Constant | 90.83*** | 93.50*** | 89.34*** | 93.72*** | 86.58*** | 89.43*** | 82.95*** |
| | (5.115) | (4.937) | (4.738) | (5.154) | (5.701) | (4.641) | (2.873) |
| Observations | 1,508 | 5,252 | 5,291 | 3,623 | 2,584 | 5,317 | 620 |
| R-square | 0.030 | 0.053 | 0.022 | 0.032 | 0.029 | 0.034 | 0.073 |

Source: Authors' estimation

Notes: Robust standard errors in parentheses (); ***, ** and * are the level of significance at 1, 5 and 10 per cent respectively

Table 4 shows that firm age and size coefficient is negative and significant to firm growth. The negative sign of the coefficient is that firms are using obsolete technology, leading to increased prices due to raised costs. Yasuda (2005) analysed a negative link between firm age, size,and firm growth in Japanese manufacturing industries. The negative impact of a small city on sales growth shows the unavailability of resources such as raw materials, skilled workers, and infrastructure needed for firms' production. Further, the positive sign of manufacturing firms shows that manufacturing sectors are more productive than other service sectors. The manufacturing sector's growthis directly linked to the development strategy because of its contribution to economic growth, trade, job creation, and efficiency (Zhang, 2022). The results confirm that sales growth is important for increasing a firm's profitability, and SMEs' sales growth is observed lower than large firms.

### 5.3 Influence of Access to Finance and Investment Climate on Employment Growth of Enterprises

Employment growth is a critical indicator of the performance of the enterprises. Table 5 reports the impact of various access to capital and business climate determinants on employment growth. The relationship in Eq. (1) with different access to finance variables is reported from Cases 1 to 3 in Table 5. Moreover, Cases 4 to 6 describe the relationship in Eq. (2) with different investment climate variables. Finally, the relationship in Eq. (3) is reported in Case 7.The coefficient value of the share of investment in working capital is (0.0003) shows positively influence of access to capital variables on employment growth is positive, however, its magnitude is very small.The outcomes show that firms having better access to finance help them to increase their sales through the firm's output which increases profit and expands employment. Further, Brown et al. (2005) also observed that external credit access positively influences employment. In contrast, Fowowe (2017) found access to credit negatively impacts the employment growth of African SMEs.

**Table 5: Impact of Access to Finance and Business Environment on Employment Growth**

| Variables | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 |
|---|---|---|---|---|---|---|---|
| Access to finance | | | | | | | |
| Sh-invest-fin | -0.000164 | | | | | | -0.000224 |
| | (0.000121) | | | | | | (0.000216) |
| Sh-sales-cr | | -9.23e-06 | | | | | -0.000161 |
| | | (7.17e-05) | | | | | (0.000224) |
| Sh-work-cap-fin | | | 0.000330*** | | | | 0.000213 |
| | | | (7.37e-05) | | | | (0.000242) |
| Business environment | | | | | | | |
| Management-time | | | | -0.000112 | | | -0.00110*** |
| | | | | (0.000149) | | | (0.000307) |
| Bribe | | | | | 0.00439 | | 0.0421** |
| | | | | | (0.0103) | | (0.0214) |
| Power Outages | | | | | | 0.00139 | -0.00458 |
| | | | | | | (0.00517) | (0.0166) |
| Small | -0.0192** | -0.0184*** | -0.0166*** | -0.0144*** | -0.0286*** | -0.0186*** | -0.0208 |
| | (0.00927) | (0.00473) | (0.00471) | (0.00550) | (0.00737) | (0.00468) | (0.0162) |
| Exporter | -0.00316 | -0.0116* | -0.0127** | -0.00310 | -0.00219 | -0.0113* | 0.0153 |
| | (0.0126) | (0.00647) | (0.00638) | (0.00793) | (0.00960) | (0.00635) | (0.0200) |
| Foreign ownership | -0.0247 | -0.0531** | -0.0539** | -0.0330 | -0.0926*** | -0.0540** | -0.0937*** |
| | (0.0337) | (0.0263) | (0.0255) | (0.0203) | (0.0346) | (0.0250) | (0.0128) |
| Small city | -0.0108 | -0.0231*** | -0.0249*** | -0.0300*** | -0.00957 | -0.0235*** | -0.0120 |
| | (0.0103) | (0.00497) | (0.00492) | (0.00586) | (0.00794) | (0.00529) | (0.0180) |
| Firm Age | -0.00222*** | -0.00161*** | -0.00161*** | -0.00169*** | -0.00201*** | -0.00164*** | -0.00256*** |
| | (0.000312) | (0.000172) | (0.000171) | (0.000207) | (0.000274) | (0.000171) | (0.000537) |
| Manufacturing | -0.00915 | -0.0176*** | -0.0205*** | -0.0222*** | -0.0135 | -0.0179*** | -0.00389 |
| | (0.0102) | (0.00622) | (0.00561) | (0.00631) | (0.00928) | (0.00559) | (0.0175) |
| Constant | 0.157*** | 0.145*** | 0.137*** | 0.147*** | 0.149*** | 0.145*** | 0.167*** |
| | (0.0127) | (0.00700) | (0.00679) | (0.00779) | (0.0112) | (0.00704) | (0.0239) |
| Observations | 2,029 | 6,772 | 6,924 | 5,079 | 3,172 | 6,951 | 800 |
| R-square | 0.028 | 0.021 | 0.025 | 0.024 | 0.024 | 0.022 | 0.045 |

Source: Authors' estimation
Note: Robust standard errors in parentheses (); ***, ** and * are the level of significance at 1, 5 and 10 per cent respectively

In Table 5, Cases 4 to 6 report the influence of business climate variables on employment growth. The coefficient value of management time in case 7 is (-0.0011) which shows that the impact of managers' spent time dealing with regulations on employment is significantly negative. Further bribe positively

influences employment growth with a significant value of (0.0421) in Case 7, implying that using informal payments to avoid bureaucratic complex procedures and time-consuming government regulations such as taxes, customs, licensing, and registrations negatively affects employment growth. This is also because a weak business climatehurdles the growth of SMEs (Aterido et al., 2011). The overall growth of employment is found to be lower as compared to medium firms. Further, the age and location of firms in small cities constrain employment growth. This is because SMEs use outdated technology which decreases firms' efficiency and employment. Moreover, other sectors are better for employment growth than the manufacturing sector. Therefore, the skilling of labourers and the use of modern technology is critical to enhance efficiency and employment (Singh et al., 2023).

### 5.4 Influence of Access to Finance and Business Climate on Labour Productivity Growth of Enterprises

Table 6 reports the influence of various access to capital and business climate variables on the labour productivity growth. The relationship in Eq. (1) with different access to credit variables is shown from Cases 1 to 3 in Table 6. Moreover, Cases 4 to 6 describe the relationship in Eq. (2) with different investment climate variables. Finally, the relationship in Eq. (3) is reported in Case 7.The coefficient value of sales credit is (0.000967) which reports thatsales credit positively impacts the efficiency of labour which implies an increase in sales credit tends to enhance sales and profit, causing an increase in the efficiency of the labour due to the rising wages of labourers. In the study of Demirguc et al. (1998) it was found that trade credit facility allows for gaining profit for financially constrained firms. Further, it increases investment in technology which improves the efficiency of firms and boosts the firm performance. Moreover, other access to finance variables are found to be statistically insignificant. The only investment climate variable, power outages with a coefficient value of (0.0562) indicates that power outages positively affect labour productivity growth, implying firm dependency on alternative energy sources. SMEs are mostly labour-intensive, and the findings reveal those operating in small cities have positively influenced labour productivity growth. Finally, it is observed manufacturing firms are performing better in terms of labour productivity growth than other sector firms. The findings of the present study confirm labour productivity growth of SMEs is lower than large firms.

The productivity gap of the firm across sizes is increasing due to market concentration and leads to an increase in income inequality. Hence, there is an urgent need to focus on labour productivity drivers such as management and workforce skills, enterprise formalization, business digitalization, and access to social protection.

**Table 6: Impact of Access to Finance and Business Environment on Labour Productivity Growth**

| Variables | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 |
|---|---|---|---|---|---|---|---|
| Access to finance | | | | | | | |
| Sh-invest-fin | 0.000377 | | | | | | 0.000235 |
| | (0.000444) | | | | | | (0.000604) |
| Sh-sales-cr | | 0.000967*** | | | | | 0.000731 |
| | | (0.000280) | | | | | (0.000553) |
| Sh-work-cap-fin | | | 3.83e-05 | | | | 0.000214 |
| | | | (0.000304) | | | | (0.000810) |
| Business Environment | | | | | | | |
| Management-time | | | | -0.000312 | | | 0.000617 |
| | | | | (0.000417) | | | (0.000966) |
| Bribe | | | | | 0.0525 | | -0.0222 |
| | | | | | (0.0377) | | (0.0599) |
| Power Outages | | | | | | 0.0562*** | 0.0534 |
| | | | | | | (0.0199) | (0.0391) |
| Small | 0.0198 | 0.0150 | 0.0175 | 0.0284 | 0.0345 | 0.0162 | 0.0938* |
| | (0.0388) | (0.0192) | (0.0193) | (0.0217) | (0.0238) | (0.0188) | (0.0526) |
| Exporter | -0.0694* | -0.0258 | -0.0188 | -0.0265 | -0.00994 | -0.0235 | 0.0398 |
| | (0.0375) | (0.0207) | (0.0202) | (0.0245) | (0.0291) | (0.0203) | (0.0864) |
| Foreign ownership | -0.0956 | -0.0562 | -0.0592 | -0.128*** | -0.0142 | -0.0614 | -0.184** |
| | (0.0629) | (0.0594) | (0.0577) | (0.0472) | (0.0791) | (0.0561) | (0.0841) |
| Small city | -0.0114 | 0.0434** | 0.0449** | 0.0479** | -0.0107 | 0.0263 | 0.00136 |
| | (0.0406) | (0.0196) | (0.0193) | (0.0217) | (0.0260) | (0.0205) | (0.0466) |
| Firm Age | -9.91e-05 | 0.000146 | 0.000144 | -0.000356 | -5.30e-05 | 0.000223 | -0.000362 |
| | (0.00156) | (0.000820) | (0.000799) | (0.000878) | (0.000808) | (0.000809) | (0.00132) |
| Manufacturing | 0.0176 | -0.0245 | 0.00750 | 0.0222 | 0.0242 | 0.00773 | -0.0333 |
| | (0.0365) | (0.0232) | (0.0213) | (0.0214) | (0.0225) | (0.0207) | (0.0447) |
| Constant | 0.168*** | 0.129*** | 0.150*** | 0.141*** | 0.141*** | 0.128*** | 0.0638 |
| | (0.0614) | (0.0280) | (0.0268) | (0.0268) | (0.0320) | (0.0294) | (0.0772) |
| Observations | 1,839 | 6,200 | 6,303 | 4,603 | 2,923 | 6,320 | 739 |
| R-squared | 0.002 | 0.003 | 0.001 | 0.002 | 0.002 | 0.002 | 0.010 |

Source: Authors' estimation

Note: Robust standard errors in parentheses (); ***, ** and * are the level of significance at 1, 5 and 10 per cent respectively

In most cases, a low R square value is observed. However, in cross-sectional studies, it is very common to have a low R square. The low R square values are also observed in the studies of Amos and Zanhouo, 2019; Ullah, 2020; and Motta, 2020. Moreover, R square matters if the aim of the study is prediction. In the current case, the effect of experimental variables on various firm performance indicators is investigated based on statistical inference, and the choice of variables in the study is in line with the theoretical framework.

## 6. Conclusion and Policy Implications

The outcome of the studysuggests that the financial and institutional constraint adversely affects the performance of small firms and benefits medium and large firms. The study's outcomes show that access to credit through the share of fixed assets finance is helpful in SMEs' firm performance. However, the working capital financed externally and the saleson credit have mixed effects on the performance of firms. Long-term investments lead to expansion in the size of the firm, which is beneficial for them. In contrast, if the firm gets access to finance for working capital, it can worsen the firm's situation. Therefore, external finance to fund investment helps increase SMEs' growth in India.

Further, the finding suggests that an increase in the time spent with officials dealing with regulation by business owners and managers negatively affects the firm performance of SMEs. SMEs go for informal payments to avoid bureaucratic delays. Therefore, informality enhances firm performance due to weak institutional quality and parent-client politics (Williams et al., 2016, Singh, 2021). The power outage has a mixedinfluence on the different firm performance indicators, and the finding is inconclusive in the Indian case. The overall influence of the business climate variable on the growth of firm suggests that SMEs benefit from informality and weak laws.

In India, investment climate and access to credit conditions are favourable for medium and large-sized firms. Larger firms face fewer obstacles because of their size and access to the market (Beck et al., 2005). Nair and Das (2019) in

their study on Indian MSMEs found that financial policies since the 1970s have failed to support MSMEs. The Expert Committee on MSMEs (Sinha, 2019) suggested deepening the credit market for MSMEs. Further, the Indian government has introduced several schemes and policies to improve credit flow to MSMEs, such as the MUDRA and Refinance Agency and the CGTMSE Micro and Small Enterprise. However, these initiatives have failed to address the financing gap. Therefore, the study's outcomes suggest that the government ought to intervene to bolster SMEs and along with improving access to credit, investment climate conditions should also be enhanced for better economic outcomes.

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*Article*

# Literary Representations of the *Bazaar*: Perspectives from Early Modern Odisha

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## Abstract

This paper offers close readings of three early modern Odia narratives on the *bazaar*. Composed in the folk genres of *boli* and *katha*, these narratives construct fictional scenes where sellers, buyers, and middlemen come together to forge among them transactional relationships, and invite the reader to partake in the aesthetic *rasa* of light amused curiosity. The paper situates its close readings in a larger comparative intellectual history. It borrows the conceptual lenses of polite society and ordinary human flourishing from the historiography of early-modern Europe and seeks to explore the presence of comparative formations in Odia discursive realms in the long eighteenth century. It argues that a discursive trend to envision a social body around the pursuit of genteel social status via the tasteful practice of consumption, around the language of transactional agreeability was available on a minor key in these folk genres. It thus excavates the presence of a comparable form of early modernity in the region.

**Keywords**: Bazaar, market, Odia literature, *boli*, *katha*, Upendra Bhanja, Modernity, Ordinary Human Flourishing, Polite Society

## Introduction

How did early modern Odia literature represent the *bazaar*? Historians have argued that by the close of the seventeenth century, Odisha was integrated

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into a global commercial system. European trading companies-the Dutch, the English, the Portuguese and the Danes-had opened factories and settlements in various port towns on the seacoast. Commerce had acquired a great degree of specialization and sophistication. Commercial integration was accompanied by the development of a credit and banking system that financed trade (Das Mohapatra, 1996: 61-67). Port towns such as Balasore on the coast emerged as centers for inter-provincial, and long distance trade. Centers of administration and pilgrimage such as Cuttack and Puri also emerged as major urban marts. In addition, there were inland markets such as Hariharpur and Berhampur that were centers of textile manufacture, and supplied goods to the port towns. Some other inland marts such as the one at Kantilo on the river of Mahanadi were not centers of manufacture but emerged as major centers of trade on account of their geospatial location. There were rural weekly markets such as the one at Mausampoor that sat twice in a week and catered to local needs. Textile and food grain were the major articles of export. Textile went from the region to upland centers in the north such as Hugli, Patna and Agra. Food grains travelled southwards along the Coromandel coast (Das Mohapatra, 2011: 165-186). Given this history of fairly extensive commercial entrepreneurship in the province, it is useful to explore the literary language the people evolved to represent a set of themes that are associated with polite society and ordinary human flourishing - freedom of exchange, transactional relationships, excitement of display, desire and consumption, and orderly conduct of everyday affairs, so on and so forth.

Both the conceptual terms, "polite society" and "ordinary human flourishing," have long established presence in the historiography of Europe. For social historians of Britain in the eighteenth-century, *politeness* served as a descriptive marker of a propertied middleclass that vigorously pursued a genteel social status. Paul Langford observes that, "This was an ambiguous term. It was naturally associated with the possession of those goods which marked off the moderately wealthy from the poor, the trappings of propertied life" (Langford, 1989: 71). At the same time,"It also included the intellectual and aesthetic tastes which displayed the continuing advance of fashion in its broadest sense" (Langford, 1989: 71). Most importantly,"it affected the everyday routines and rules of social life, from matters as trivial as the time at which one dined, and

the way one ate one's dinner, to matters as important as the expectations and arrangements of partners in marriage" (Langford, 1989: 71). This pursuit of politeness united a large class of people who were diverse and divided in other respects.

For historians of literary and moral culture, *politeness* was a specific form of language or discourse which brought an order to social life. Lawrence Klein writes that as a form of language, *politeness* promoted the "remaking of the world in a gentlemanly image," and underlined "refined sociability" or "social agreeableness" as the preeminent "interpretive scheme" or "way of comprehending the values" that informed social interactions, cultural expressions and manners at large. The discourse of politeness was ideological in the sense that it sought to bring order to a "pre-industrialist" society without the employment of repressive force (Klein, 1994: 7-10). It offered the "scene of gentlemen in polite conversation as a model for discursive and cultural activity and authority" (Klein, 1994: 9). On the one hand, this model "offered a way to conceptualize complex and erratic social phenomena, giving them normative shape and direction" (Klein, 1994: 9). On the other hand, "it served as a blueprint for social and cultural creation, authorizing specific forms of activity and distributing authority in prescribed ways" (Klein, 1994: 9)[1].

As for ordinary human flourishing, Charles Taylor provides the well-known account. Every society formulates its conception of human flourishing - that is, of a fulfilled human life (Taylor, 2007:16). With the advent of secular modernity in Europe, he argues, a conception of "a purely self-sufficient humanism came to be a widely available option," and it unfurled the vision of an ideal human life that accepted "no final goals beyond human flourishing (Taylor, 2007: 18)." A transcendent God no longer remained central to the conception of a fulfilled human life. Worship and love of God independent of human flourishing was not the most popular model any more. Rather, ordinary flourishing on the earth - economic prosperity derived from ordered, peaceful and productive human industry as well as collaboration and exchange - provided an increasingly acceptable vision of fulfilled human life. Pursuit of this ordinary

[1] Also, see Klein's (1994: 154-194) discussions on how Earl of Shaftesbury's Whig moral project mobilizes the concept of politeness for a critique of the church as well the royal court.

human flourishing - this culture of industry and exchange constituted the polite society—came to be accepted as the pursuit of God's design for human beings (Taylor, 2007: 16-17, 229).[2] This social imaginary, Taylor argues was a constitutive element of the Western experience of modernity, and invites comparative reconstructions of alternative experiences of modernity in non-Western societies (Taylor, 2004: 1-2).

To carry the conceptual terms of *politeness* and *ordinary human flourishing* over to India to study discourses about the market circulating in early modern Odisha is to undertake a project of comparative, but not necessarily connected, intellectual history.[3] The link between *politeness* and Odia literary representations of commercial prosperity is supplied by the modern historian. It does not exist in the intention of the historical agent, the early modern gentleman in Britain or in the characters who populate the scenes of the market in Odia literature of the long eighteenth century. We are then not looking for social equivalents but rather for kindred formations in India.

How then did early modern Odia literature represent the market? The present paper will formulate a preliminary response to this central question. It will offer close readings of three Odia language narratives from the long eighteenth-century. The first one, "*Bajara Boli*," is a short poem by the famous poet Upendra Bhanja of the Ghumsar royal house.[4] It offers a description of an amorous man about town visiting the local market or *hata* and holding an extended light-hearted banter with the witty and loquacious women sellers. The second, "*Hata Boli*," is another short poem by the equally well-known Vaishnava poet, Dinakrushna Das.[5] It describes how Shri Ram visits a *hata* and delineates the kinds of people, commodities, and conversations he comes across. The third, "*Prastab Chintamani*," is a prose romance composed by Nilambar Bidyadhar, a

[2] Also see, Taylor, 2004, pp. 15, 76. Taylor, *A Secular Age*, 16-17, 229.

[3] I draw this distinction from Sudipta Kaviraj. See, Kaviraj, "Global Intellectual History: Meanings and Methods," 295-319.

[4] Bhanja," *Bajar Boli*. "A wide range of scholarship is available on Upendra Bhanja. For an introduction, see Bal, 2002.

[5] Das, "Hata Boli. " There are a number of studies on Dinakrushna. For an introduction, see Mohanty, 1985, and K. C. Mishra, 1998-2000.

minor author who belonged to the Khallikote royal house.[6] It includes an elaborate market scene that is deeply informed by formal realism - the scene invites the reader to experience the fictional market and become a part of it. The first two compositions belong to a genre of verse narrative known as *boli*. Scholars have compared the genre with the English *ballad*, and have classified it under the rubric of folk-literature. Composed in spoken language, *boli* literature often offers portraits of contemporary social life (Jena, 1983: 11-12). The last narrative under study belongs to a genre known as *katha*. That is the term the author uses to describe the literary work he performs (Bidyadhar, 1977: 29). The genre relates imaginary stories, often portrays details of contemporary social life, and aims to entertain its audience. Scholars have classified it again as folk-literature.[7] In their different ways, all three texts seek to develop a language that can adequately represent a set of kindred themes associated with polite society and ordinary human flourishing.

The paper argues that engagement with commercial prosperity in the first two genres was tied to other immanent and transcendental goals - poetic virtuosity and trust in God in the eventual object of poetic contemplation. In contrast, this engagement acquired a self-sufficient tone in the prose narrative - commercial prosperity in itself is the object of reflection and joy. In this latter context, themes of orderly social life, fashionable consumption, and refined sociability emerge with most clarity. The poems were composed in the earlier decades of the eighteenth century whereas the prose narrative was written towards the close of the period.[8] However, the relationship between the three is not one of a teleological progress from the first two styles to the last. Rather, all three styles were available for literary engagement with the polite commercial society of Odisha in the period.

Upendra Bhanja's poem is built around a series of verbal exchanges between a *nagara* - an urban, polite lover, and several *nagari*-urban sportive women. The

[6] Bidyadhar, *Prastab Chintamani*.

[7] Mishra, *Adhunika Katha Sahitya,* 11. For a short discussion of *katha sahitya* in early modern Odia literature, see the first chapter.

[8] Both Upendra Bhanja and Dinakrushna Das are considered to be active in late seventeenth and early eighteenth centuries. And, scholars have suggested that Bidyadhar composed *Prastab Chintamani* around 1786. Bidyadhar, 1977, 8.

man about town goes to visit a market. He comes across a number of women selling various articles. Some times, the woman is identified by the commodity she sells-for instance, the "*kamala-pasara-bali*" or "the orange-basket-girl" (Bhanja, n.d., 1). On several occasions, the woman is described by her social identity- for instance, the "*kuralabadhu*" or "the married potter-girl" (Bhanja, n.d.: 8) or the "*kansaribama*" or "the beautiful-brazier-woman" (Bhanja, n.d.: 9). The man about town visits each seller and inquires about the quality and the price of the article she has brought for sale. The play of the language is such that this seemingly innocuous query carries other risqué meanings. The sportive woman grasps the game of language and responds in a similar manner. The man moves from one seller to another—this movement lends the poem its serial structure. One double entendre follows another till the poem comes to a close. In other words, the plot remains open-ended. The following exchange between the *nagara* and the *nagari* will provide us a sample of the atmosphere of the poem.

'Someone says to the orange-basket-girl
"How much for your pair of oranges?
Show me, I want to see, and finalize a price
O tell me, how much will you take?"
"Air and water have not spoiled my oranges,"
Says she, "they have grown with a lot of care,
See, fresh they are, their fragrance spreads in the air"' (Bhanja, n.d.: 1-2).

Bhanja's poem does not aim to describe a fictional market. His language does not aim to achieve a referential density. That is, it does not provide details about the individuality of the actors. It does not provide the particulars of the time or the space in which the exchange between the actors takes place. His narrative procedures are not interested to formally evoke a market. Rather, Bhanja's language aims to engage with itself. That is, what the poem draws attention to is the ability of poetic language to carry multiple meanings. The actors are important to the extent that they help the poet to display the possibilities inherent in language. So what does the setting of the poem - the dialogues unfold in a market - contribute to its meaning? It helps the poem evoke a "market relation" between the "*nagara*" and the "*nagari*." This relationship rests, in principle at least, on a freedom of exchange as opposed to coercion. In the closing quatrain, Bhanja evokes and delights in this hypothetical

freedom of exchange. Here is the quatrain:

"Says Upendra, the most valorous among the *bhanja*s
Those are indeed *nagari*s
Who see a *nagara* and respond with a repartee
Praise be upon their fine wit" (Bhanja, n.d.: 21).

"*Pratiuttara*" is the Odia word that Bhanja uses to describe the response of the urban sportive woman. It carries with it the connotations of ability as well as freedom of the woman to respond in equal measure to the overtures of the urban polite lover. The narrator rejoices in both. Bhanja thus draws a parallel between the freedom of exchange which unites the buyer and seller in a market, and the freedom of exchange which unites the polite urban man and woman.

Dinakrushna's poem is built around an omniscient narrator who sets out to relate the fictional story or *katha* of a weekly market that assembles in the city of "*kshirakarni*" in the country of Ayodhya. He addresses the listener of the tale as "*bhai*" or brother and thereby establishes an informal setting for the telling of the story.

"Thereafter, in the city of *kshira-karni*
in the country of Ayodhya, in the realm of Shri Ram
a market assembles on Thursdays
people come to the market
O brother let me relate the tale of this market" (Das, 1986: 274).

The tale unfolds on two intersecting registers. On the one hand, there is a mundane register. The poet takes note of the mundane features of the market. For instance, the types of sellers who come to the market,

"thereafter, listen o brother
let me tell who came from where
the carpenter came from the east
the blacksmith and his wife were with him
the confectioner and his wife came from the south

the tanner and his wife came from the west…they all came with their peddler's baskets" (Das, 1986: 274).

And also the diverse types of buyers,

"*brahmin*, *kshatriya*, *vaishya* and *bengali*
*mohanty*, *karana*, *chasa* and *kangali*…*pathana*, *mogul*, *naga*, *firingi*
*rajput*, *baksi*, *rabarangi*
visitors to the market of all the thirty-six sub-castes
came from all four directions"(Das, 1988: 274-275).

The narrator also describes the kinds of commodities on sale in the market: "A variety of goods are on sale in the market / forty seers of ghee cost one rupee" (Das, 1988: 275). Besides, the narrator also takes note of the officials who manage the weekly market, namely, "*hatadandia*" and "*hatakarana*":

Seated on a low rise platform, the *hatadandia*[9]
Stamps the clothes [brought for sale]
Holding the bundle of palm leafs,
The *hata-karana* is writing on the baskets (Das, 1988: 277).

The mundane evocation of the market goes beyond a listing out of sellers, buyers, officials and commodities.It also includes what can be described as experiential vignettes of the market. These are brief descriptions of conversations the narrator comes to hear or kinds of scenes he comes to see in the market place. What deserves attention is the gendered language of these descriptions. The poetself-consciously prefaces the vignettes with a declaration "from now, listen to the news of the women" or "*stitrinkasamachar*." That is, the narrator seeks to describe how women experience the market. There is a delineation of mundane suffering. With tears in her eyes, one woman bitterly complains to her friend about her co-wife as they walk to the market:

"Some one says,
O friend, my *karm*a is vile,
*Daiba*, the son of a maid-servant,is really blind,
Father, the son of a maid-servant,

[9] *Hata dandia* is "A person who is entrusted with the realization of market rate from the stall-keepers." Praharaj, *Bhasakosha*, pp. 9045.

He got me married to a house with a co-wife.
Yesterday was Makar Sankranti,
She ate the whole vessel of rice cakes,
I ate only the remnant dregs made of paddy-husk.
She started such a quarrel!
I was dying of hunger" (Das, 1988: 277)

There is humor as well. There is a short satire on a fictional daughter-in-law and her domestic capabilities. It is narrated by the voice of an implicit figure, that of the mother-in-law.

"Listen now, to the efficiency of the daughter-in-law
One day, she [sat down to] cook one *ser*of rice
Two pitchers of water she poured into the pot
She started the fire-oven from the evening
The night was over but rice did not boil!" (Das, 1988: 277)

However, the gendered nature of language comes to the fore when the narrator deploys the figure of a "foolish sister" to portray mindless consumption. Women come to represent, as it were, the unflattering aspects of the market-experience.

"Now listen to her foolishness
A *kahana* of cowries tied in the corner of her sari
To the weekly market went she, the foolish sister
Milk and curd—so much was available, one can not fathom,
A *pana* of cowries could fetch *punjae* milk-cheese,
She bought four *seras* of milk-cheese,
And gulped down one after another in the market itself,
And said "my tongue has barely moved!"
With this, she went on to the mithai shop
Dumped a *bodie* of cowries
And grabbed a handful of*muans*.
Carrying a basket full of *chuda*and *mudhi,*
The foolish sister is eating in the market. (Das, 1988: 277-78)

On the other hand there is a sacred register. This register intersects the mundane register of the market. Half way through the tale, the poet informs the listener that Shri Ram, the king of Ayodhya, comes to visit the market.

"One day Shri Ram thought
what all [goods] are brought [to the market], let us see
went he then to the market
there was commotion just like the *samudramanthan*
Seeing this Shri Ram was pleased
deep-sounds of kettle drums reverberated through the market
a variety of goods are being sold therein
green grams, lentils, legume pod, and chick peas"(Das, 1988: 275).

Right after delineating Shri Ram's visit and the joy he derived from seeing the market, the poem continues to delineate the mundane features of the market. The poet eventually comes to conclude the tale by reposing his faith in the saving grace of Shri Ram.

So what do the intersecting narrative registers of the poem seek to accomplish? In contrast to Bhanja, Dinakrushna's poem aims to describe a fictional market scene. The poet signals the fictional nature of the scene by designating it as a *katha*. To a greater extent, his language aims at referential density - the poem describes goods, buyers, sellers and officials, and also employs a gendered language to evoke the experience of the market.However, the narrator of the poem is more engaged with the intersecting narrative registers or frames of the poem. The narrator and his listener are located along with the goods, buyers and sellers on the mundane register of the market. Shri Ram, and the joy he derives from seeing the created world are located on the sacred register. It is the intersection of the two that holds the explanatory key to the meaning of the narrative - the poet Dinakrushna remains situated in the mundane world of pleasurable commercial commotion and keeps his attention fixed in the sacral realm of Shri Ram.

Nilambar Bidyadhar's market scene in prose is far more elaborate in its scale than the two poems. The omniscient narrator invites the "*koutuki-jana*" or "one who is curious" to see and listen to "*hata...koutuka*" or "the show or the fun of the market" (Bidyadhar, 1977: 42, 40). The *koutuka*or amusing show includes two kinds of characters and relations. In the first category are those characters who are buyers, middlemen, sellers, money-lenders and debtors—and they are engaged in transactional relationships, in relationships of "*bika kina*," of "*kali-basi*," "*khataka-sahu*" etc. (Bidyadhar, 1977: 33, 38, 39). In the

second category, there are those characters who are father and son, mother and daughter, preceptor and disciple, and friends, and who have either come together to visit the market or meet by chance in the market space - they are bound by sentimental relationships, in relationships of "*pua…bapa*," "*jhia maa*," "*puturadadi*," "*mita-duhe*," "*shishya guru*" (Bidyadhar, 1977: 37, 38, 40). These characters and relationships - transactional and sentimental - constitute the spectacle or the "*koutuka*" of the market.

The narrator employs both diegetic and mimetic languages to represent the spectacle. Diegetic reporting helps him to list out the range of commodities available for sale, to evoke the pleasures of desire and consumption, to construct a portrait of orderly buying and selling:

"There after, [let me] speak about the buying selling by the confectioners. *Guda khai*, *nabatkhai*, *sachikhai*, *chhenakhaja*, *jhilikhaja*, *khanda sakara*, *nadia kora*, *tarajupeda*, *sala ukhuda*, *pakaukhuda*, *nabat,sachiguda*, *gudamali*, *nabatjhara* - having prepared and arranged all these [edibles] on baskets, they have sat down and are looking out for buyers and are selling the goods. He who looks at these has saliva dripping down his mouth. How can one not feel like eating? Hence people come in crowds and buy. Before their father, Children are clamouring for them. Friends are buying for each other. The men about town are buying for their paramours—they go over to the pimps and hand over the refreshments and return. With a lot of joy, foreigners buy, eat and shower praises" (Bidyadhar, 1977: 33).[10]

Desire and consumption are not only reported but also shown. Mimetic representation helps the narrator to construct the drama of the market.

"Some one's daughter tells her mother, 'o mother dear, let us buy this saree.' The mother tells, 'o my [little] mother please remain silent for another fifteen days. I will buy it for you on the next market day.' She responds, 'if such a beautiful saree is available on the next market day, then only will you be able to buy!' She [the mother] said, 'then, call your brother, he will fetch it. The weaver is from the neighboring village. We will pay the money on the next market day'" (Bidyadhar, 1977: 38)[11]

[10] My translation.

On occasion, the narrator combines both diegetic reporting and mimetic drama. "Thereafter, some debtor sees the money lender [from afar] and moves away stealthily. Some debtor comes across the money lender by chance, and out of fear speaks in a supplicating tone, 'Sir I was looking out for you! [Thought] perhaps you would have come to the market! I have brought the bond paper with me! You calculate the sum total of the capital and the interest. I shall pay half of it now. I will write it down that I will pay the other half next year.' Listening to him, the money-lender says, 'O well, I understand, I understand'" (Bidyadhar, 1977: 39).[12]

Commodity-consciousness shapes the bi-partite structure of the narrative. The first part describes a daily market. The second part describes a weekly market. The author explains the relationship between the two parts in terms of an expanding scale of operation. That is, he first describes the daily market that has a more limited range of commodities. He then moves on to the weekly market that has a much wider range of goods. He explains this narrative-transition: "A weekly market assembles in the mango grove on the south-side of the town. There is a pond full of lotuses near the grove. Let me relate in brief the tale of this weekly market. The number of commodities I have named for the daily market, a thousand times more than that are here [in the weekly market]" (Bidyadhar, 1977: 36).[13] The narrative thus closely mirrors an expanding scale of commercialization.

At the heart of the expanding commercial ethos is an evocation of human freedom and sociability. The relationship between the buyer, seller and the middleman is about the freedom to negotiate. It is about the forms of sociability that attends negotiations and transactions. The narrator represents this freedom. A family man goes to a seller of bracelets. He invites a middleman to help him negotiate a price, "brother please come over here. Enquire about the price of these bracelets and help me buy" (Bidyadhar, 1977: 36). The middleman comes over and asks what he wants to buy. He responds, "I will buy bracelets worth eighteen rupees; wife, daughter, niece, sister, sister's daughter, and grand-daughter

[11] My translation.

[12] My translation.

[13] My translation.

- let me get bracelets for them all when I have the money" (Bidyadhar, 1977: 36). The middleman initiates and concludes a bargain with the seller, and then turns to the potential buyer and says, "listen, this is the price that is settled. He has not a word more to say, neither in front of you nor behind you. If it suits you, then buy" (Bidyadhar, 1977: 37). The conditional phrase, "if it suits you, then buy," conveys the freedom and sociability the buyer comes to experience in the market. This freedom is an integral part of the *hatakoutuka* that the narrative seeks to represent. Unlike Bhanja and Dinakrushna, Nilambar's *katha* aims precisely to construct an elaborate fictional market scene. He is not interested in anything beyond - neither in the play of language in which Bhanja is interested nor in the intersection between the mundane and the sacred in which Dinakrushna is invested. His language features a formal realism that invites the reader to relish the ethnographic details of the scene. Economic prosperity in itself constitutes the subject of joyous reflection.

Engagement with commercial prosperity was on the margins of high literary enterprise in eighteenth century Odisha. All three narratives on the market this paper studies belong to minor genres such as *boli* and *katha*. While the first two are lesser compositions of high canonical authors, the last one is the only work of a little known non-canonical author. Nevertheless, on the literary margins we find the presence of two interrelated trends. First a particular sort of social body is conceptualized and envisioned around the pursuit of genteel social status via the tasteful practice of consumption. This pursuit illuminates the presence of a middle sort of people who are moderately prosperous. They take an interest in the fact that forty seers of ghee sells at one rupee on the market, they are eager to buy a beautiful *saree* right away because it may not be available on the next market day, and they aspire to buy bracelets worth eighteen rupees for a wide range of kith and kin as ready money is available at the moment. Second, a social order is conceptualized around the language of mutual agreeableness. The exchanges between the urban *nagara* and *nagari* hinge not on coercion but on mutual agreeableness to engage in language play and banter. The bargains between the seller and buyer of bracelets revolve around the freedom to negotiate. Transactional agreeability then furnishes the language for the articulation of the social order. These trends in literature and the social imaginary they sustained did not acquire an apparent predominance. Nevertheless, the engagement with commercial prosperity and polite society,

with ordinary human flourishing remained available in the background, and marked the presence of forms of early modern discursive imagination in the region.

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*Article*

# Assessing the Impact of Digital Transformation on Employment: A Case of India

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## Abstract

Digital technology has significantly altered commercial activity, e-commerce, e-government structures, and the global labor market. To adapt to the changes brought about by digitization, employees must have access to high-quality training and needed skills. The transformation of the labor market through online job platforms affects both domestic and global markets. The objective of this research is to examine the long-term association amid digital transformation and employment in the country. The study used the OLS approach to determine the influence of digital technology on the county's employment growth. Johansen co-integration test is also used to determine the long-term causal association of the studied variables.

**Keywords:** Digitalization, Employment, OLS estimations, Granger-Causality, Johansen Test of Co-integration.

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## 1. Introduction

*"The internet is becoming the town square for the global village of tomorrow"* (Bill Gates). The world is undergoing a profound transformation because of the rapid spread of digital technologies, which are affecting various facets of life including the economy, labour markets and employment. The digitalization of commercial operations and the advancement of e-commerce have occasioned the establishment of e-government edifices and a digitized international market for labor (Pedchenko N., et al, 2021). In milieu, it is imperative to have well-trained employees who have the necessary skills and competencies for the digital age (Izmailova, 2018). The labour market is being transformed by the increasing use of online job platforms and the proliferation of digital technologies (Chinoracky et al., 2019; Aly, 2020).

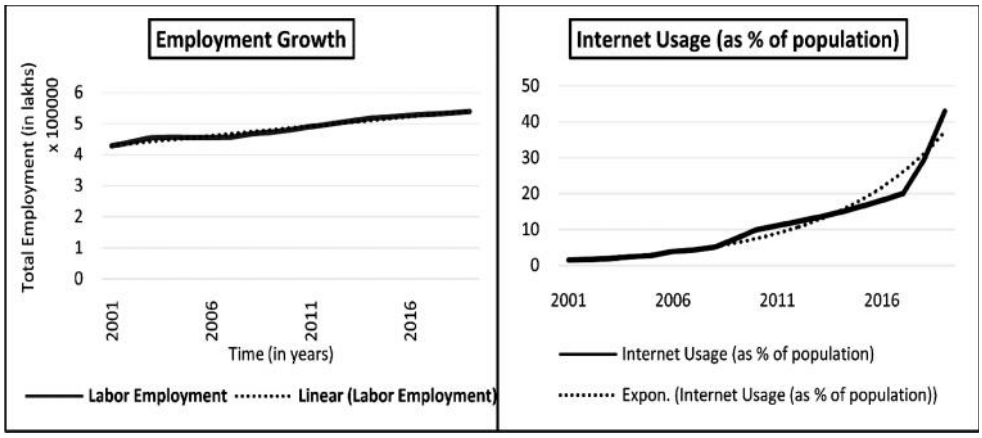
The link between digital transformation and economic development, labour productivity, and employment is intricate and insufficiently explored, necessitating further research. A few self-proclaimed harbingers of change have presented an in accuratedepiction of flexible innovation, which is often characterized by economizing, risk-shifting and the exploitation of legal provisions, leading to a disorganization of labour law (Aloisi et al., 2020). The influence of digital revolution on the national economy, particularly regarding technological progress and the spread of innovation, is highly significant, as it brings both benefits and challenges (Pizhuk et al., 2020).

The concept of digitalization and digital technologies, along with their effects on the labor market, individual and collective labor relations, and the broader labor sector, remains a subject of ongoing study (Tomashevski, 2020). The development of digital infrastructure is a deliberate path that can impact the level of employment in different regions, including the Federation of Russia, where there are opportunities and risks allied with its execution (Dmitrieva et al., 2020). The effects of economic digitalization on employment are being examined and evaluated, with the widespread use of digital technologies for processing, storing, and transmitting information playing a considerate part in the digitalization of business activities and the development of a global digital labor market (Stefanenko et al., 2021).

Countries with stringent employment regulations tend to have lower levels of activity in technology-intensive sectors, as such laws hinder the entry of technology startups into the market. The spread of digital technologies and the expansion of employment in the service sector are slower in upper middle-income countries compared to high-income ones, while low-income countries often lack the necessary ICT infrastructure and digital technologies to engage in the global digital labor market (Pedchenko N., et al, 2021; Delin et al., 2021).

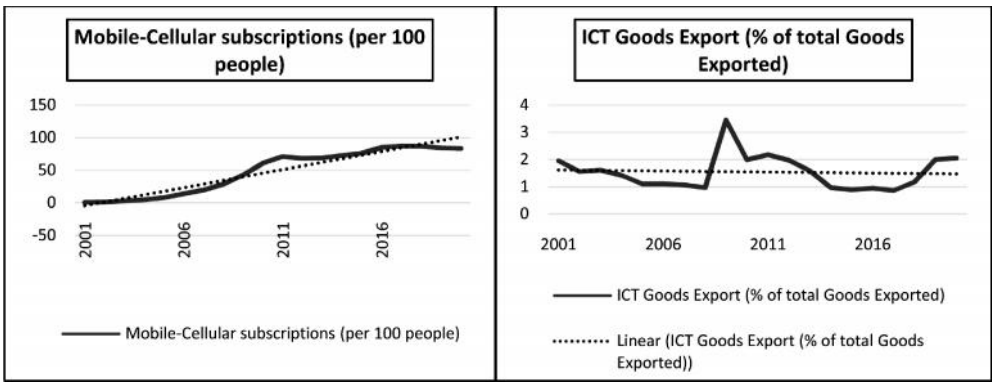
The long-term association amid digital revolution and the level of employment in a country is a central area of study, and the outcomes of these studies can offer guidelines to policymakers on how to channel funds and regulate the economy to improve employment outcomes while protecting the interests of the general population. For example, by encouraging foreign investment through effective policies, job opportunities can be increased, and employees' potential can be improved through digital learning. In addition, improvements in digital efficiency and productivity can create a business-friendly climate in different regions, closing gaps and promoting economic growth.

**Figure 1** **Figure 2**




**Source:** KLEMS Database, RBI and WDI, World Bank

**Figure 3** **Figure 4**




Source: WDI, World Bank

Figure 1 shows the growth of total employment using the RBI KLEMS database across all the organized sectors of the economy. The unorganized sectors are still out of the domain of assessment of the digital influence on the levels of employment. The figure 1 also depicts that employment has grown with a compounding average of 1.36 per cent during the time period of the study. This growth can be due to number of reasons but we here are interested in measuring the time influence of digital activities on this growth. Figure 2 depicts the usage of internet or we can also say that it shows the access to internet by the people which grows with a compounding average of 24.58 per cent throughout the study period. Also, it illustrates that there has been a surge in the figure of users of internet since 2017 as the facilities and coverage of telecommunication devices was enhanced along with the augmentation of the 4$^{th}$ generation (4G) technology.

Figure 3 depicts that the usage of mobile communication devices was increased especially after 2010, due to the rise in the demand of the smart phones. The mobile-cellular subscriptions increased with a compounding rate of 29.58 per cent during the study period. This increase in subscription rates can be bestowed to the entrance of more and more electronic manufacturing companies like Apple, Samsung, Motorola, Xiaomi, Google, etc. in India due to flexible FDI policies. Lastly, figure 4 depicts the growth in the export of ICT goods which still very small when looking at its compounding average of only 0.26 per cent. The motive behind this is that still India is dependent vastly on foreign technology although, India produces a vast majority of ICT graduates and

engineers, but they are less employable by the foreign sector as they lack essential skills which are vital for them to excel at their positions.

Another viewpoint in this favor is that the investment in the Indian companies which are capable to cater in the Indian market like Micromax, Maxx mobiles, etc. are denied full support in their substantial expansions and in turn struggle in comparison to their overseas counterparts. Therefore, the association between digital transformation and employment is a complex and interwoven process that requires ongoing investigation and analysis. The expansion of digital infrastructure, the effect of digital technologies on the labour market, and the consequences of economic digitalization on employment are some of the key areas of research, and the results of these studies can inform policy decisions and help to create a more equitable and prosperous world.

## 2. Review of Literature

Digitalization is a multifaceted and relatively unexplored aspect of global economic transformation, encompassing the digital technologies use for processing, storing, and transmitting information. This process drives the digitization of business operations, the expansion of e-commerce, the evolution of e-government systems, and the formation of a globally digitalized labour market. (Izmailova, 2018) emphasized the importance of high-quality training for skilled employees to encounter the demands of the labour market and the real sector of the economy. Online job platforms are also transforming local and global labour markets. (Chinoracky et al., 2019) analyzed the effect of technology on the labour market, particularly in the transportation sector. (Aly, 2020) examined the relationship between digital transformation and AI trends with development, hiring and productivity of labour. Aloisi et al. (2020) argued that some proponents of change present a distorted picture of flexible innovation, often resulting in disorganization of labour law. Pizhuk et al. (2020) investigated the constructive and adverse effects of digital transformation on the national economy. Tomashevski (2020) discussed the ideas of "digitalization" and "digital technologies" and their impact on the labour market, distinct and communal labour relations, and the labour sphere.

Dmitrieva et al. (2020) and Alàbinà (2021) highlighted the strategic directions for the advancement of digital infrastructure in SMEs in the Russian Federation,

as well as the possibilities and risks of implementation. Stefanenko et al. (2021) aimed to investigate and evaluate the consequences of economic digitalization on employment. The research used descriptive analysis, variance analysis, synthesis, individual and group comparisons, and econometric techniques such as OLS.

The study by Pedchenko et al. (2021) highlights the implication of digitalization on the global economy and the way it is transforming the labour market. They emphasized on the prerequisites for countries to measure the extent of digitalization in different groups, and observed that nations with strict employment regulations have lower activities in technology-intensive sectors. The researchers also noted that the hasty growth of technology and employment in the service sector is slower in upper middle-income countries compared to high-income nations. In contrast, the low occurrence of ICT in low-income nations makes it difficult for their populaces to participate in the digitalized global labour market. Similarly, Delin et al (2021) discussed the use of digital set-up, such as technology, goods, and platforms, as a starting point for transformation. Rakhmawan (2022) investigated the impact of digitalization, social security, productive age, and COVID-19 risk on the wellbeing of casual workers in East Java. The study revealed that digitalization can improve microeconomic activity and society and identified different levels of readiness for digital transformation through cluster analysis.

The study by Kokånova et al. (2020) explores the part of digitization in agriculture and its capacity to address climate change trials by reducing risks, increasing yields, and boosting competitiveness of agro-products. It highlights the importance of digitization for the agriculture sector in Kazakhstan to support the global food supply. Choy (2020) analyzed that digital transformation has a positive effect on productivity, prices, and economic progress in Russia, suggesting the implementation of innovation policies to improve productivity and stabilize prices. Goel (2021) analyzed the effect of digitization on faculty employability in the India in the education sector during the COVID-19 pandemic, using secondary data. The study sheds light on how online teaching can impact employability and suggests ways to increase employment and avoid salary cuts during the digitalization process.

Also, Narang (2018) highlights the benefits of India's "Digital India" initiative, aimed at creating a knowledgeable economy and digitally empowered society with equal access to technology. The initiative seeks to improve citizens' quality of life through better governance and delivery of government programs. De Groen et al. (2017) found that digitalization is transforming the business world and its impact on employment and industrial relations. The work highlights the importance of considering labor conditions, taxation, and social security in government responses to digitalization. Shewale (2018) examines the effect of digitization on economic advancement in India and its potential for generating employment. The study notes the increase in internet penetration and technology adoption in India, contributing to the growth of the digital market, leading to a rise in firms, prices, and productivity. The paper argues that the expansion of SMEs is crucial for digital progress and creation of employment.

On a similar note, the study by Beauty (2019) examines the challenges Nigeria faces in its digital transformation and how it affects the economy. The study highlights the need for better digital technology infrastructure, such as reliable and affordable broadband, and offers extensive literature on digital transformation using the Leaser-Fiche Model. The work of Varlamova and Larionova (2020) analyzed the effect of ICT on labor productivity in Russia and found that digitalization and internet usage in organizations led to increased productivity. Managers are advised to focus on internetization, digitalization, and e-commerce to improve productivity and efficiency. Sumathi and Savitha (2019) found that the Indian government's "Digital India" initiative aims to improve the living standard and encourage the economy digitally. The initiative focuses on promoting digital transactions and improving services in various sectors to create a transparent and responsive system for the growth of the economy. Meena and Parimalarani (2020) found that digitalization is transforming India's banking sector and its impact on the personnels in both public and private banks. The work uses secondary data to examine the effect of digital revolution on employment prospects in the sector.

Moreover, Sun and Guo (2022) found that digital alteration of enterprises significantly promotes sustainable modernization through three mechanisms and provides policy recommendations to accelerate digital revolution and reduce costs while strengthening green innovation and corporate social responsibility. Mohsen and Magdi (2022) discovered that digital transformation in government

sectors helps achieve increased efficiency, better services, and decreased unemployment rates, driven by the widespread adoption of smart phones, cloud computing, and the COVID-19 pandemic, with the creation of a new capital city in Egypt also playing a role. Kaka et. al. (2019) concluded that India has potential to become a connected nation by 2025, creating economic value and jobs with its rapidly growing digital market, but challenges will also be there which needs to be managed, such as redeployment for workers whose jobs will be transformed. All stakeholders need to be prepared to address the opportunities and challenges presented by the digital transformation.

However, Anshu and Kumari (2021) found in their study that the Digital India programme aims to empower India by providing access to technology and a centralized platform for all government services. The program uses the mobile phone as a primary tool for delivery and includes initiatives such as digital document storage, online government services, and fiber optics infrastructure. Bertani et al. (2019) inspected the effect of technology on the economy with an agent-based computational approach and found that while growth in the digital tech sector may create jobs, it may also lead to job loss in traditional mass-production systems.

Careful consideration of the potential impact on employment is crucial. Tan et al. (2022) used Bayesian linear regression with g-prior candidates to find a positive association amid digital transformation and development across 155 countries. Latta and Singh (2021) established that India's growth potential and large market make it a major player on the global landscape, and the government is using technology and digitization to drive growth and optimize processes. Bertani, Raberto, and Teglio (2020) found that the economy has undergone digital transformation for the past 30 years, leading to growth in intangible digital assets through advancements in information and communication technologies. The study shows a substantial correlation amid growth in impalpable investments and productivity and warns of potential industrial joblessness in the long run with high imperceptible digital investments. Singh and Bansal (2019) discussed the influence of digital revolution on businesses in India, including established businesses and start-ups, and how the government is using technology to improve public services. The study presents a consolidated view of the industry to address potential disruptions faced by various stakeholders.

Similarly, Fossen and Sorgner (2018) explored the effects of AI on labor market transitions in the US and found that digitalization has a significant impact, with a higher probability of swapping professions or becoming jobless. The work also revealed gender differences in the paraphernalia of digitalization on transitions into entrepreneurship. Hazarika (2020) observed the effect of digitalization on employment in the banking industry in India and found that extensive technology usage has led to decreased number of clerks and sub-staffs. Yoo and Yi (2022) conducted a review of studies on innovation and discovered that various factors contribute to the acceleration of digital economic novelty, leading to variations in the business structure, improved productivity and cost reduction in the production sector. Popelo et al. (2021) studied the effect of digitalization on jobs and its associated markets, finding that it has both positive and negative consequences for the economy and proposing a model for managing digitalization in Ukraine. Aydin et al. (2023) explored the effect of digital revolution on various aspects of human life and highlighted both its positive and negative effects. Ivanitskaia (2022) assessed the effect of digitalization on joblessness in the Nordic countries and found that digitalization has a noteworthy undesirable effect on joblessness, with an upsurge of 1% in digitalization leading to a decline in the rate of unemployment by 0.025%.

On a similar note, Brintseva (2021) found that with the deviations in the job market and the spread of technology, new digital skills are required for employees. The 2019 pandemic enhanced digital conversion and remote work, making effective transformation essential for the competitiveness of the banking sector. Effective management of remote teams is also crucial for employee engagement and productivity. Encouraging foreign investment through liberal policies can provide job opportunities and increase the potential of employees through digital learning. Improving digital efficiency and productivity can create a favorable business environment in regions with opportunities for growth.

## 2. Objectives and Methodology

The study aims to examine the long-term association amid digital transformation and employment levels in a country. Therefore, the study has examined the growth of internet usage by people, mobile-cellular subscription rates and exports of ICT goods and also analyzes the impact of technology on the level of employment in India. Study also recommends few policy ideas that can

help to transform our growing employment on a bigger scale using digital technologies. For achieving the above objective, study operates under the following hypothesis:

**$H_0$:** The digital technologies cannot substantially change the employment structure of the country.

**$H_1$:** The digital technologies can substantially change the employment structure of the country.

## Data and Method

Using a time series dataset from 2001 to 2020, this research discovers the influence of digital revolution on the proportion of employment in the country. In this work, we employed OLS estimation to investigate the association between digital transformation characteristics and employment level. The variables used as proxy measures to capture the country's level of digitalization are: i) Number of internet users (per cent of population), ii) Number of mobile-cellular subscriptions (per 100 people), and iii) Export of ICT goods (per cent of total goods exports), whereas the indicator used to measure the country's level of employment (TE) is the total employment across different sectors via the RBI's KLEMS database network. All information regarding data source, acronym, measurement unit and variable names etc. are given in the Table 1.

**Table 1: Data Sources, Acronyms and Measurement Units**

| Variable Name | Acronym | Description | Measurement | Data Source |
|---|---|---|---|---|
| Total Employment | TE | Total Labor Employment across all economic activities | No. of persons (in count) | RBI-KLEMS Database |
| Internet Usage | IU | Internet usage by people (as percentage of total population) | In percentage | World Development Indicators (WDI) |
| Mobile-Cellular Subscriptions | MCS | Mobile-Cellular subscriptions by the people | Per 100 people | World Development Indicators (WDI) |
| Export of ICT goods | ICTGE | Export of ICT goods as percentage of total goods exported | In percentage | World Development Indicators (WDI) |

Source: Authors' construction

**Model specification**

$$TE = \beta_0 + \beta_1 IU + \beta_2 MCS + \beta_3 ICTGE + \mu$$

Where, TE stands for Total Employment, IU stands for Internet Usage, MCS stands for Mobile-Cellular Subscriptions and ICTGE stands for Export of ICT goods. $\beta_0$ is the intercept and the $\beta_1$, $\beta_2$ and $\beta_3$ are the elasticity constants of labor employment (LE) with veneration to IU, MCS and ICTGE, correspondingly and the white noise error term is represented by "μ".

Due to time series data, we used OLS method for analysis of the data. The ADF test functionally checked the stationarity of the series. The Jarque-Bera test isused to ensure that the data is normal. The Durbin-Watson (D-W) figure is also useful in determining the autocorrelation level among the variables. Breusch-Godfrey (LM) Test and Breusch Pagan-Godfrey Heteroskedasticity Test are used to check the levels of serial correlation and heteroskedasticity among the variables. Furthermore, the Johansen Test of co-integration is used to spot the existence of a long-run association amongst the dependent and independent variables. Finally, Granger-Causality techniqueis used to detect the cause-and-effect relationship between different combinations of variables. The model's output is utilized for analysis as well as proposals or recommendations for policymakers to make policies more environmentally sustainable.

## 4. Results and Discussions

***Descriptive Statistics and Test of Multicollinearity of the Variables***

Descriptive statistics is used to understand and summarize the data collected on factors affecting employment in India over the years 2001 to 2020. Table 2 demonstrates the descriptive figures of the data, including the mean, standard deviation, minimum, and maximum values, and the Jarque-Bera statistics. The results displayed that the average level of employment was 13.08336, with a low of 12.93983 and a high of 13.19696. The internet usage had a mean figure of 2.969719, while the mobile-cellular subscriptions had a mean figure of 6.253304, and the export of ICT goods had a mean figure of 1.221442. The J-B figure showed that variables had p-values greater than 5 per cent, indicating that variables are distributed normally.

**Table 2: Descriptive Statistics**

| Statistics | TE | IU | MCS | ICTGE |
|---|---|---|---|---|
| *Mean* | 13.08336 | 2.969719 | 6.253304 | 1.221442 |
| *Median* | 13.07384 | 2.95597 | 8.035905 | 1.221457 |
| *Maximum* | 13.19696 | 6.557439 | 9.344396 | 1.857465 |
| *Minimum* | 12.93983 | 0.812494 | 0.779982 | 0.929583 |
| *Std. Dev.* | 0.077874 | 1.53333 | 3.143337 | 0.240961 |
| *Skewness* | -0.075722 | 0.57488 | -0.578541 | 0.78999 |
| *Kurtosis* | 1.850305 | 2.659886 | 1.718275 | 3.303336 |
| *Jarque-Bera* | 1.120611 | 1.19802 | 2.484715 | 2.156959 |
| *Probability* | 0.571034 | 0.549355 | 0.288703 | 0.340112 |
| *Observations* | 20 | 20 | 20 | 20 |

Source: Authors' calculations by using E-views 10 Statistical Software.

**Table 3: Multicollinearity Test**

| Variable | Coefficient Variance | VIF value |
|---|---|---|
| C | 0.000 | NA |
| IU | 0.000 | 4.346 |
| MCS | 0.000 | 4.347 |
| ICTGE | 0.000 | 1.001 |

Source: Authors' calculations by using E-views 10 Statistical Software.

Table 3 presents the results of the multicollinearity test for the variables used in the regression analysis. The Variance Inflation Factor (VIF) values indicate the degree of multicollinearity among the explanatory variables. The VIF values for Number of Internet Users (IU) and Mobile-Cellular Subscriptions (MCS) are 4.346 and 4.347, respectively, suggesting moderate multicollinearity, though within acceptable limits as the values are less than 10. The Export of ICT Goods (ICTGE) shows a VIF of 1.001, indicating no multicollinearity. The results show that multicollinearity is not severe and is unlikely to distort the regression results significantly.

***Diagnostic Checking: Unit Root Test Result***

To evaluate stationarity, the ADF test is applied because many studies by Dickey and Fuller (1979) and Phillips and Perron (1988) have shown that the ADF test is a reliable method for identifying unit roots, correctly identifying them over 80% to 90% of the time. Table 4 holds the results at levels I(0), confirming non-stationarity. However, when the first difference I(1) was tested, it was discovered that two variables were integrated namely TE and ICTGE, demonstrating stationarity whereas, two independent variables IU and MCS were integrated at second order I (2). The second difference method is a widely used technique in time series analysis for defining the stationarity of a time series.

**Table 4: Stationarity Test Results**

| Variables | Statistic | Level I (0) | | | First Order Difference I (1) | | | Second Order Difference I (2) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Intercept | Intercept and Trend | No Intercept and Trend | Intercept | Intercept and Trend | No Intercept and Trend | Intercept | Intercept and Trend | No Intercept and Trend |
| *TE* | *t-Statistic* | 0.0764 | -3.4475 | 2.9286 | -3.0878 | -2.8928 | -1.6513 | -4.19668 | -4.36621 | -4.26554 |
| | *Prob.* | 0.9521 | 0.0782* | 0.9976 | 0.0494** | 0.1913 | 0.092* | 0.0054*** | 0.02** | 0.0003*** |
| *IU* | *t-Statistic* | 2.1214 | -0.8503 | 1.9799 | -0.5211 | -1.3187 | 0.2258 | -3.97024 | -4.17476 | -3.82656 |
| | *Prob.* | 0.9997 | 0.9403 | 0.9842 | 0.8654 | 0.8492 | 0.7402 | 0.0085*** | 0.0221** | 0.0007*** |
| *MCS* | *t-Statistic* | -2.3706 | -1.0595 | -0.1434 | -1.4719 | -2.4577 | -1.1789 | -3.85483 | -3.7031 | -3.92744 |
| | *Prob.* | 0.163 | 0.9081 | 0.6203 | 0.5243 | 0.3413 | 0.2085 | 0.0107** | 0.0506* | 0.0006*** |
| *ICTGE* | *t-Statistic* | -3.2908 | -3.1461 | -0.4085 | -5.3736 | -5.2919 | -5.5336 | -5.3116 | -5.13527 | -5.46592 |
| | *Prob.* | 0.0343** | 0.1318 | 0.5226 | 0.0005*** | 0.0026*** | 0*** | 0.0007*** | 0.0045*** | 0*** |

Source: Authors' calculations by using E-Views 12 Statistical Software.

Notes:*, ** and *** represent significance at 10%, 5% and 1% level respectively.

Lag Length based on AIC.

This method, also known as second-order difference, is utilized to remove the drift component and make series stationary through differencing technique. Various studies have used this method in unit root tests to observe the stationarity of various economic and financial time series such as inflation

rates, real GDP, stock prices, exchange rates, and interest rates (Phillips and Perron, 1988: Kwiatkowski, et.al. 1992). Also, a study by Zhang et al. (2021) even found that the S&P 500 stock index became stationary after second-order differencing. The second difference method is a valuable tool in unit root testing and has been supported by a large body of literature.

***Heteroskedasticity and Serial Correlation Tests***

**Table 5: Breusch-Pagan-Godfrey Test of Heteroskedasticity**

| Statistic | Value | Probability | Value |
|---|---|---|---|
| *F-stat.* | 0.894334 | *F (3,16)* | 0.4654 |
| *Obs. $R^2$* | 2.872132 | *$Chi^2$ (3)* | 0.4118 |
| *Scaled explained SS* | 1.109821 | *$Chi^2$ (3)* | 0.7747 |

Source: Authors' computations using E-Views 12 Statistical Software.

**Table 6: Breusch-Godfrey (LM) Test of Serial Correlation**

| Statistic | Value | Probability | Value |
|---|---|---|---|
| *F-statistic* | 0.600286 | *F (3,13)* | 0.6262 |
| *Obs. $R^2$* | 2.433449 | *$Chi^2$ (3)* | 0.4874 |

Source: Authors' computations using E-Views 12 Statistical Software.

The p-value of the Breusch-Godfrey (LM) Test of serial correlation, Heteroscedasticity test by Breusch Pagan-Godfrey, is more than 5 per cent, indicating that the model is devoid of serial correlation and heteroscedasticity (Tables 5 and 6).

***Co-Integration Tests***

The Johansen cointegration test is considered better than other cointegration tests and several empirical studies have revealed that the Johansen test correctly identifies cointegration in over 80% to 90% of cases when applied to various datasets of macroeconomic and financial variables (Johansen and Juselius,

1990 and 1992). Table 7 shows the outcomes of the Johansen co-integration test. At 5% significance level, the value of trace statistics (98.17421) is greater than the critical value of (47.85613). The maximum Eigen value (66.30889) is also greater than the critical value of (27.58434). Consequently, the null hypothesis ($H_0$) of no co-integration (R=0) is rejected, and the alternative ($H_1$) is accepted.

**Table 7: Test Results of Co-integration**

| **Trace Test** | | | | |
|---|---|---|---|---|
| Hypothesized CE(s) | Eigenvalue | Statistic | c.v. at 5% | p-value |
| ***R=0*** | 0.974873 | 98.17421 | 47.85613 | 0 |
| ***R=1*** | 0.715997 | 31.86533 | 29.79707 | 0.0285 |
| ***R=2*** | 0.264498 | 9.207446 | 15.49471 | 0.3466 |
| ***R=3*** | 0.184801 | 3.677805 | 3.841466 | 0.0551 |
| **Maximum Eigenvalue Test** | | | | |
| Hypothesized CE(s) | Eigenvalue | Statistic | c.v. at 5% | p-value |
| ***R=0*** | 0.974873 | 66.30889 | 27.58434 | 0 |
| ***R=1*** | 0.715997 | 22.65788 | 21.13162 | 0.0303 |
| ***R=2*** | 0.264498 | 5.529642 | 14.2646 | 0.674 |
| ***R=3*** | 0.184801 | 3.677805 | 3.841466 | 0.0551 |

Source: Authors' computations using E-Views 12 Statistical Software.
Note: Trace test and Max-eigenvalue test indicates 2 cointegrating eqn(s) each at 5% level.

At a 5 per cent significance level, the trace data show two co-integrating vectors, and the maximum Eigen also shows two co-integrating vectors, and the findings revealed a long-run association between TE, IU, MCS and ICTGE.

***Regression Estimations***

The empirical conclusions of the regression model revealed in Table 8 infer that the variables in the research have an unswerving positive and substantial effect on the quantum of employment in the country at a 5 per cent significance level. Similarly, a rise in the number of mobile or cellular subscribers had a direct positive and considerable influence on employment, whereas a rise in

the export of ICT goods had an adverse but noteworthy effect on employment. The rationale behind this is that the industry is still in its early stages due to lack of money, insufficient policy structures, a huge demand for exceedingly qualified labour, and so on. Furthermore, the overall regression mode is robust, with r-square values of 96.3 and 95.6, respectively. At 5 per cent significance level, the F-statistics was predicted to be 138.214 (p-value = 0.000) indicating the fitness of the model.

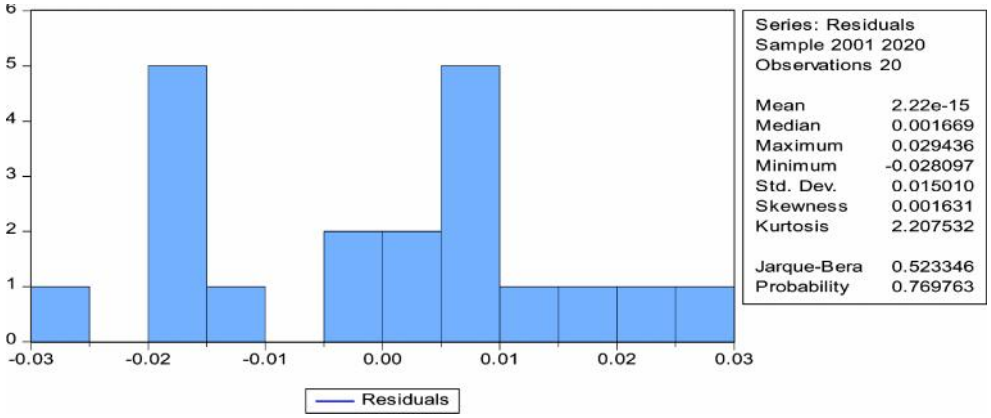
**Table 8: Regression and Residual Figures**

| Explanatory Variables | Coeff. | s.e. | t-stat. | p-value |
|---|---|---|---|---|
| *Intercept* | 12.991 | 0.021 | 621.559 | 0.000 |
| *IU* | 0.032 | 0.005 | 6.189 | 0.000 |
| *MCS* | 0.009 | 0.002 | 3.743 | 0.002 |
| *ICTGE* | -0.049 | 0.016 | -3.117 | 0.007 |
| Regression Statistics | | | | |
| $R^2$ | 0.963 | | | |
| *Adjusted* $R^2$ | 0.956 | | | |
| *S.E.* | 0.016 | | | |
| *Obs.* | 20 | | | |
| *F-stats.* | 138.214 | | | |
| *Sig. F* | 0.000 | | | |

Source: Authors' computations using E-Views 12 Statistical Software.

The residual statistics in Figure 5 infers that the mean of the residuals is close to zero i.e. a small value of 2.22e-15 and a standard deviation close to 0.015010. Skewness and Kurtosis levels with values 0.001631 and 2.207532 respectively shows that residuals are evenly distributed. Lastly, the value of Jarque-Bera probability of 0.769763 displays that residuals are distributed normally as the value is more than 5 per cent significance level.

**Figure 5: Residual Statistics**




Source: Authors' computations

***Granger-Causality Estimations***

The ability to identify non-linear relationships and estimate the strength of causality make the Granger causality test a powerful tool for analyzing time series data and determining causality in complex systems (Luetkepohl, 1991; Toda and Yamamoto, 1995). From Table 6 it is inferred that there occurs a uni-directional connection amid the use of internet (IU) and total employment (TE) level in the country. This also confirms the fact that IU is responsible to induce a change in the status of employment (TE) of the country. As per the regression results a unit change in internet usage will create a small change of 0.032 units positively and significantly. Although, the change is small for now but as the technological knowhow and digital literacy will increase among the common masses of the country along with more and more demand of highly skilled and educated individuals in different organized institutions, the coefficient or multiplier value of change will increase in the future.

Another important relationship as inferred by Table 9 is between MCS and TE and which is also a uni-directional relationship. This relationship explains that as the usage of mobile communication technology will intensify in the future, more and more individuals will have access to this gigantic world inter-connectivity called as the internet. Mobiles especially the smart phones have the audacity to change the entire dynamics of how people perceive the future.

**Table 9: Granger-Causality Test Result**

| Null Hypothesis ($H_0$): | Obs. | F-stat. | Prob. |
|---|---|---|---|
| IU does not Granger Cause TE | 17 | 11.9308 | 0.0012*** |
| TE does not Granger Cause IU | | 0.21747 | 0.8821 |
| MCS does not Granger Cause TE | 17 | 2.94432 | 0.0851* |
| TE does not Granger Cause MCS | | 0.559 | 0.654 |
| ICTGE does not Granger Cause TE | 17 | 1.19364 | 0.3612 |
| TE does not Granger Cause ICTGE | | 0.7539 | 0.5448 |
| MCS does not Granger Cause IU | 17 | 0.85846 | 0.4937 |
| IU does not Granger Cause MCS | | 1.27426 | 0.3355 |
| ICTGE does not Granger Cause IU | 17 | 1.91156 | 0.1917 |
| IU does not Granger Cause ICTGE | | 2.14022 | 0.1586 |
| ICTGE does not Granger Cause MCS | 17 | 0.63778 | 0.6077 |
| MCS does not Granger Cause ICTGE | | 0.28943 | 0.8321 |

Source: Authors' calculations by using E-Views 12 Statistical Software.

Notes: a:*, ** and *** represent significance at 10%, 5% and 1% level respectively.

Therefore, the study shows that IU and MCS will be significant variables in determining the future of employment (TE) in the country along-with the ICTGE which is still in a developmental phase because of limited supply of resources. As the market of ICT goods manufacturing will increase in the country so shall be the status of employment.

## 5. Concluding Observations

The study highlights the complex and multifaceted nature of the effect of digitalization on employment in India. The study instituted that digitalization is leading to the automation of many jobs, particularly in the manufacturing and service industry, which has the capacity to displace large numbers of workers, predominantly those with lesser education and skills. Nevertheless, it correspondingly notes that digitalization is engendering new prospects for

employment, particularly in the digital economy. Therefore, it is crucial that government policies and programs are in place to support workers affected by automation and digitalization, and to ensure that the shift to the digital economy is inclusive and equitable for all.

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Article

# Food-Tech Companies' Coping and Recovery during COVID-19: Case of Zomato

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## Abstract

In Asia, midstream and downstream segments are least understood in spite of their growing importance, especially in context to urban food supply chains. Food-tech companies are an emerging yet dominant player in the downstream segment of urban food supply chains. Zomato, the largest food-tech company in India, ventured into food delivery since 2015 and by 2018 the company was operating in 63 Indian cities. Lured by the demand and the low operating costs in smaller cities, Zomato continued to expand in smaller cities of India even during the pandemic. Along with the increased dependence of restaurants and customers on online food delivery helped Zomato improve financial viability and hence attract investors. The article delves deep into this difficult journey of Zomato before and during COVID-19 and finds that the corporatisation of urban food supply chains has benefitted the organised players. In contrast, informal players have been mostly sidelined from the growth story.

**Keywords:** Food-tech, Covid-19, Zomato, Urban Food Supply Chains

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## Introduction

The food supply chains include the upstream segment, which involves food production; the midstream segments, which involve processing, wholesale, and logistics; and the downstream segments, which involve retail and restaurants. Reardon et al.(2014) have found that, in Asia, much has been written on the upstream segment, and far less attention has been given to the midstream and downstream segments. Reardon et al. (2014) highlights that the midstream and downstream segments of the food supply chain accounts for 50 to 70 per cent of the value-added and costs in the overall food supply chain; hence, the influence of these segments on the overall food supply chain becomes important. They also emphasise that little attention has been paid to the changing size and nature of the urban market, although the urban market constitutes about 60-70 per cent of the food consumed in Asia. In the urban markets of India, food-tech companies have emerged and proliferated over the past few years and rightfully demand attention. Zomato, the largest food-tech company in India, began as a restaurant discovery platform and ventured into food delivery only in 2015. It started to penetrate smaller towns in India since 2015, and by 2018, it was present in 63 cities across India. Zomato continued expansion into Tier-II and Tier-III cities of India, although it suffered huge losses in the two years before the pandemic when it faced the historic 'logout campaign' and the growing dissent from delivery partners. The situation, however, turned in favour of Zomato since the pandemic lockdown. With the increasing dependence of restaurants and customers on food-tech companies, it slowly improved its financial viability and managed to attract investors more than ever before, strengthening its position in smaller towns. Zomato not only survived the pandemic but became the first Indian food-tech company to go public in April 2021. The data used for analysis includes reports shared by the company, government publications, research articles, reports and newspaper articles.

## Online Food Delivery before the Pandemic

According to Sabnavis and Kansara (2020), the market size of Indian restaurants and the food service sector stood at Rs. 4.1 trillion as of 2019, registering a year-on-year growth of 10.5 per cent and a compound annual

growth rate (CAGR) of nine per cent in the preceding five years. The organized food service players like The Grand Bhagwati (TGB), Domino's Pizza, Pizza Hut, Subway accounted for 30-35 per cent of this growing food service sector. These organized food service players partnered with the food-tech companies to achieve scale addressing the demand for convenience by urban consumer. According to Sabnavis and Kansara (2020), India had a 67 per cent population in the age group 15-60 years as of 2019 and the median age of India was 28.7 years, both of which favoured the growth in the food service sector. Also, the Indian gross domestic product (GDP) registered an average growth of 7.5 per cent between 2015 to 2019, increasing per capita GDP and per capita final consumption expenditure. The number of credit card and debit card transactions had almost doubled between 2015 and 2019 and increased acceptance of the plastic money led to more cash-back offers and discounts in the food service and delivery sector. The number of active internet users in the country, as of 2019, was one of the highest across the globe and 192 million internet users were in urban areas alone. According to *Economic Times* 2019[1], this is 30.6 per cent of total users in India as of 2019. It was reported that with the escalating proportion of women employed in organized industrial activities, the purchasing power had increased along with an ever-increasing time-squeeze at the family level.

Zomato began as a restaurant discovery platform and ventured into food delivery only in 2015 (Keshavdev, 2019). It attempted to penetrate smaller towns of India, Lucknow, Coimbatore, Kochi and Indore, in 2015. By 2018, it was present in 63 cities across India (Goyal, 2018). According to a news report (TNN, 2019), Zomato has added another 150 cities since then with plans to cater to 200 cities by the end of March 2019. The average order value (AOV) of Zomato in seven metros was Rs. 300 whereas the AOV of smaller towns was Rs. 150-200 as people were ordering more snacks in smaller towns, as compared to metros. Much of this expansion of Zomato since 2018 was fuelled by investments from the Chinese payments giant Ant Financial following which massive discounts were offered on food orders in smaller towns by Zomato. The report also highlights that the launch of Jio network at the end of 2016 also helped the food-tech companies like Zomato and Swiggy expand. It

[1]https://economictimes.indiatimes.com/tech/internet/internet-users-in-india-to-reach-627-million-in-2019-report/articleshow/68288868.cms?from=mdr

indicated that the cost of delivery personnel in smaller towns was one-third to half of that in bigger cities and the attrition rate was also low. Shorter distances for delivery helped save fuel costs also. Zomato also did not have to set up offices in the smaller towns, which saved costs. Zomato helped small restaurants in smaller cities to scale up, bring restaurants from bigger cities to these smaller towns and register the restaurants with FSSAI to maintain hygiene standards. According to the news report, the seven cities – Delhi-NCR, Mumbai, Bengaluru, Chennai, Pune, Hyderabad and Kolkata which used to contribute 85 to 90 per cent of total volume in 2018, was only contributing 65-70 per cent in 2019. Fifteen to twenty cities including Jaipur, Ahmedabad, Visakhapatnam and Coimbatore were showing promise.

In May 2019, Zomato was both a sponsor and data partner for the National Restaurant Association of India (NRAI) for the India Food Services Report 2019 (Das, 2019). Also, a total of 7.3 million people were working in the food service sector as of 2019 of which 51 per cent were organized and 49 per cent were unorganized. It is important to note that although the organized format segment contributed to 30-35 per cent of the food service sector, it claimed employing 51 per cent of total workers in the sector. The report further added that the organized sector had contributed Rs. 180 billion as tax payments in 2018-19. Although the *India Food Services Report 2019* was a harbinger of prosperity for organized restaurateurs and food-tech companies like Zomato, a mass exit of NRAI member restaurants from Zomato was recorded in August 2019. This mass exit of restaurants from the Zomato platform was called the #logout movement (Das, 2019).

In the Annual Report of Zomato, 2019, Deepinder Goyal, CEO and founder of Zomato shared, "There are far better ways to improve the margin profile of our food delivery business than taking the irreversible step of competing with our partners (restaurant owners)". However, according to the news in *Business Today* on August 27, 2019, Zomato was venturing into the more attractive dine-in business through the Zomato Gold membership programme and setting up their cloud kitchens at the cost of partner restaurants. The news highlighted that the dine-in market and food delivery market were 92 per cent and eight per cent of the organized food service market in India. The news also highlighted that during the FY 2015-16 to FY 2018-19 food-tech companies had attracted

an investment of 2.14 billion USD, whereas restaurants had attracted a capital of 635 million USD only. With this investment coupled with annual subscriptions and the discounts borne by partner restaurants, food-tech companies like Zomato were improving their understanding of the consumers and manipulating the downstream business in their favour, acting against the very restaurants that they were partnering with. According to the same news report, NRAI held a meeting with Gurugram restaurateurs on 13th August 2019, in which 300 restaurants immediately decided to logout from all dine-in platforms and in the following days, around 2000 restaurants decided to refrain from the Zomato Gold membership programme. The restaurateurs complained that even though the food tech companies passed over the burden of discounts entirely to the restaurants, the data on consumers and their preferences were not shared by Zomato. This allowed increasing control over consumers in favour of the food-tech companies at the cost of partner restaurants. By October 2019, the logout movement had spread like fire and other restaurant associations like the Federation of Hotel and Restaurants Association of India, Indian Hotel and Restaurant Association, Thane Hotel Association, Pune Restaurants and Hotel Association, Nainital Hotels and Restaurants Association, and Vadodara Food Entrepreneurs joined (Kondalamahanty, 2019).

The Indian economy was reeling under the effect of an economic slowdown reporting an 11-year low GDP of 4.2 per cent in 2019-20 (Sahoo, 2020). Added to this the #logout movement dented Zomato's business for FY20. This is further evident through quarterly decrease in GOV as shown in Table 2. As calculated from the annual GOV reported in the Red Herring Prospectus of Zomato, dated July 6, 2021, the average quarterly Gross Order Value (GOV) of Zomato in FY 20 was Rs. 28,052 million. On comparison of the average quarterly GOV with the actual quarterly GOV, it was found that the third quarter of FY 20 reported a GOV of Rs. 27,823 million which was less than the base figure by 0.7 per cent. Similarly, the actual GOV of the fourth quarter of FY 20 was less than the calculated quarterly GOV by 4.3 per cent. Thus, as evident the business of Zomato was not doing well in the two quarters before the pandemic lockdown. On one side Zomato faced protests from restaurant partners and on the other it faced protests from delivery partners about low payments. On September 17, 2019, a news article in *Business Today* reported that Zomato had changed the incentive structure for delivery partners due to competition from rivals (Manali, 2019). The payment per delivery was reduced

from Rs. 40 to Rs. 30. In response to the reduction, delivery personnel in Mumbai and Bengaluru decided to go on strike. Also the delivery boys reported working for 14-15 hours per day even before the deduction in their incentive. Under the reduced incentive, the working hours had to be increased even more to maintain the same amount of payment. However, despite the losses, logout movement by restaurant partners and protests by delivery partners, Zomato continued to expandinto the small cities of India.In FY 20, Zomato's revenue was 394 million USD and losses were 293 million USD (Alawadi, 2020). The same article stated that the food-tech company had to cut 13 per cent jobs in May 2020 due to the economic downturn amidst COVID-19. A news item on October 22, 2019 reported that Tier-II and Tier-III currently contributed 35 per cent of monthly order volume which increased to 50 per cent by March 2020 when Zomato planned to reach more than 700 cities (Hans News Service, 2019).

**Zomato Copes with the Pandemic and Rejuvenates**

Amidst the severe economic shock during the COVID-19 lockdown, food-tech companies found an opportunity to reach scale, increase AOV and revenue at reduced costs to turn profitable. According to another report (Goyal, 2020a), Zomato delivered 70 million food orders since the lockdown and estimated that Indians would have placed a total number of 200 million food orders since the lockdown considering all delivery channels including those by restaurants.

On 23rd September 2020, Goyal (2020b) shared another report in which he mentioned that Zomato had managed to attract 85 per cent of pre-COVID level GOV. While cities like Kolkata, Patna, Jamshedpur, Ranchi and Siliguri exceeded pre-COVID-19 levels, Delhi and Mumbai recovered up to 95 per cent of pre-COVID levels and Bengaluru, Hyderabad and Chennai were still at 80 per cent of pre-COVID-19 levels. He indicates that smaller cities were responding better post-COVID-19 lockdown. He also revealed that the affluent parts of the city were driving the recovery and cited Delhi as an example. Spending on premium restaurants had increased by over 25 per cent pre-COVID-19 levels. In some cities like Kolkata, when the city was shut down, customers were relying more on food delivery. There is, however, no evidence to crosscheck these claims of the Zomato CEO. He also reported order spikes

during celebrations like Raksha Bandhan, Janmashtami, Teacher's Day and Independence Day. Order-for-one which was 60 per cent of all orders pre-COVID had decreased and meals for two or more had increased as people were spending more time with families. As seen in Table 1, the average Monthly Active Users (MAU) which was 29.3 million in FY 2018-19 increased to 41.5 million in FY 2019-20 and decreased to 32.1 million in FY 2020-21. Similarly, the average Monthly Transacting Users (MTU) which was 5.6 million in FY 2018-19 increased to 10.7 per cent in FY 2019-20 and decreased to 6.8 million in FY 2020-21. Even though active users decreased during the pandemic years, active food delivery restaurants increased from 94,286 in FY 2018-19 to 143,089 in FY 2019-20 and 148,384 in FY 2020-21.The GOV of Rs. 53,870 million in FY 2018-19 increased by 108 per cent to reach Rs. 112,209 million in FY 2019-20. However, it reduced by 16 per cent to stand at Rs. 94,829 million in FY 2020-21. The number of orders which had been 161 million in FY 2018-19 increased by 111 per cent to 403 million orders in FY 2019-20 and decreased by 41 per cent to 239 million orders in FY 2020-21. Nevertheless, the drastic reduction in orders by 41 per cent resulted only in a 16 per cent reduction in revenue because the AOV which was Rs. 335 per order in FY 2018-19 and Rs. 278 in FY 2019-20 increased o Rs. 397 in FY 2020-21.

**Table 1: Operational and Financial Details of Zomato during 2018-21**

| | FY 2018 -19 | FY 2019 -20 | FY 2020 -21 |
|---|---|---|---|
| Average MAU (million) | 29.3 | 41.5 | 32.1 |
| Average MTU (million) | 5.6 | 10.7 | 6.8 |
| Active Food Delivery Restaurants (numbers) | 94,286 | 143,089 | 148,384 |
| GOV (Rupees Million) | 53,870 | 112,209 | 94,829 |
| *Y-o-Y Growth (per cent)* | - | 108 | (-)16 |
| Orders (million) | 161 | 403 | 239 |
| *Y-o-Y Growth (per cent)* | - | 111 | (-)41 |
| AOV (Rupees) | 335 | 278 | 397 |

Source: Red Herring Prospectus of Zomato, Dated July 6, 2021[2]

[2] "Red Herring Prospectus" https://www.bseindia.com/downloads/ipo/Zomato_RHP_070720212008.pdf (Accessed January 23, 2024).

As calculated from the Red Herring Prospectus of Zomato, dated July 6, 2021, the average quarterly GOV of Zomato in FY 2019-20 was Rs. 28,052 million (Table 2). In the first quarter of FY 2020-21, when the lockdown was announced, the GOV was less than the base quarter by 61 per cent. The condition somewhat improved in the second quarter of FY 2020-21 when the GOV was only 25.3 per cent less than the base quarter. The condition further improved to surpass the base quarter GOV by 6.3 per cent by the third quarter of FY 2020-21 and exceeded the base quarter GOV by 18.9 per cent in the fourth quarter of FY 2020-21. This indicates that the lockdown proved to be a boon for Zomato, rescuing the business from the downfall in GOV before the pandemic to a sustained rise in GOV after the lockdown. The dine-out business of Zomato was severely impacted by the COVID-19 lockdown, showed signs of recovery after the lockdown and was again adversely affected by the resurgence of the pandemic in 2021. However, the food delivery business of Zomato which was significantly impacted during the first quarter of FY 2020, improved henceforth and was not adversely affected even in 2021.

**Table 2: Quarterly GOV from 3rd Quarter of 2019-20 to 4th Quarter of 2020-21**

| | GOV (Rs. million) | Per centage change as compared to average GOV of FY 2019-20 |
|---|---|---|
| Average Quarterly GOV in FY 2019-20 | 28,052 | - |
| 3rd Quarter FY 2019-20 (October – December 2019) | 27,853 | (-) 0.7 |
| 4th Quarter FY 2019-20 (January – March 2020) | 26,849 | (-) 4.3 |
| 1st Quarter FY 2020-21 (April – June 2020) | 10,936 | (-) 61.0 |
| 2nd Quarter FY 2020-21 (July – September 2020) | 20,952 | (-) 25.3 |
| 3rd Quarter FY 2020-21 (October – December 2020) | 29,810 | 6.3 |
| 4th Quarter FY 2020-21 (January – March 2021) | 33,130 | 18.1 |

Source: Red Herring Prospectus of Zomato, Dated July 6, 2021

As per a *Forbes* article, the online food delivery market grew four times from 900 million dollars in FY 2016-17 to Rs. 3,582 million dollars in FY 2019-20 (Sharma, 2021). In FY 2020-21, despite being a COVID year, the online food delivery market was reported to be Rs. 3,394 million dollars, only five per cent less than the previous year. According to the same source, as of FY 2020-21,

42 per cent revenue of online food delivery business came from eight Tier-I Indian cities followed by 30 per cent from 110 Tier-II cities and 28 per cent from 432 Tier-III cities (Table 3). While the average order value was Rs. 358 in Tier-I cities, it was Rs. 286 in Tier-II cities and Rs. 251 in Tier-III cities.

**Table 3: Details of Online Food Delivery Business in India in 2020-21**

| | Tier-I | Tier-II | Tier-III |
|---|---|---|---|
| Number of cities | 8 | 110 | 432 |
| Per cent revenue of online food delivery business | 42 | 30 | 28 |
| Average Order Value (Rs.) | 358 | 286 | 251 |
| Orders per month (in million) | 26 | 24 | 23 |
| Number of orders per rider per month (number) | 210 | 160 | 110 |
| Riders (calculated =d/e) (number) | 123,810 | 150,000 | 209,090 |
| Monthly rider revenue (Rs.) | 10,000 | 5,000 | 3750 |

A report by People Research on India's Consumer Economy (PRICE)[3] divided the Indian population into four categories, based on their household income categories – 'Destitute' with income of less than Rs. 1.25 lakhs per annum; 'Aspirers' with income of Rs. 1.25 to 5 lakhs per annum; 'Middle-class' with income of Rs. 5 to 30 lakhs per annum and 'Rich' with income of more than Rs. 30 lakhs per annum. According to the report, four per cent of India is 'Rich', 31 per cent is 'Middle class', 52 per cent is 'Aspirers' and 14 per cent is 'Destitute' in 2021. The 'Rich' and 'Middle class' categories were the main drivers of the food service sector. While the 'Rich' spent Rs. 1,03,000 on eating outside, the 'Middle-class' spent Rs. 22,000 per year on eating outside whereas 'Aspirers' spent only Rs. 6000 per annum to eat outside and Destitutes spent less than Rs. 1000 per annum on eating outside. Destitute and Aspirers have been the least attractive consumer segment for organized restaurants or food-tech companies because of their low spending on outside food and the 'Middle-class' have been the significant drivers of the business. The report shared that around 55 per cent of the middle-class population in nine Metros[4], 52 per cent population in 16 Boom Towns and 43 per cent population in Niche Towns were middle-class. The report also added that 21 per cent of the rest of urban and 24 per cent of developed rural were 'Middle-class'. The report also mentioned that the growth of the middle class in smaller cities of India was at

a higher rate than in the larger cities. Tier-II and Tier-III cities were increasingly becoming homes to a large number of the middle class.

As on November 13, 2024, Zomato managed to source a total funding of 1.69 billion USD from private sources.[5] On August 31, 2020, during the COVID-19 lockdown, Zomato managed to raise the highest amount since its inception. This amount was 660 million USD which was more than one-third of the total funding Zomato raised from private sources. Similarly, as on November 13, 2024, Swiggy (another Food Tech giant in India) raised a total of 3.58 billion USD from private sources. As in case of Zomato, Swiggy also managed to source the biggest funding on April 5, 2021, amidst the pandemic. This amounted to 1.25 billion USD[6] and was again more than one-third of Swiggy's entire funding from inception. Thus, between the two food-tech giants, 1.91 billion USD was raised during COVID-19. As shared by the recent SBI research report 2024, Zomato has 37 per cent of its operational revenue coming from Metro, 32 per cent from Urban and 31 per cent from Semi-urban cities.

As evident from Table 4, the revenue per order increased significantly and costs decreased drastically during the pandemic. Revenue heads of Zomato consist of commission, other charges and customer delivery charges. Expense heads of Zomato consist of food delivery costs, discounts and other variable costs. As compared between FY 2019-20 and FY 2020-21 (Table 4), the commission and other charges per order increased by 44 per cent from Rs. 43.6 to Rs. 62.8, the customer delivery charge per order increased by 76 per cent from Rs. 15.3 to Rs. 27. However, the delivery cost per order decreased by 12 per cent from Rs. 52 to Rs. 45.7, the discounts per order decreased by 62 per cent from Rs. 21.7 to Rs. 8.3 and other variable costs per order decreased by 3 per cent from Rs. 15.7 per cent to Rs. 15.3.

[3]The rise of India's middle class, https://price360.in/Executive_Summary_Middle_Class.pdf (Accessed January 31, 2024).

[4]The report categorized 'Metros' were categorized having more than five million population, 'Boom Towns' with having 2.5 to 5 million population and 'Niche Towns' having 1 to 2.5 million population.

[5]Summary of Funding Rounds of Zomato, https://tracxn.com/d/companies/zomato/__2jvEgmeJIRXZfZMrgik_9SLb8Bjtadw7dzpFRneP1u0/funding-and-investors (Accessed February 1, 2024).

**Table 4: Revenue and Costs for One Order in 2019-20 and 2020-21**

| | FY 2019-20 | FY 2020-21 | Change (%) |
|---|---|---|---|
| Commission and Other Charges (Rs.) | 43.6 | 62.8 | 44 |
| Customer Delivery Charge (Rs.) | 15.3 | 27.0 | 76 |
| Delivery Cost (Rs.) | 52.0 | 45.7 | (-) 12 |
| Discounts (Rs.) | 21.7 | 8.3 | (-) 62 |
| Other Variable Costs (Rs.) | 15.7 | 15.3 | (-) 3 |
| Contribution Profit / Loss (Rs.) | (-) 30.5 | 20.5 | 167 |

Source: Red Herring Prospectus of Zomato, Dated July 6, 2021
Note: Costs associated with marketing, branding and other fixed operating costs are excluded

As per *Forbes* article (Sharma, 2021), based on the orders per month and number of orders per rider per month, it is calculated that there were 123,810 riders in Tier-I cities, 150,000 riders in Tier-II cities and 209,090 riders in Tier-III cities (Table 3). The delivery partners of food-tech companies in Tier-I cities of India earned Rs. 10,000 per month, whereas, the riders in Tier-II cities of India earned Rs. 5,000 per month and the riders in Tier-III cities of India earned Rs. 3,500 per month. Thus, in India, during the COVID year, around three-fourths of delivery partners received Rs. 5000 or less per month. This was also the case with Zomato.

According to the Red Herring Prospectus, there were 239 million orders delivered by 169,802 delivery partners at Zomato in FY 2020-21 (Table 1) and per order delivery cost was Rs. 45.7(Table 4). Thus, a total of Rs. 10,922 million was paid to the 169,802 delivery partners of Zomato. Hence, on an average, a delivery partner, across all city categories, received a payment of Rs. 64,324 per annum or Rs. 5,360 per month in Zomato in the FY 2020-21.National Council of Applied Economic Research (NCAER) conducted a

[6]Summary of Funding Rounds of Swiggy, https://tracxn.com/d/companies/swiggy/__8L46lNfjqGM9DHz7xSR4zs7iWwa57QNKLZaVbfNa3T4/funding-and-investors (Accessed February 1, 2024).

survey[7] of 924 delivery workers in the online food delivery sector across India in April and May 2022. According to their report, 58.1 per cent food delivery workers were staying in a rented house or shared rental in Tier-I cities, and 51.1 per cent food delivery workers were staying in a rented house or shared rental in Tier-II cities. In contrast to this, only 26.7 per cent food delivery workers in Tier-III were staying in a rented house or shared rentals. Thus,food delivery workers in Tier-III cities could work on less income as they did not have to bear the burden of rented accommodation. This helped Zomato create a committed delivery workforce, even at lower payments as compared to their counterparts in the Tier-I and Tier-II cities.

According to the Ministry of Urban Poverty Alleviation, Government of India[8], there are 100 lakh street vendors in India out of which 20 lakhs are street food vendors. Among all the street vendors in India, urban street food vendors were severely impacted by the lockdown. The business of street vendors was affected, because of a lack of education to understand the technology functions and lack of enough profits to be able to share commission (Money Control, 2021). While Zomato benefitted from the pandemic, it has not been significant in uplifting the fate of street vendors across India. Figure 1 is based on data available on Zomato trends[9] which reveals state-wise orders of biriyani, pizza and street food as a per centage of the total number of orders of the three food items during the period September 2022 to August 2023. As the website allows comparison across only three food items, hence biriyani and pizza were selected along with street food to compare because biriyani and pizza are the most frequent food ordered online (*ET Online*, 2023).

As found from Zomato trends, Gujarat has the largest demand for street food through Zomato at 12 per cent of the state's demand for food across the three food items, followed by Maharashtra at five per cent and Rajasthan, Madhya Pradesh and Chhattisgarh at four per cent. All other states have street food

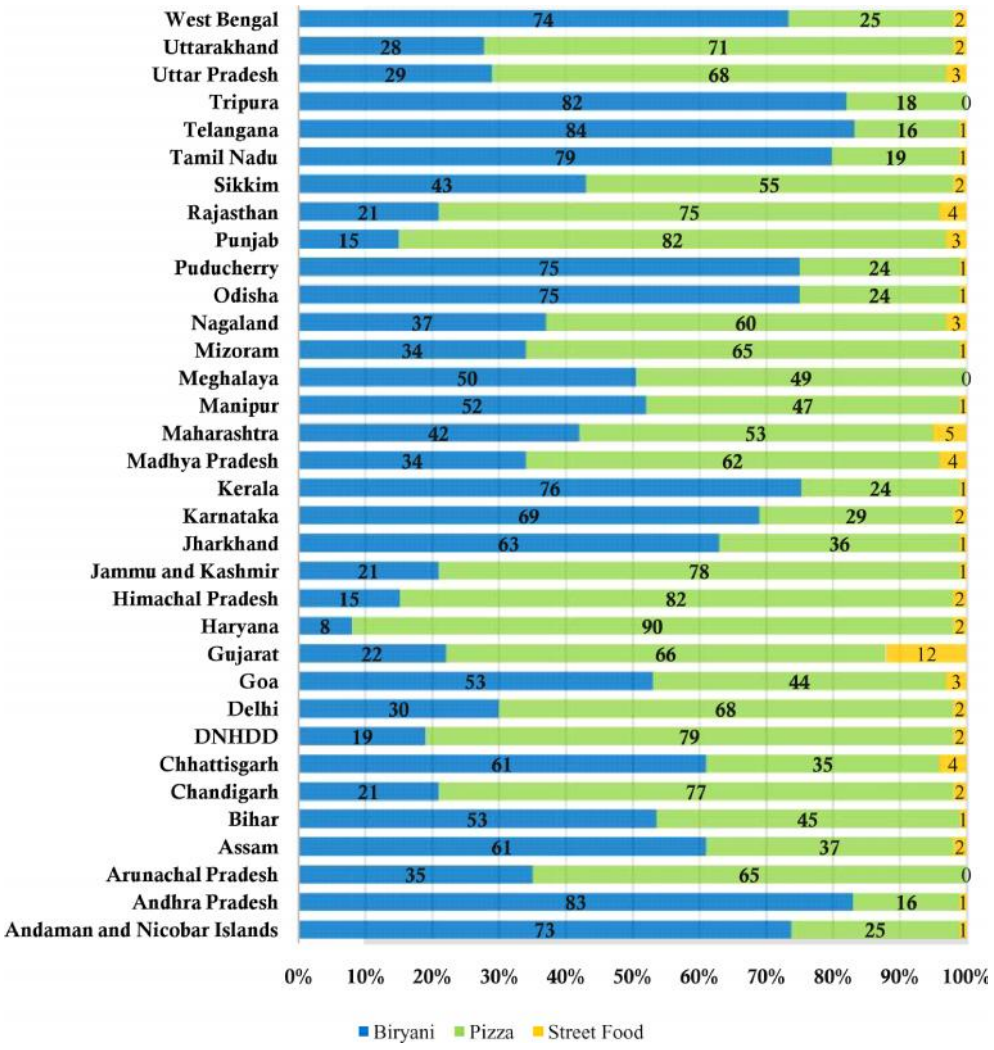
[7]https://www.ncaer.org/wp-content/uploads/2023/08/NCAER_Report_Platform_Workers_August_28_2023.pdf

[8]Project Clean Street Food - Recovering India's Rich Tradition of Street Food, https://www.fssai.gov.in/upload/knowledge_hub/5ab3802273f60Clean_Street_Food_Brochure.pdf (Accessed January 23, 2023).

orders through Zomato of three per cent or less when compared across the three food items. If other food items are included, the street food orders might be negligible. Though 60-65 per cent of the food service sector is informal, food-tech companies have not been able to partner with street food. As also revealed by Zomato trends, around 55.5 per cent of street food is priced at less than Rs. 100 per order, 30.4 per cent priced in the range of Rs. 100-200 per order, 10.1 per cent in the price range of Rs. 200-300 per order and only four per cent of Rs. 300 and above per order. Thus, around 86 per cent of the food ordered from street food is valued at less than Rs. 200 per order. This reveals that on one hand the food-tech giant has not been able to get more orders for street food and on the other the average order value is less than Rs. 200. Hence, the revenue from sales of street food through Zomato continues to a small fraction of the total sales of the street food. Hence, the increased corporatization of food supply chains in urban markets has not been able to increase the sales of street vendors. Still a large part of sales of street food happens across the food cart on the street.

[9]Data from https://www.zomato.com/trends/ (Accessed January 25, 2024).

**Figure 1: Share (%) of Demand for Biriyani, Pizza and Street Food, September 2022 to August 2023 Across States**




Source: Zomato trends accessed from https://www.zomato.com/trends/ on January 25, 2024.

## Concluding Observations

In the light of above discussions, it is clear that Zomato started moving into smaller cities before the pandemic and strengthened their presence in these cities during the pandemic. Operations in smaller cities increased revenues for the food tech companies, on one hand, and the other helped reduce operational

costs, thus attracting more investment during the pandemic than ever before. While Zomato continues partnering with organized restaurateurs to serve urban consumers of India, the street food vendors have not been able to increase their presence through Zomato. While the pandemic was wrecking the entire economy, however, it proved to be a boon in disguise for Zomato. During crisis, the food industry exhibits limited willingness to contribute to broader community welfare objectives, because it does not perceive this as its role. Restaurants which had logged out of partnership with Zomato, a year before, were forced to revive partnership with Zomato as customers mostly depended on online food delivery. Thus, Zomato not only endured but thrived amidst the pandemic and the prolonged lockdown. The revealing aspect was that Zomato did not serve the business of street food vendors whatsoever and inadvertently produced greater disparities as a consequence.

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Article

# Exploring the Nexus between Diversified Agriculture and Nutritional Health with Special Reference to Odisha

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## Abstract

This paper contributes to the dialogue on addressing nutritional issues in marginalised regions, emphasising the crucial role of diversified agriculture in enhancing nutritional well-being. It examines the elusiveness of agricultural diversification in Odisha through spatial trends across 30 districts during 2004-05 to 2018-19. The districts in coastal Odisha lack agricultural diversification while the southern districts are more diversified. This paper explores the nutritional status of nutritionally burdened districts of Odisha and examines the potential pathways connecting diversified agriculture with nutritional health.

**Keywords:** Diversified agriculture, Nutritional knowledge, Nutritional health, Dietary diversity, Nutritional outcome.

## Introduction

India has achieved a record foodgrain production of 3296.87 lakh tonnes (Department of Agriculture and Farmers Welfare, 2022-23). As an agricultural state, Odisha achieved a record foodgrain production of 13.606 million tonnes during the period 2022 to 2023. (Department of Agriculture and Farmers'

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Empowerment, 2022-23). However, this rise in foodgrains production is due to the higher contribution of cereal production. The chronic shortage of different nutritionally dense food items like edible oils and pulses in the country is its straight outcome (Chand & Pal 2003). Further activities like fishing, forestry and animal husbandry can reduce the dependency on natural resources by enabling households to purchase food and other necessary items while providing alternative sources of income (Jul-Larsen et al., 2003; Singh et al., 2006; Agarwal, 2004; Larsen & Lilleor, 2017; Joshi et al., 2006; Olney et al., 2015; Anuja et al., 2020). As agricultural diversification is vital for nutritional wellbeing the Public Distribution System (PDS) in 1965 emerged as a key intervention to increase access to staple foodgrains. The Antyodaya Anna Yojana Program (2000) was crucial in raising the cereal intake nationwide (Kumar et al., 2007). The Midday Meal Scheme and the Integrated Child Development Service (ICDS) were initiated for preschool children, adolescent girls and pregnant women as a supplementary nutrition program for ensuring food, education and good health to tackle the problem of mortality, morbidity and malnutrition.

However, all these efforts failed to bring out the expected results. Lack of quality diet consumption creates multi-fold challenges of nutritional deficiency. Nutritional tragedy in India is also not uncommon. In *Poor Economics* (2011), Abhijit Banerjee and Esther Duflo have mentioned that the general perception of aggravating obesity and diabetes results from the rising number of urban upper middle class. There are many linkages between crop diversification and household food security. Diversification of agriculture includes high valued crops and other livestock products (Joshi et al., 2006; Bamji, 2000; Dev, 2019; Kremen, 2012). Preference for high valued crops and food items results from increasing urbanisation and per capita income (Haque et al., 2010). Diversified agricultural activities are common in India as land fragmentation does not yield more for the small farmer's community (Bendre & Singh, 2017). The following discussion will highlight the need for agricultural diversification in Odisha.

## Agricultural Diversification and Nutrition-based Trap for Odisha

In Odisha, the rate of growth of crop diversification was sluggish between 1993 and 2002, and improved between 2002 and 2012 (Nayak & Kumar, 2019; Sarbeswar et al., 2013). Irrigated lands are under agricultural concentration,

especially for paddy cultivation (Basantaray & Nancharaiah, 2017). Agricultural diversification is one of the strategies to overcome monocropping and tackle the decline in agricultural productivity in a region like Odisha (Anuja et al., 2020; Pattanaik & Mohanty, 2017). Farmer communities in Odisha, especially in Koraput, Kalahandi, Rayagada, Nabarangpur and other nutritionally burdened areas, are found to be more specialised with paddy and least diversified.

Because the farmers focus on productivity and profitability of crops, livestock and fisheries without putting efforts to ensure the essential micro nutrients for health benefits (Mishra & Mishra, 2018).

In Odisha, 38.2 per cent of children were classified as stunted, 34.4 per cent were underweight, and 18.3 per cent were wasted. There is an incidence of Moderate Acute Malnutrition (MAM) at 406 per 1000 children, and 190 per 1000 children in rural Odisha and Jharkhand (Prost et al., 2019), and 39 per cent of the population in Odisha face adverse social conditions along with nutritional deficiency (Sobha & Kapur, 2020).

## Research Gap and Objectives

This study analyses the nexus between diversified agriculture and nutritional health, considing the existence of such marginalisation with a high burden of under nutrition in Odisha (Cole et al., 2016; Bird et al., 2019). Cross-sectional studies in the past have overlooked the phenomenon of effect to cause. The terminal year of the UN Millennium Development Goals (December 2015) saw India lagging in reducing under-nutrition while achieving the target for poverty reduction. Therefore, we ponder the causes underlying under nutrition in this paper. This paper explores Odisha's diversified agriculture status and nutritional health by focusing on agriculture-nutrition linkages.

## Data and Methods

Our secondary sources of data included the Agricultural Statistics of Odisha (2004-2005 to 2018-19), Department of Agriculture and Farmers' Empowerment, Odisha, Report of National Family Health Survey (NFHS, 2019-21), Ministry of Health and Family Welfare, Government of India (GoI); Reports of District Nutritional Profile by NITI Aayog (2020), GoI; Annual

Report of Ministry of Agriculture and Farmers Welfare (2022-23), GoI and Survey on Household Consumption Expenditure (HCES, 2022-23) by MoSPI, GoI. Descriptive statistical techniques are used for the analysis of data. Multiple data sources are used for an integrated and situational analysis (Van Velsen, 2017) to verify the objectives of the study. Additionally, this paper assesses the magnitude of district level agricultural diversification using the Gibbs-Martin index which is estimated as:

Gibbs-Martin's Index = $\frac{\Sigma X^2}{(\Sigma X)^2}$

Here, 'X' is the per centage of total cropped area occupied by a particular crop. The value of the above index ranges from 0 to 1. Higher diversification is associated with a higher index value and lower the index lower the diversification. This index helps to determine the magnitude of agricultural diversification. If the index value came closer to 1 that means the diversification will be higher.

## Results and Discussion

Convergence of agriculture to nutrition often produces multi-fold challenges along with opportunities. Addressing the nutritional gap while designing policies and programs leads to mild improvements in nutrition (Herforth et al., 2012). This paper has tried to justify the pertinent reasons for the agricultural diversification. The behavioural aspects of households and the performances of aspirational and nutritionally burdened districts of Odisha are also analysed.

## Essence of Diversified Agriculture and Odisha

Diversified agriculture has a positive effect on the farmers' welfare (Anuja et al., 2020) as high valued agricultural commodities fuel to economic growth, have a comparative advantage over staple grain (Rao et al., 2006) and support the effort to achieve nutritional security for a country like India (Kadiyala et al., 2021). Agarwal (2004) pointed out that the high-valued food segment constitutes of 47 per cent of total agricultural output, and it ensures higher aggregate net income of the farmer by serving as an efficient farming technique. Agricultural diversification is the outcome of increasing urbanisation and per capita income (Bowman, 2013). Diversification reduces the dependency on

natural resources by providing alternative sources of income (Jul-Larsen et al., 2003). Diversified farming enhances efficiency (input-output) and reduces risk of low productivity (Larsen and Liller, 2017; Haque et al., 2010). The area share of different crops can potentially provide a preliminary insight into the magnitude of agricultural diversification (Table1).

**Table 1: Area Shareof Crops of Odisha (% GCA)**

| Crops of Odisha | 2004-2007 | 2008-2011 | 2012-2015 | 2016-2019 |
|---|---|---|---|---|
| Rice | 50.55 | 46.95 | 46.47 | 46 |
| Other Cereals | 4.92 | 5.28 | 5.20 | 4.92 |
| Total Pulses | 20.57 | 22.76 | 22.8 | 23.71 |
| Total Oilseeds | 9.35 | 8.67 | 8.02 | 7.22 |
| Total Vegetables | 7.38 | 7.66 | 7.6 | 7.71 |
| Total Spices | 1.64 | 1.69 | 1.82 | 1.90 |
| Total Fibres | 1.06 | 1.28 | 1.69 | 1.91 |
| Sugarcane | 0.40 | 0.44 | 0.362 | 0.316 |
| Tobacco | 0.05 | 0.03 | 0.018 | 0.004 |
| Fruits | 4.07 | 5.24 | 6.02 | 6.35 |
| Gross Cropped Area (GCA) | 100 | 100 | 100 | 100 |

Source: Authors' estimation based on the Agricultural Statistics of Odisha
Note: GCA is measured in '000 hectare

From Table 1, it is evident that paddy is the dominant crop with an average share. Similar to the findings of Anuja et al. (2020), we also find that agriculture in Odisha is getting diversified as the concentration of paddy is decreasing, and an expansion of other crop cultivation and allied activities is evident. Pulses occupy the second largest share, followed by oilseeds and vegetables. The area shares of rice and pulses fluctuate between 46 per cent and 22 per cent, respectively. Nevertheless, there is an increase in fruits and vegetables in the total area share of crops.

## Agricultural Diversification Index

To extend the discussion on the variation in crop diversification index (*cdi*) across Odisha's districts, the study considers three different points of time 2004-05, 2011-12 and 2018-19 (Table 2).

**Table 2: Agricultural Diversification in Odisha, 2004-05 to 2018-19**

| Rank | District | 2004-05 | District | 2011-12 | District | 2018-19 |
|---|---|---|---|---|---|---|
| 1 | Gajapati | 0.827 | Kandhamal | 0.848 | Rayagada | 0.844 |
| 2 | Kandhamal | 0.825 | Rayagada | 0.835 | Kandhamal | 0.820 |
| 3 | Rayagada | 0.824 | Gajapati | 0.822 | Gajapati | 0.816 |
| 4 | Koraput | 0.782 | Koraput | 0.807 | Koraput | 0.778 |
| 5 | Angul | 0.756 | Angul | 0.762 | Angul | 0.763 |
| 6 | Malkangiri | 0.738 | Dhenkanal | 0.761 | Dhenkanal | 0.754 |
| 7 | Ganjam | 0.735 | Deogarh | 0.755 | Malkangiri | 0.746 |
| 8 | Dhenkanal | 0.717 | Malkangiri | 0.743 | Keonjhar | 0.738 |
| 9 | Keonjhar | 0.713 | Keonjhar | 0.743 | Bolangir | 0.731 |
| 10 | Nuapara | 0.708 | Bolangir | 0.729 | Kalahandi | 0.720 |
| 11 | Deogarh | 0.692 | Kalahandi | 0.727 | Nuapara | 0.716 |
| 12 | Nayagarh | 0.692 | Ganjam | 0.723 | Ganjam | 0.714 |
| 13 | Cuttack | 0.671 | Nayagarh | 0.722 | Deogarh | 0.709 |
| 14 | Bolangir | 0.663 | Nuapara | 0.712 | Nayagarh | 0.706 |
| 15 | Jajpur | 0.663 | Jharsuguda | 0.710 | Nabarangapur | 0.703 |
| 16 | Kalahandi | 0.659 | Jajpur | 0.709 | Cuttack | 0.693 |
| 17 | Jagatsinghpur | 0.654 | Sambalpur | 0.680 | Sundargarh | 0.687 |
| 18 | Boudh | 0.648 | Cuttack | 0.679 | Jajpur | 0.678 |
| 19 | Jharsuguda | 0.632 | Boudh | 0.679 | Boudh | 0.678 |
| 20 | Nabarangapur | 0.632 | Jagatsinghpur | 0.676 | Sambalpur | 0.663 |
| 21 | Kendrapara | 0.624 | Sundargarh | 0.674 | Khordha | 0.662 |
| 22 | Sambalpur | 0.612 | Nabarangapur | 0.671 | Jagatsinghpur | 0.661 |
| 23 | Sundargarh | 0.593 | Khordha | 0.657 | Jharsuguda | 0.631 |
| 24 | Khordha | 0.593 | Puri | 0.640 | Kendrapara | 0.625 |
| 25 | Puri | 0.543 | Kendrapara | 0.631 | Puri | 0.587 |
| 26 | Mayurbhanja | 0.523 | Subarnapur | 0.604 | Subarnapur | 0.582 |
| 27 | Subarnapur | 0.503 | Mayurbhanja | 0.579 | Mayurbhanja | 0.539 |
| 28 | Baragarh | 0.475 | Baragarh | 0.500 | Bhadrak | 0.438 |
| 29 | Balasore | 0.439 | Balasore | 0.496 | Baragarh | 0.434 |
| 30 | Bhadrak | 0.422 | Bhadrak | 0.453 | Balasore | 0.409 |
| Coefficient of variation | | 0.164 | | 0.136 | | 0.160 |

Source: Authors' estimation based on the *Agricultural Statistics of Odisha*

A wide variation in cdi across districts is observed. The districts in coastal Odisha (Jajpur and Bhadrak), central districts (Nayagarh and Kandhamal), southern districts (Rayagada and Koraput) and western districts (Kalahandi and Nuapara) have shown an improvement in agricultural diversification. At the same time, crop concentration has increased in Baragarh, Nabarangpur and Kendrapara districts. However, no perceptible trend in agricultural diversification was observed in the rest of the districts. Notably, agriculture in Gajapati, Kandhamal, Koraput and Rayagada, which are tribal-dominated, appears to be more diversified than the paddy dominated districts of Bargarh and Bhadrak, featuring at the lowest rank. The coefficient of variation (CV) in *cdi* shows that the diversification has remained constant after 2004-05. The study has also tested the significance of the change in the *cdi* (Table 3).

**Table 3: Result of Paired t-test**

| Pair | Mean | SD | t-value | p-value |
|---|---|---|---|---|
| cdi 2004-05 - cdi 2011-12 | 0.6518 | 0.1078 | -9.9175 | 0.0796 |
| cdi 2011-12 - cdi 2018-19 | 0.6909 | 0.0948 | 5.2448 | 0.0128 |
| cdi 2004-05 - cdi 2018-19 | 0.6518 | 0.1078 | -5.6192 | 0.0454 |

Source: Authors' estimation based on the data from the Agricultural Statistics of Odisha

**Table 4: Correlation Coefficients**

| | Spearman | | | Pearson | | | |
|---|---|---|---|---|---|---|---|
| cdi | 2004-05 | 2011-12 | 2018-19 | cdi | 2004-05 | 2011-12 | 2018-19 |
| 2004-05 | 1 | 0.946 | 0.935 | 2004-05 | 1 | 0.985 | 0.979 |
| 2011-12 | 0.946 | 1 | 0.951 | 2011-12 | 0.985 | 1 | 0.993 |
| 2018-19 | 0.935 | 0.951 | 1 | 2018-19 | 0.979 | 0.993 | 1 |

Source: Authors' computation from Table 2.

Note: Correlation is significant at the 0.01 level (2-tailed).

From 2011-12 to 2018-19, there was a decline in the *cdi*. However, there was a significant increase in *cdi* from 2004-05 to 2018-19, with little change in the ranking of the districts. This is represented through the correlation matrix of *cdi* 2004-05, *cdi* 2011-12 and *cdi* 2018-19 in Table 4. The coefficients of correlation are significant at a 1% level, indicating no significant change in the

values of cdi and ranking of districts over time. A closer look at the *cdi* ranking shows that districts of central and southern regions of the state have higher diversification and remain at the top. However, there is a variation in rankings for the rest of the regions of Odisha. Most of the districts in the southern region have higher *cdi* but are nutritionally burdened reflecting the agricultural diversification has not moved in favour of Odisha. In the next section, we explore the nutritional health of Odisha to verify the leverage of agriculture (concerning the magnitude of agricultural diversification) in nutrition.

## Burden of Nutrition on Odisha

Odisha's nutritional status based on reports of National Family Health Survey (NFHS-5) and NFHS-4, has been presented in Table 5.

**Table 5: Indicators of Nutritional Health for Odisha (%)**

| Indicators | NFHS-5(2019-20) | | | NFHS-4 |
|---|---|---|---|---|
| | Urban | Rural | Total | (2015-16) |
| Breastfeeding children aged 6-23 months receiving an adequate diet | 14.0 | 21.3 | 20.3 | 8.9 |
| Total children aged 6-23 months receiving an adequate diet | 14.7 | 21.4 | 20.4 | 8.5 |
| Children under 5 years who are stunted | 24.9 | 32.0 | 31.0 | 34.1 |
| Children under 5 years who are wasted | 14.9 | 18.6 | 18.1 | 20.4 |
| Children under 5 years who are underweight | 21.5 | 31.0 | 29.7 | 34.4 |
| Women whose Body Mass Index (BMI) is below normal (<18.5 kg/m$^2$) | 12.6 | 22.6 | 20.8 | 26.5 |
| Men whose Body Mass Index (BMI) is below normal (<18.5 kg/m$^2$) | 10.9 | 16.5 | 15.3 | 19.5 |
| Children aged 6-59 months are anaemic (<11.0 g/dl) | 56.2 | 65.6 | 64.2 | 44.6 |
| Non-pregnant women aged 15-49 years are anaemic (<12 g/dl) | 61.6 | 65.0 | 64.4 | 51.2 |
| Pregnant women aged 15-49 years are anaemic (<11 g/dl) | 59.5 | 62.2 | 61.8 | 47.6 |

| | | | | |
|---|---|---|---|---|
| All women aged 15-49 years are anaemic | 61.5 | 64.9 | 64.3 | 51.0 |
| Men aged 15-49 years are anaemic (<13 g/dl) | 24.0 | 29.6 | 28.5 | 28.3 |
| Blood sugar levels are high or very high (>140 mg/dl) among women | 17.4 | 13.3 | 14.0 | NA |
| Blood sugar levels are high or very high (>140 mg/dl) among men | 20.3 | 16.4 | 17.0 | NA |
| Elevated blood pressure among women (Systolic e"140 mm of Hg or Diastolice" 90 mm of Hg) | 24.5 | 21.9 | 22.4 | NA |
| Elevated blood pressure among men 29.3 (Systolic e"140 mm of Hg or Diastolic e" 90 mm of Hg) | 24.9 | 25.6 | NA | |

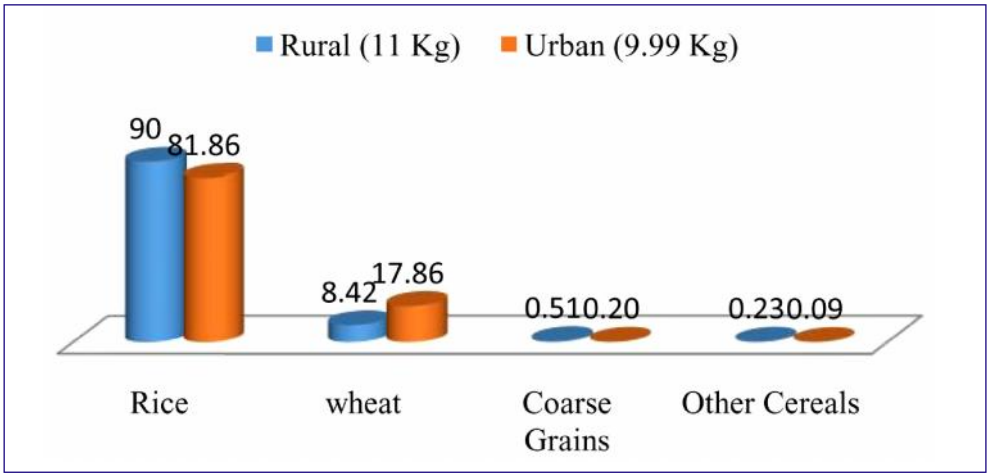
Source: NFHS-5(2019-20), Ministry of Health and Family Welfare, GoI

It can be said that Odisha has a sluggish recovery in different health parameters like child stunting and wasting. Compared to 2015-16, there is a mild improvement in stunting of children under the age of five in 2019-20. In 2015-16, 34.1 per cent of children were stunted, while in 2019-20, the children stunting was 31.0 per cent. However, 32.0 per cent of stunting in rural areas is still higher than in urban area (24.9 per cent), representing a disparity. Similarly, in case of child wasting, it improved from 20.4 per cent to 18.1 per cent in Odisha. Similarly, the indicator of wasting is higher in rural areas, with 18.6 per cent, than 14.9 per cent in urban areas. 12.6 per cent of women and 10.9 per cent of men in urban areas have below normal BMI. However, 22.6 per cent of women and 16.5 per cent of men in rural areas had below normal BMI in 2019-20. The concern is that 65.6 per cent of children in rural areas and 56.2 per cent in urban areas are anaemic in 2019-20. There is an alarming increase in anaemic chidren in comparison to 44.6 per cent in 2015-16. Similarly, 64.3 (61.5-urban and 64.9- rural) per cent women were anaemic in 2019-20 in comparison to 51 per cent in 2015-16, showing the vulnerability of women. Twenty-four per cent of men in urban areas are anaemic, while 29.36 per cent in rural areas out of 28.5 per cent in 2019-20.

## Factors Responsible for Nutritional Vulnerability in Odisha

The status of per capita cereal consumption in Odisha is presented in Figure 1.

**Figure 1: Per Capita Cereal Consumption in Odisha** (%)




Source: Survey on Household Consumption Expenditure (HCES), 2022-23, MoSPI, GoI

It can be inferred that the per capita cereal consumption is high in the rural areas. Rice, being the primary staple, is consumed by 90 per cent of the population. Diets are seemingly concentrated in the consumption of cereals (Carletto et al., 2015). This phenomenon can be better expressed by analysing relative share of food expenditure.

**Table 6: Per centage Share of Food Items in Total Food Expenditure in 2022-23**

| Food Items | Odisha | | All India | |
|---|---|---|---|---|
| | Rural | Urban | Rural | Urban |
| Cereals | 12.8 | 11.7 | 10.6 | 9.3 |
| Milk and Milk Products | 6.8 | 10.8 | 18.0 | 18.4 |
| Vegetables | 15.3 | 12.8 | 11.6 | 9.7 |
| Fruits | 6.6 | 8.4 | 8.0 | 9.7 |
| Egg, Fish and Meat | 13.1 | 11.3 | 10.6 | 9.1 |
| Beverages, Processed Food etc | 22.9 | 26.6 | 20.7 | 27.2 |
| Others | 22.5 | 18.5 | 20.5 | 16.6 |

Source: Survey on Household Consumption Expenditure (HCES), 2022-23, MoSPI, GoI

Table 6 shows a lower preference of households towards consuming of cereals and fruits in Odisha and India. The highest expenditure is on beverages and processed foods, so the diets are concentrated towards expensive edibles. Most importantly, dietary diversity is biased towards sugar-based food items that are more expensive than other grains and bereft of other nutritional value. Shifting expenditure towards high valued food items like fruits, vegetables, and cereals could solve the problem of nutritional tragedy in Odisha (Carletto et al., 2015; Pingali & Sunder, 2017). Besides consumption preferences, health and nutritional interventions are key determinants of nutritional outcomes. Therefore, the effectiveness of interventions is also essential for a better nutritional status. Now the study will progress by assessing the performances of Odisha in health and nutritional interventions.

## Status of Health and Nutritional Interventions in Odisha

There is an absolute regional variability in the major determinants of nutrition and the coverage of key nutrition and health interventions in Odisha (District Nutritional Profile, NITI Aayog, 2020). This regional variability can also be observed with a deeper analysis of the status of aspirational districts of Odisha which are nutritionally burdened. These districts are Koraput, Kalahandi, Malkanigiri, Nabarangpur, Nuapada, Rayagada, Kandhmal, Gajapati and Dhenkanal. The variability in interventions across the first 1000 days for 2016 and 2020 can be noted in Table 7, 8 and 9.

**Table 7: Coverage of Interventions across the First 1000 Days (%) in Koraput, Kalahandi and Malkangiri, 2016 and 2020.**

| Interventions | Koraput | | Kalahandi | | Malkangiri | |
|---|---|---|---|---|---|---|
| | 2016 | 2020 | 2016 | 2020 | 2016 | 2020 |
| Pregnancy Registered (MCP) | 98 | 100 | 97 | 99 | 95 | 99 |
| Institutional Birth | 68 | 82 | 75 | 82 | 68 | 91 |
| Financial Assistance | NA | 72 | NA | 74 | NA | 74 |
| Skilled Birth Attendant | 73 | 86 | 77 | 92 | 77 | 94 |
| Postnatal Care for Mothers | 49 | 84 | 59 | 94 | 69 | 89 |
| Postnatal Care for Babies | 19 | 84 | 10 | 90 | 39 | 86 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Food Supplementation | NA | NA | NA | NA | NA | NA |
| Health and Nutrition Education | NA | NA | NA | NA | NA | NA |
| Health Checkup (ICDS) | NA | NA | NA | NA | NA | NA |
| Full Immunization | 67 | 98 | 88 | 91 | 77 | 95 |
| Vitamin A | 62 | 90 | 85 | 92 | 78 | 88 |

Source: District Nutritional Profile, NITI Aayog, 2020

**Table 8: Coverage of Interventions across the First 1000 Days (%) in Nabarangpur, Nuapada and Rayagada, 2016 and 2020.**

| Interventions | Nabarangpur | | Nuapada | | Rayagada | |
|---|---|---|---|---|---|---|
| | 2016 | 2020 | 2016 | 2020 | 2016 | 2020 |
| Pregnancy Registered (MCP) | 92 | 100 | 99 | 100 | 97 | 100 |
| Institutional Birth | 64 | 88 | 85 | 90 | 69 | 72 |
| Financial Assistance | NA | 79 | NA | 76 | NA | 66 |
| Skilled Birth Attendant | 69 | 88 | 87 | 93 | 72 | 80 |
| Postnatal Care for Mothers | 68 | 89 | 71 | 86 | 68 | 70 |
| Postnatal Care for Babies | 35 | 89 | 36 | 87 | 39 | 70 |
| Food Supplementation | NA | NA | NA | NA | NA | NA |
| Health and Nutrition Education | NA | NA | NA | NA | NA | NA |
| Health Checkup (ICDS) | NA | NA | NA | NA | NA | NA |
| Full Immunization | 71 | 95 | 84 | 97 | 71 | 93 |
| Vitamin A | 78 | 87 | 61 | 89 | 77 | 90 |

Source: District Nutritional Profile, NITI Aayog, 2020

**Table 9: Coverage of Interventions across the First 1000 Days (%) in Kandhamal, Gajapati and Dhenkanal, 2016 and 2020**

| Interventions | Kandhamal | | Gajapati | | Dhenkanal | |
|---|---|---|---|---|---|---|
| | 2016 | 2020 | 2016 | 2020 | 2016 | 2020 |
| Pregnancy Registered (MCP) | 95 | 100 | 95 | 99 | 98 | 100 |
| Institutional Birth | 73 | 94 | 63 | 76 | 90 | 95 |
| Financial Assistance | NA | 83 | NA | 72 | NA | 74 |
| Skilled Birth Attendant | 77 | 95 | 68 | 80 | 93 | 93 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Postnatal Care for Mothers | 69 | 91 | 46 | 78 | 82 | 91 |
| Postnatal Care for Babies | 38 | 91 | 20 | 74 | 36 | 90 |
| Food Supplementation | NA | NA | NA | NA | NA | NA |
| Health and Nutrition Education | NA | NA | NA | NA | NA | NA |
| Health Checkup (ICDS) | NA | NA | NA | NA | NA | NA |
| Full Immunization | 73 | 97 | 46 | 93 | 87 | 89 |
| Vitamin A | 83 | 87 | 59 | 80 | 77 | 86 |

Source: District Nutritional Profile, NITI Aayog, 2020

From Tables 7, 8 and 9, it can be seen that almost all district performed well in the indicator of registered pregnancy under the issuance of Mother Child Protection Card as part of National Health Mission. Vitamin A supplements are given to children during the first five years through the card. There is an increment to 100 per cent of pregnancies registered except Kalahandi (99 per cent), Malkanigiri (99 per cent) and Rayagada (99 per cent). Dhenkanal performs well with 95 per cent of institutional births, while Gajapati has the lowest at 76 per cent. Kandhamal district receives the highest per centage (83 per cent) of financial assistance under the Janani Suraksha Yojana, while Rayagada receives the lowest at 66 per cent. Regarding Vitamin A supplementation, Kalahandi receives the highest 92 per cent, followed by Rayagada (90 per cent). In the category of post-natal care for babies and mothers, all the districts except Gajapati and Rayagada benefitted. The primary pit fall of the coverage of interventions is that food supplementation, health and nutrition education, and health check-ups (ICDS) are ineffective, and such information is not available in the public domain. The availability of reliable and systematic data regarding status and temporal changes is one of the challenges in assessing nutritional wellbeing (Carletto et al., 2015). Moreover, additional data are needed for the underlying determinants of nutritional outcomes. Data regarding the frequency of hand washing of individuals at the household level is an integral part of sanitation, and the data regarding Kangaroo Mother Care is also a key determinant of the nutritional outcomes at the regional level (Penalva, 2006). The study will unfold the avenue for the meaningful convergence between diversified agriculture and nutrition in the next section.

**Unfolding the Nexus between Agriculture and Nutrition**

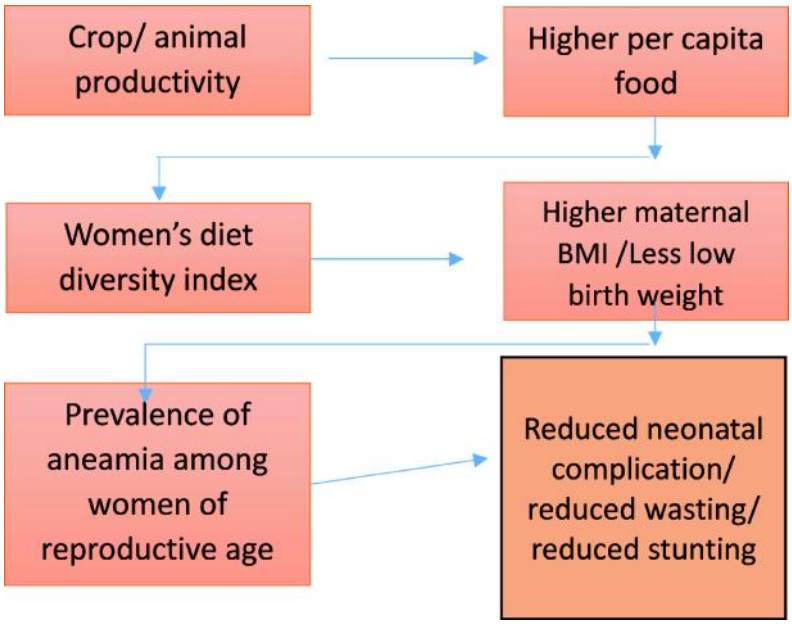
From the analysis, it is clear that agricultural diversification is preliminary condition; however, it cannot solve the problem of nutritional burden alone. Many physiological and psychological factors are responsible for this nutritional burden. As these physiological and psychological factors vary concerning regions (Gillespie et al., 2019), this paper integrates the findings of past studies to unfold the linkage between agriculture and nutrition. Ghosh and Qadeer (2017) showed that the per-capita per-day average calorie intake of different economic groups in India declined steadily from 1993-94 to 2009-10. The calorie intake was even less than recommended. It pressured the food budget and forced people to cut down on consumption. NSS sample rounds also showed that calorie intake declined. Additionally, there is no shifting of consumption towards high-valued foods. Olney et al. (2015) highlight the lack of quality foods, seasonal variation and water shortages, suboptimal feeding to infants and young children, and lack of hygiene and sanitation contributing to nutritional deficiencies.

Nutritional literacy, political commitment and efficient use of financial resources could resolve the problem of under nutrition (Shetty, 2015; Sabar, 2012). Nagarajan et al. (2014) attempted to explore the nutritional imbalance underneath higher productivity. Their intervention-based study on Wardha region offered various opportunities to mitigate nutrition deficiency and its consequences. The disparity between crop production and the mapping of natural resources can be reduced by harmonizing Community Nutrition Gardens (CNG) with backyard farming and animal production. Kumar et al. (2007) noted that vulnerability regarding food security especially among the poor can be reduced by promoting intense agricultural diversification and market access. Masters et al. (2018), Das et al. (2018), and Herforth et al. (2012) made clear that nutritional deficiency is the leading cause of death, disability and inequality among children. Therefore, child nutrition is prioritised in countries with low-income settings along with other economic challenges. However, the food transfers were costliest program per child targeted although was significant in increasing dietary consumption than other mechanism (Herforth et al., 2012; Ruel & Alderman, 2013). Home gardening appears as a

feasible option for less affluent family in diversifying the diet at regional level (Vijayaraghavan, 1997).

Das et al. (2014) demonstrated the location specific model underneath the Farming System for Nutrition (FSN) to highlight the importance of efficient nutritional outcomes by prioritising agricultural production system, dietary diversity, enhancement of income, awareness related to nutrition and pattern of behaviour. Pingali and Sunder (2017) have justified a nutrition specific food system for more diversified agriculture, not limited to staple grain production. The pathway for better nutritional outcomes are depicted in Figure 2.

**Figure 2: The Pathway for Better Nutritional Outcome**




Source: Authors' compiled from the existing literature

Establishing a formal market for tackling undifferentiated commodities often distributed out of the market may lead to appropriate development steps towards leveraging agriculture for nutrition.

## Concluding Observations

A diversified farming system bears absolute potential to positively affect small farms along with the collaborative effort of agriculture scientist, administrators, policy makers, extension workers and NGOs at the rural level. Primarily, the study attempted to verify the objective of exploring the status of diversification in the agriculture in Odisha. From 2011-12 to 2018-19, there was a decline in the crop diversification index. However, there has been an increase in *cdi* from 2004-05 to 2018-19. However, for the period, Odisha was moderately diversified in agriculture. A regional divide related to agricultural diversification is observable between districts of the southern part and other districts. Except for Jagatsinghpur and Jajpur, all coastal districts have low agricultural diversification. Meanwhile, nutritionally burdened districts exhibit higher agricultural diversification than Nabarangpur, Subarnpur and Nuapara.

However, regarding the state's nutritional health status, the vulnerability still persists. Rural-urban disparities are observed in many of the health parameters. Extensive analysis of this study on nutritionally burdened districts of Odisha found that the Gajapati and Rayagada districts are still struggling for nutritional well-being even after having a higher agricultural diversification. Expensive edibles are Odisha's dietary preferences, and Odisha's inclination towards sugar-based food items like beverages showed the diversion from nutrition-based food items. Therefore, this shift poses threat to people's health. Moreover, the prediction of future changes in diet is challenging because of some unavoidable reasons linked with rising food prices and tastes and preferences. Subsequently, the ineffectiveness of different health interventions is clearly observable in this study. As a limitation, the study analysed nutritional health based explicitly on performance related to health interventions. Further scrutiny and micro-level analysis are required to explore other associated causes.

Overall, agricultural diversification in Odisha has failed to stimulate nutritional health in nutritionally burdened region. As potential solutions, this study motivates the strengthening and extension of the value chain of nutrition and dissemination of nutritional knowledge for the best desired nutritional outcomes. Promoting of integrated Kangaroo Mother Care (Penalva, 2006) intervention will safeguard the child's health and put special attention towards mother. Additionally, intensifying strategic government initiatives for combating nutritional deficiencies could potentially drive Odisha to a state of well-being.

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*Article*

# Does Governance Matter in Attaining Sustainable Development Goals: Evidence from Indian States

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## Abstract

Poor governance at national and global levels is a principal reason for the unsatisfactory performance of the Sustainable Development Goals (SDGs). This paper empirically analyses the role of governance in achieving the SDGs at the state level in India. The empirical results signify that high-income levels do not guarantee superior governance as the probability of being better-governed increases as states move from the low-income to the middle-income category but falls as you move to the high-income category and the probability of improvement in the SDG Index increases with strong governance.

**Keywords:** Governance, Sustainable Development Goals (SDGs), Indian states, Conditional Probabilities, Fisher's Exact test

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## I. Introduction

Poor governance at the global and national levels is a prime factor contributing to the unsatisfactory achievement of the Sustainable Development Goals (SDGs), highlighting the importance of governance in accomplishing these goals. In September 2015, the United Nations (UN) (2015) member countries established the SDGs, consisting of 17 goals, 169 targets, and various indicators to be attained by 2030. Governance has been included as part of the 16$^{th}$ goal of "Peace, Justice and Strong Institutions" and in the 17$^{th}$ goal of" Partnerships for the Goals" (Biermann,et al., 2014). As per the 2023 Sustainable Development Report (SDR), India and other countries made some progress between 2015-19, and the Global SDG Index increased slightly from 64 per cent in 2015 to 66 per cent in 2019. However, the COVID-19 pandemic and other global crises have hindered the achievement of SDGs. During 2022, the Global SDG Index was below 67 per cent (SDR, 2023). Given the current growth rate, the SDR 2023 does not expect the achievement of even a single SDG by 2030. As per the SDR 2023, four primary reasons have been identified for deficiency in global and national governance: i) lack of any effective multilateral enforcement mechanism to monitor implementation of SDGs by respective countries; ii) unaccountability of developed countries for any negative spillovers along with their non-provision of sufficient finances required for sustainable development; iii) Inconsistency between the SDGs and rules related to global trade and capital flows; and iv) lack of vertical coordination among different levels of government in a country. For effective implementation of programs and policies at the local level, it is essential for sub-national governments to take the lead, as numerous challenges arise at both local and sub-national levels.

Given the critical role of governance in achieving the SDGs, particularly at the regional level,this study is one of the first to assess the role of governance in attaining the SDGs in Indian states. Analysing the relationship between governance and SDGs at the state level is essential for identifying local issues and, more importantly, for formulating effective policy responses to achieve the SDGs. This would help in resolving many issues that developing countries like India are facing, from reducing poverty, eliminating hunger, ensuring good health and education for all, gender equality, providing clean water and sanitation facilities, clean and sustainable energy, higher economic growth, improved

infrastructure facilities, reduction in inequality, justice for all and protecting the environment and building strong institutions.

In this context, the first objective of this paper is to analyse the Good Governance Index (GGI), which has been developed by the Department of Administrative Reforms and Public Grievances (DARPG), Government of India (GoI), at both the state and sectoral levels.The second objective is to examine the status of SDGs for India and states using the SDG Index (NITI Aayog). The final objective is to investigate the relationships between the GGI, per capita income, and SDGs for Indian states.

The paper is organized into six sections. The next section (Section II) provides a brief discussion on the theories that connect governance with growth. The third section reviews the existing literature. The following section (Section IV) analyzes the GGI2021 at both the state and sectoral levels. Subsequently, an analysis of the SDG index (NITI Aayog, GoI) for India and its states is conducted (Section V). This is followed by discussion on the data, variables, research methodology, and a discussion of the empirical findings (Section VI). Finally, the policy implications, main conclusions, and potential areas for future research are discussed (Section VII).

## II. Theoretical Background

There are three main schools of thought on the governance-growth linkage. The first one is the market enhancing governance capabilities, where the central role of the government is to provide for efficient markets. This is part of the New Institutional Economics that emerged in the later part of the twentieth century (North, 1995). The leading theory behind this is that increasing market efficiency would reduce transaction costs, rent-seeking and corruption, thereby promoting more transactions and increasing efficiency. In addition to this, it also includes policies to reduce poverty in developing countries.

It is challenging for any developing country to implement good governance reforms during the initial stages of development. The second school of thought, known as the growth-enhancing governance capabilities applies in the initial stages of development when property rights are not completely stable. Therefore, growth is not entirely based on the stability of property rights but on the role of governance in transferring resources to more productive sectors,

introducing new technologies, increasing investment and maintaining political stability (Khan, 2006).

The third school of thought is the growth-governance hypothesis (Rodrik, 2003), which is based on the premise that even minorgovernance reforms can lead to higher growth rates. This is also known as the good enough governance (Rodrik, 2003). The idea behind this is that many developing countries do not have enough resources to implement governance reforms. According to Grindle (2004), as these countries eventually attain higher investment and growth rates, they will have enough resources to implement other extensive governance reforms.

## III. Literature Review

This section reviews studies on governance and human development indicators, highlighting the importance of good governance at global and national levels in achieving SDGs. Empirical evidence shows that effective governance positively impacts development outcomes.

van Zeijl-Rozema et al. (2008) theoretically examine the relationship between governance and sustainable development, mapping sustainable development between ecological sustainability and quality of life. Then, they map governance between hierarchical governance and deliberative governance based on participation by various agents in a society. They deduce that governance challenges can hinder sustainable development. Ramzy et al. (2019) also find a strong relationship between governance concepts and sustainable development through interviews with 100 respondents and by adopting the case study method. Likewise, Massey (2022) emphasizes the importance of the 16th (Peace, Justice and Strong Institutions) and 17th (Partnership for the Goals) SDGs for achieving other SDGs and elaborates on standards for evaluating the performance of public services.

Empirical studies reinforce these insights. Using the data set for 20 MENA (Middle East and North Africa) countries over the period 1996 to 2014, Omri & Mabrouk (2020) examine the impact of good governance on sustainable development (SD) by adopting the simultaneous equation model. The results indicate that political and institutional governance have favourable effects on all the three pillars (economic, environmental, and social components) of SD.

Similarly, Davis (2016) investigates the relationship between human development and governance in sub-Saharan Africa, demonstrating that policies aimed at enhancing two governance measures—political stability and government effectiveness—have substantial impacts on human development and poverty reduction.

Rajkumar & Swaroop (2008) analysed cross-section data for 91 countries from 1990, 1997, and 2003, and found that good governance amplifies the impact of public health expenditures on reducing child mortality. Similarly, using a panel data set for 43 Sub-Saharan African countries (for the period: 1995 - 2011), Makuta & O'Hare (2015) find that in countries that have better governance indicators, an increase in public health expenditure is two times more effective in decreasing Under-Five Mortality (U5M) and increasing Life Expectancy at Birth (LEB). Using corruption index as a governance indicator, Gupta et al. (2000), find that reducing corruption improves child and infant mortality rates, low-birth-weight babies, and primary school dropout rates in 128 countries. Kaufmann & Zoido-Lobaton (1999) show that governance positively impacts (as measured by voice and the rule of law) infant mortality and per capita incomes in over 150 countries. In a recent study, Lin et al. (2014) analysed the data for 149 countries from 1996 to 2010. Using all the six indicators of governance given by Kaufmann et al. (2010), they observe that governance significantly reduces the U5M rate after controlling for other factors related to development and disease control.In another study, Singh (2022) examined the relationship between governance and growth in BRICS economies from 1997 to 2015 using panel data and Granger causality tests. The results indicate that in the short run, a certain minimum level of development is necessary for improved governance, while in the long run, better governance leads to a higher rate of economic growth.

Hooda (2014) constructed the decentralisation index for India covering 1990 to 2005. The study results show that an increase in the degree of decentralisation (political and fiscal) in rural areas is associated with increased effectiveness of public spending in influencing infant mortality rates. At a disaggregated level, Mundle et al. (2012) constructed the governance index for Indian states. Their empirical results show that the governance index in each state is positively related to economic growth. However, the relationship appears to be statistically insignificant.

These empirical findings collectively underscore the pivotal role of governance in attaining superior development outcomes. While much of the existing literature has concentrated on the theoretical analysis of the connections between governance and SDGs, most empirical studies have explored the relationship between governance and sustainable development on a cross-country basis. This study is one of the first to empirically assess the impact of governance on India's achievement of the SDGs at the regional level. The next section examines the GGI.

## IV. Analysing Good Governance Index 2021

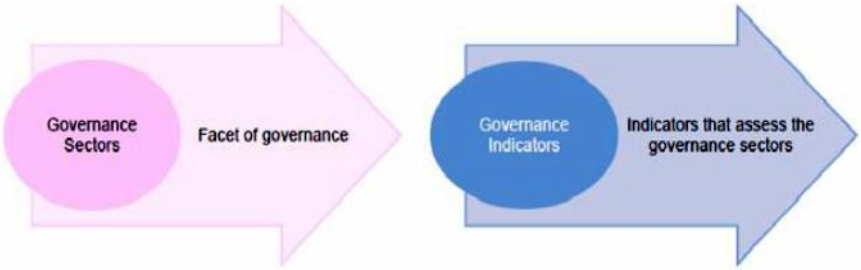
From Millennium Development Goals (MDGs) to SDGs, governance has been identified as the critical factor affecting variations in the pattern and levels of development across countries. The GGI, constructed by the DARPG, aims to measure sub-national level governance and rank the states accordingly. This would help assess the efficacy of various government policies and identify problem areas and canbe used to suggest policies and reforms to improve the ranking of states and achieve superior human development outcomes in terms of health, education, environment, industry, law and order situation, and inequality, to name a few.

The methodology for the construction of GGI involves four steps. Firstly, various national, state, and district-level discussions are carried out to select the appropriate sectors and indicators. Next, it adopts a citizen-centric approach that involves a major objective of improvement in the quality of life for each citizen. The sectors and indicators focus more on providing critical goods and services from the government to the citizens and the quality of service delivery. Thirdly, it involves a 360-degree and pragmatic approach that tries to cover all the governance dimensions and the significant ones are chosen. Additionally, sectors and indicators are selected considering the availability of secondary data. Lastly, it follows a generic-to-specific approach wherein all governance sectors are identified and narrowed down to the critical ones.

The selection of indicators within each sector is based on the following principles: a) it involves simple calculations and hence, easy to understand b) indicators are primarily output and outcome-oriented as the governance in the

construction of GGI is defined mainly in terms of the provision of services and goods to citizens with a focus on service delivery by the government c) easily applicable and usable across all the states and d) accurate and reliable time series data for all states and UTs available with various ministries of the government. The index is constructed using the Dimensional method, which normalizes the indicator values to make them comparable. Figure 1 below shows the framework adopted for the construction of GGI.

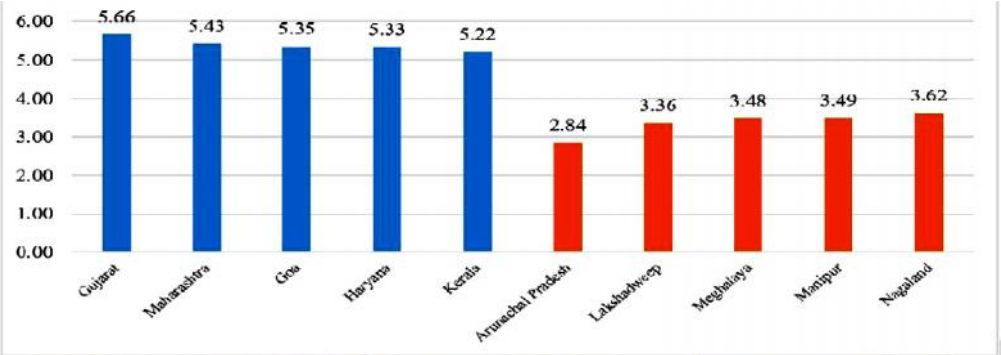
**Figure 1: Framework for Good Governance Index**




Source: Good Governance Index - Assessment of the State of Governance GGI 2020-21, DARPG

The GGI2021 ranks states/union territories (UTs) based on ten sectors: (i) agriculture and allied activities, (ii) commerce and industries, (iii) human resource development, (iv) public health, (v) public infrastructure and utilities, (vi) economic governance, (vii) social welfare and development, (viii) judicial and public security, (ix) environment, and (x) citizen centric governance. All these sectors carry equal weight. Figure 2 shows the top five and the bottom five states per the GGI 2021 composite scores.

**Figure 2: GGI2021 - Top 5 & Bottom 5 States as per GGI Composite Scores**

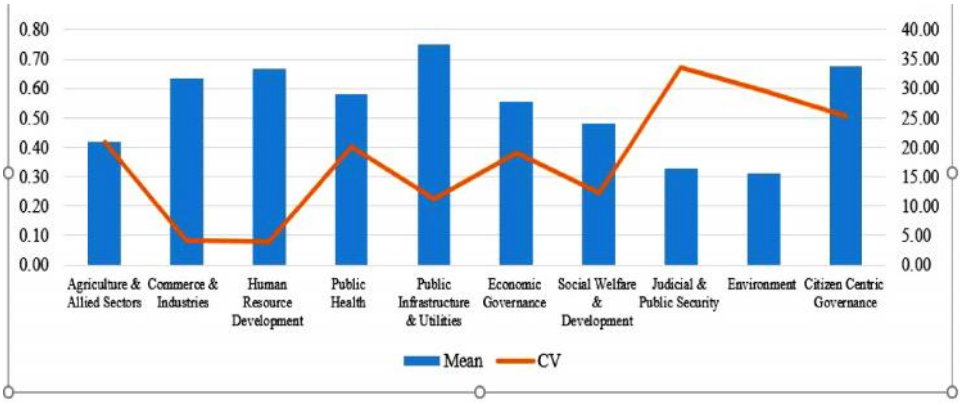



Source: Authors' calculations based on Good Governance Index – Assessment of the State of Governance GGI 2020-21, DARPG

The top three states - Gujarat, Maharashtra and Goa - lie in the western region, followed by Haryana and the southern state of Kerala. Looking at the bottom five states, four (Arunachal Pradesh, Meghalaya, Manipur and Nagaland) are the north-east states, and one is the UT of Lakshadweep.

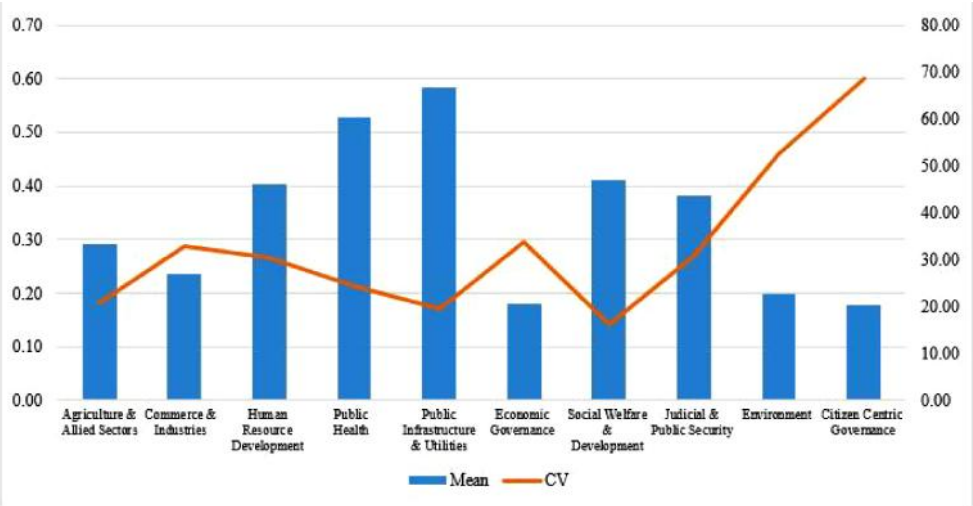
Next, the performance of these states is analysed at the sectoral level by measuring the average and variability. The average is calculated using the arithmetic mean, and the coefficient of variation measures the variability. Figure 3 shows the sectoral performance for the top five states and Figure 4 shows the sectoral performance for the bottom five states.

**Figure 3: Sectoral Performance of Top 5 States**




Source: Authors' calculations based on Good Governance Index - Assessment of the State of Governance GGI 2020-21, DARPG

**Figure 4: Sectoral Performance of Bottom 5 States**




Source: Authors' calculations based on Good Governance Index - Assessment of the State of Governance GGI 2020-21, DARPG

At the sectoral level, the top five states perform the best in the public infrastructure and utilities and human resource development (HRD) sector and show the least variation in HRD. These states have the lowest scores and maximum variability in environmental, judicial and public security. The bottom five states perform well in public infrastructure and utilities and public health. However, they perform poorly in economic governance and citizen-centric governance. These states show the highest variation in citizen centric governance and the lowest in social welfare and development. In Table 1, the sectoral matrix depicts the top five and bottom five states according tosectoral performance.

**Table 1: Sectoral Performance of Top 5 & Bottom 5 States**

| Agriculture & Allied Sectors | Commerce & Industries | Human Resource Development | Public Health | Public Infrastructure & Utilities | Economic Governance | Social Welfare & Development | Judicial & Public Security | Environment | Citizen-Centric Governance |
|---|---|---|---|---|---|---|---|---|---|
| Top five States (highest to lowest performer) | | | | | | | | | |
| Madhya Pradesh | J & K | Chandigarh | Kerala | Goa | Delhi | Chhattisgarh | Nagaland | Daman & Diu | Haryana |
| Andhra Pradesh | Telangana | D & N Haveli | A & N Islands | A & N Islands | Gujrat | D & N Haveli | Tamil Nadu | Puducherry | Rajasthan |
| Mizoram | Uttar Pradesh | Puducherry | Puducherry | Himachal Pradesh | Telangana | Madhya Pradesh | Uttarakhand | Kerala | Uttar Pradesh |
| Chhattisgarh | Himachal Pradesh | Delhi | Mizoram | Sikkim | Karnataka | Sikkim | Kerala | Rajasthan | Chhattisgarh |
| D & N Haveli | Gujrat | Daman & Diu | Lakshadweep | Telangana | Maharashtra | Telangana | Chandigarh | West Bengal | Gujrat |
| Bottom five States (lowest to highest performer) | | | | | | | | | |
| Daman & Diu | Manipur | Manipur | Uttar Pradesh | Meghalaya | J & K | Nagaland | West Bengal | Telangana | Sikkim |
| Delhi | A & N Islands | Arunachal Pradesh | Madhya Pradesh | Lakshadweep | Arunachal Pradesh | Assam | Telangana | Mizoram | Arunachal Pradesh |
| Arunachal Pradesh | Chandigarh | Nagaland | Assam | Rajasthan | Nagaland | Delhi | Assam | Nagaland | Andhra Pradesh |
| Nagaland | D & N Haveli | Madhya Pradesh | Rajasthan | Uttar Pradesh | Manipur | Bihar | Haryana | Arunachal Pradesh | Meghalaya |
| Chandigarh | Lakshadweep | Rajasthan | Chhattisgarh | Odisha | A & N Islands | Arunachal Pradesh | Goa | Lakshadweep | Manipur |

Source: Authors' calculations based on GGI 2021

## V. Analysis of the Sustainable Development Goals Index (SDG Index) for India and States

The United Nations SDR (2023) calculates the SDG overall score to assess how a country has performed in the 17 SDGs and is calculated as the per centage of SDG achievement. The SDG score is based on 97 global indicators, and all the goals have equal weight. India has a score of 63.5 relative to the world average of 67.2 and ranks 112 out of 166 countries.

At national and sub-national levels (SDG India Index & Dashboard, 2020-21, NITI Aayog), the objective of the SDG Index is to evaluate the performance of states and UTs regarding the attainment of SDGs. It covers 16 SDGs and excludes goal 17 due to lack of sufficient data for which a qualitative assessment is done. The 16 goals cover 54 targets and 100 indicators.

In Tables 2 and 3, the level of SDG achievement is classified into four categories: achiever (100), front runner (65-99), performer (50-64) and aspirant (0-49). The green colour cells represent the Front Runner category, the yellow colour cells represent the Performer category, and the red colour cells depict the Aspirant category.

**Table 2: SDG India Index (Levels and Trends) for India**

| S. No. | Goals | 2019 | 2020 | % Change | Trend |
|---|---|---|---|---|---|
| 1 | No Poverty | 50 | 60 | 20.00 | ↑ |
| 2 | Zero Hunger | 35 | 47 | 34.29 | ↑ |
| 3 | Good Health and Well-being | 61 | 74 | 21.31 | ↑ |
| 4 | Quality Education | 58 | 57 | -1.72 | ↑ |
| 5 | Gender Equality | 42 | 48 | 14.29 | ↑ |
| 6 | Clean Water and Sanitation | 88 | 83 | -5.68 | ↓ |
| 7 | Affordable and Clean Energy | 70 | 92 | 31.43 | ↑ |
| 8 | Decent Work and Economic Growth | 64 | 61 | -4.69 | ↓ |
| 9 | Industry, Innovation and Infrastructure | 65 | 55 | -15.38 | ↓ |
| 10 | Reduced Inequalities | 64 | 67 | 4.69 | ↑ |
| 11 | Sustainable Cities and Communities | 53 | 79 | 49.06 | ↑ |
| 12 | Sustainable Consumption and Production | 55 | 74 | 34.55 | ↑ |
| 13 | Climate Action | 60 | 54 | -10.00 | ↓ |
| 14 | Life below Water | NA* | NC* | NA* | → |
| 15 | Life on Land | 66 | 66 | 0.00 | → |
| 16 | Peace, Justice and Institutions | 72 | 74 | 2.78 | ↑ |
| 17 | Partnerships for the Goals | NA* | NA* | NA* | - |
| | All India | 60 | 66 | 10.00 | ↑ |

Source: Authors' calculation based on SGD India Index, NITI Aayog
Notes: *NA - Not Available, **NC - No Change

Table 2 shows the levels and trends in the SDG index for India. At the All-India level, the SDG index shows an improvement from 60 to 66,moving upwards from frontrunner to performer. In 2020, four goals have moved up from performer to front runner. However, one goal Industry, Innovation and Infrastructure - has moved from being the frontrunner to a performer. Also, the two goals of zero hunger and gender equality remain in the aspirant category even during 2020, which is a cause of concern.

Analysing the trends, in 11 out of 16 goals, there is an improvement in 2020 relative to 2019. Only two goals remained constant in the year 2020 relative to

2019. Lastly, four goals show a drop in performance. Goal 11 and Goal 12 show the highest growth rates. In contrast, Goal 9 and Goal 13 register the lowest growth rates.

**Table 3: Analysing the Sustainable Development Goals (SDG) Index for States in India**

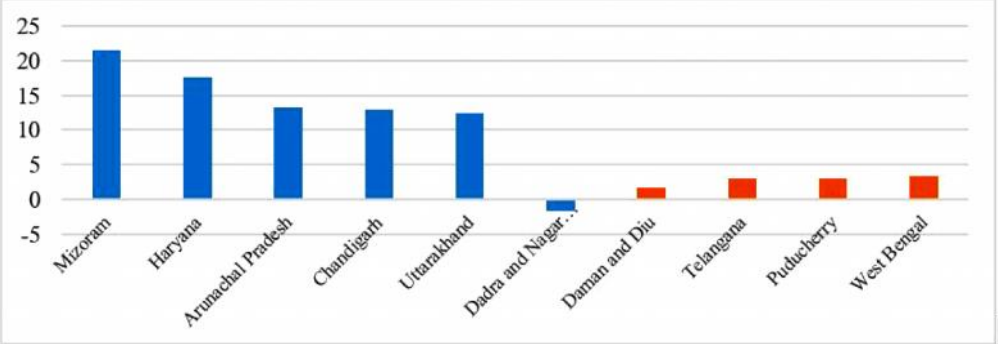
| S. No. | States | 2019 | 2020 | % Change | Trend |
|---|---|---|---|---|---|
| 1 | Mizoram | 56 | 68 | 21.43 | ↑ |
| 2 | Haryana | 57 | 67 | 17.54 | ↑ |
| 3 | Arunachal Pradesh | 53 | 60 | 13.21 | ↑ |
| 4 | Chandigarh | 70 | 79 | 12.86 | ↑ |
| 5 | Uttarakhand | 64 | 72 | 12.50 | ↑ |
| 6 | Tripura | 58 | 65 | 12.07 | ↑ |
| 7 | Jammu and Kashmir | 59 | 66 | 11.86 | ↑ |
| 8 | Delhi | 61 | 68 | 11.48 | ↑ |
| 9 | Meghalaya | 54 | 60 | 11.11 | ↑ |
| 10 | Goa | 65 | 72 | 10.77 | ↑ |
| 11 | Tamil Nadu | 67 | 74 | 10.45 | ↑ |
| 12 | Andaman and Nicobar Islands | 61 | 67 | 9.84 | ↑ |
| 13 | Punjab | 62 | 68 | 9.68 | ↑ |
| 14 | Maharashtra | 64 | 70 | 9.38 | ↑ |
| 15 | Sikkim | 65 | 71 | 9.23 | ↑ |
| 16 | Karnataka | 66 | 72 | 9.09 | ↑ |
| 17 | Uttar Pradesh | 55 | 60 | 9.09 | ↑ |
| 18 | Chhattisgarh | 56 | 61 | 8.93 | ↑ |
| 19 | Lakshadweep | 63 | 68 | 7.94 | ↑ |
| 20 | Gujarat | 64 | 69 | 7.81 | ↑ |
| 21 | Andhra Pradesh | 67 | 72 | 7.46 | ↑ |
| 22 | Himachal Pradesh | 69 | 74 | 7.25 | ↑ |
| 23 | Kerala | 70 | 75 | 7.14 | ↑ |
| 24 | Nagaland | 57 | 61 | 7.02 | ↑ |
| 25 | Madhya Pradesh | 58 | 62 | 6.90 | ↑ |
| 26 | Manipur | 60 | 64 | 6.67 | ↑ |
| 27 | Jharkhand | 53 | 56 | 5.66 | ↑ |
| 28 | Rajasthan | 57 | 60 | 5.26 | ↑ |
| 29 | Odisha | 58 | 61 | 5.17 | ↑ |
| 30 | Bihar | 50 | 52 | 4.00 | ↑ |
| 31 | Assam | 55 | 57 | 3.64 | ↑ |
| 32 | West Bengal | 60 | 62 | 3.33 | ↑ |
| 33 | Puducherry | 66 | 68 | 3.03 | ↑ |
| 34 | Telangana | 67 | 69 | 2.99 | ↑ |
| 35 | Daman and Diu | 61 | 62 | 1.64 | ↑ |
| 36 | Dadra and Nagar Haveli | 63 | 62 | -1.59 | ↓ |
|  | All India | 60 | 66 | 10.00 | ↑ |

Source: Authors' calculations based on SDG India Index, NITI Aayog

Table 3 shows the levels and trends in the SDG Index for Indian states. Analysing the SDG Index at the state level, 11 states moved from the performer to the front runner category in 2020. If we look at the trends in 2020 relative to 2019, all the states show an improvement except Dadra and Nagar Haveli. In 2020, Chandigarh ranked one. Bihar remains the worst state in 2019 and 2020, scoring 52. This is explained by seven out of 17 goals in the aspirant category.

Figure 5 shows the top and bottom five states as per growth rates in the SDG Index. Mizoram registers the highest growth rate, and Dadra and Nagar Haveli lie at the other extreme.

**Figure 5: Per centage Change SDG Index-Top 5 & Bottom 5 States**




Source: Authors' calculations based on SDG India Index, NITI Aayog

On average, the SDG Index, both at the All India and state level, shows progression towards SDGs.

## VI. Data, Variables and Research Methodology

### *A. Data and Variables*

Governance is measured using the GGI 2021 developed by DARPG, GoI. The index varies from 0 (poor quality) to 10 (superior quality). The data on Per Capita Net State Domestic Product (PCNSDP) at constant prices (2011-12) for 2020-21 is taken from the *Handbook of Statistics on Indian States*, a Reserve Bank of India publication. The states are classified into three groups according to their income levels. The data on the SDG India Index for the year 2020 is taken from the NITI Aayog. It varies from 0 (lowest) to 100 (highest).

**Table 4: Sources of Data for the Study**

| Variable | Source of Data |
|---|---|
| Governance – Good Governance Index 2020-21 (GGI2021) | Department of Administrative Reforms and Public Grievances (DARPG) |
| Per capita Net State Domestic Product (PCNSDP 2020-21), constant prices (2011-12) 2020-21 | The Handbook of Statistics on Indian States- RBI Publication |
| SDG India Index 2019 and 2020 (SDG Index 2019 and SDG Index 2020) | NITI Aayog |

B. Research Methodology

The study uses simple statistical techniques to examine the linkage between governance, income levels and SDGs. The study analyses the following two relationships: i) governance and income levels and ii) governance and SDGs for the Indian states. This analysis calculates joint probability distribution tables, relative frequencies and conditional probabilities. In addition, Fisher's Exact test (Freeman & Cambell, 2007) is carried out to test whether the two categorical variables are related.

C. Empirical Analysis and Results

*C.1 Governance and Income levels.* This analysis is based on 33 states and UTs classified into states with strong and weak governance using the median value of the GGI2021, which is 4.67. States are grouped according to their per capita income levels, and a per centile is used for this classification into low-income (INR 72,219 or less), middle-income (INR 72,220 to 157,222) and high-income (INR 157222 or more) states. The association between governance and income levels is tested for Indian states.

Table 5 shows the governance and income matrix for states. The matrix shows the maximum number of states with strong governance in the middle-income category and weak governance in the low-income category.

**Table 5: Governance - Income Matrix**

| | Low Income (INR 72,219 or less) | Middle-Income (INR 72,220 to 157,222 | High-Income (INR 157222 or more) |
|---|---|---|---|
| Strong Governance | Jharkhand, Madhya Pradesh | Chhattisgarh, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Mizoram, Puducherry, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttarakhand | Delhi, Goa, Gujarat, Haryana, |
| Weak Governance | Assam, Bihar, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Odisha, UP, West Bengal | Andhra Pradesh, Arunachal Pradesh, Tripura | Andaman & Nicobar Islands, Chandigarh, Sikkim |

Source: Authors' calculations

Next, the relationship between income levels and governance is tested. Table 6 shows the cross tabulations and joint probability distribution between incomes and governance. The values in brackets are the relative frequencies. The relative frequencies for the first row are calculated as 6.06 (2/33), 36.36 (12/33), and 54.55 (18/33),these are similarly calculated for the other rows and columns.

**Table 6: Cross-Tabulation and Joint Probability Distribution Table - Income and Governance**

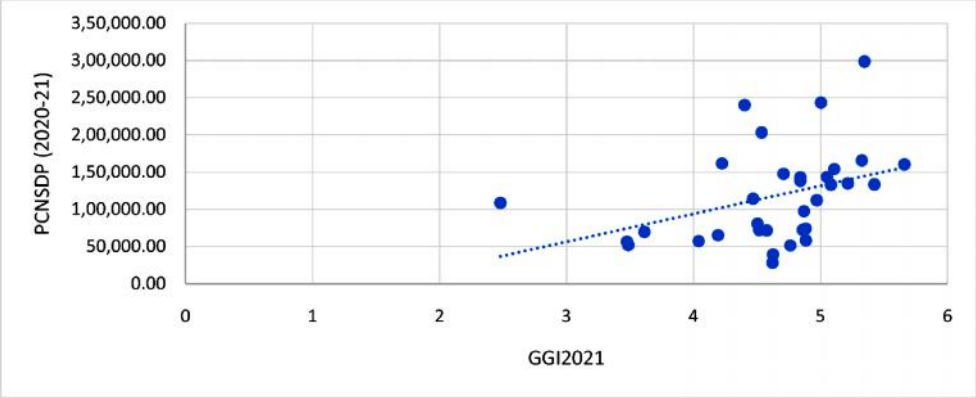
| | Low-Income (INR 72,219 or less) | Middle-Income (INR 72,220 to 157,222) | High-Income (INR 157222 or more) | Total |
|---|---|---|---|---|
| Strong Governance | 2(6.06) | 12(36.36) | 4(12.12) | 18(54.55) |
| Weak Governance | 9(27.27) | 3(9.09) | 3(9.09) | 15(45.45) |
| Total | 11(33.33) | 15(45.45) | 7(21.21) | 33(100) |

Source: Authors'calculations

The probability that a state has superior governance ifit belongs to the low-income group is only 18.18 per cent (6.06/33.33), and it increases to 80 per cent (36.36/45.45) for middle-income states. However, it drops to 57.14 per cent for high-income states. This shows that the relationship is the strongest for the middle-income states, and that high-income levels do not guarantee

better governance. The p-value for Fisher's Exact test is 0.006, and hence, we conclude that based on the data for the year 2021, there is a relationship between income levels and governance for the states in India. Figure 6 shows the scatter plot between income levels and governance. The scatter plot shows a positive association between incomeand governance. However, it is stronger for middle-income states, as reconfirmed by the conditional probabilities calculated above.

**Figure 6: Scatter Plot for Income and Governance**




Source: Authors'calculations

*C.2. Governance and SDGs.* The analysis is based on 36 states and UTs. Table 7 shows the SDGs and Governance matrix for the Indian states. The matrix shows that the maximum number of states in the front runner category have strong governance, and the highest number of states in the performer category are poorly governed.

**Table 7: Governance - SDG Matrix**

| | Aspirant (0-49) | Performer (50-64) | Front Runner (65-99) | Achiever (100) |
|---|---|---|---|---|
| Weak Governance | None | UP, Bihar, Odisha, WB, Assam, Nagaland, Manipur, Meghalaya, Arunachal Pradesh, Daman & Diu, D&N Haveli | Andhra Pradesh, Tripura, Sikkim, J & K, Chandigarh, A & N Islands, Lakshadweep | None |
| Strong Governance | None | MP, Rajasthan, Chhattisgarh, Jharkhand | Gujarat, HP, Maharashtra, Mizoram, Goa, Haryana, Kerala, Karnataka, TN, Punjab, Telangana, Delhi, Puducherry, Uttarakhand | None |

Source: Authors' calculations

Next, the association between governance and SDGs is tested. Table 8 shows the cross- tabulations and joint probability distribution between the SDG Index and governance. The values in brackets are the relative frequencies. The relative frequencies for the first column are calculated as 30.56 (11/36) and 19.44 (7/36), and it is calculated in the same way for other columns and rows.

**Table 8: Cross Tabulation and Joint Probability Distribution Table – Governance and SDGs**

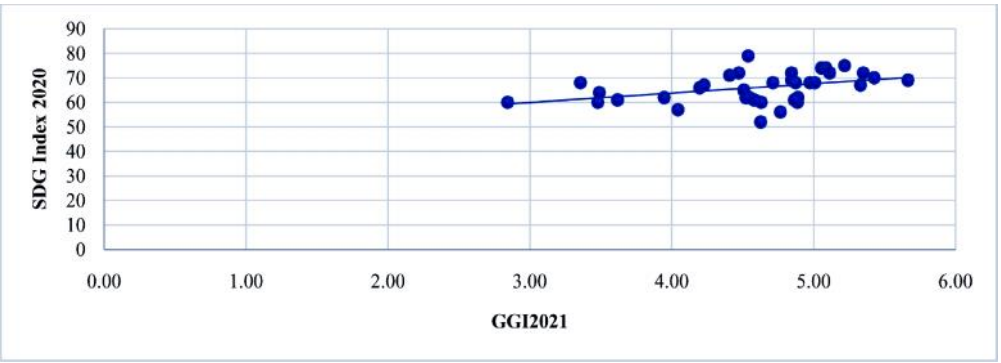
| | Weak Governance | Strong Governance | Total |
|---|---|---|---|
| Performer (50-64) | 11 (30.56) | 4 (11.11) | 15 (41.67) |
| Front Runner (65-99) | 7 (19.44) | 14 (38.89) | 21 (58.33) |
| | 18 (50.00) | 18 (50.00) | 36 (100.00) |

Source: Authors'calculations

The probability of a state being the frontrunner in SDGs with weak governance is 38.88 per cent (19.44/50), and it significantly increases to 77.78 per cent (38.89/50) for states with strong governance. Therefore, the probability of improvement in the SDG Index increases with better quality of governance. The p-value for Fisher's Exact test is 0.04, which is significant at a 5 per cent

significance level. Hence, we conclude that based on the data, there is a relationship between governance and the SDG Index for the states in India. Figure 7 shows the scatter plot between SDGs and governance. The scatter plot shows a high positive correlation between SDGs and governance, also reconfirmed by the above conditional probabilities.

**Figure 7: Scatter Plot - SDGs and Governance**




Source: Authors'calculation

## VII. Conclusion, Policy Implications and Scope for Future Research

Inferior quality of governance at the global and national levels has been identified as the main reason for the unsatisfactory performance of SDGs (Sachs et al. 2023). This study is one of the first to examine the crucial role of governance in achieving SDGs at the regional level for India. This can further identify issues at the state level so that states can develop the desired policy response to accomplish the SDGs.

Given that governance has a crucialrole in accomplishing the SDGs, the first objective of the study is to analyse the GGI 2021 constructed by the DARPG, GoI for the years 2021 and 2019. As per GGI 2021, the top three states (Gujarat, Maharashtra and Goa) lie in the western region of India, and four (Arunachal Pradesh, Meghalaya, Manipur and Nagaland) of the bottom five states are the North-Eastern states.

At the sectoral level, the top five states perform the best in public infrastructure

and utilities and show the least variation in the human resource development sector. These states have the lowest scores and show maximum variability in the environmental, judicial,and public security sectors. The bottom five states perform well in public infrastructure and utilities but poorly in economic governance and citizen centric governance. These states also show the highest variation in citizen centric governance and the least in social welfare and development.

The second objective is to examine the SDG Index by NITI Aayog at national and state levels. India's SDG index improved from 60 in 2019 to 66 in 2020. Goals 11 and 12 showed the highest growth rates, while Goals 9 and 13 had the lowest. At the state level, 11 states moved from the performer to front runner category in 2020. All states improved except Dadra and Nagar Haveli. Chandigarh topped the index, while Bihar was the worst performer with a score of 52. Mizoram and Haryana had the highest growth rates, and Dadra and Nagar Haveli and Daman and Diu had the lowest.

Two relationships were examined: i) income levels and governance, and ii) SDG Index and governance for Indian states. The analysis used scatter plots, cross tabulations, joint probability distributions, conditional probabilities, and Fisher's Exact test. Findings indicate that the probability of better governance increases from 18.18% to 80% when states move from low to middle income but falls to 57.14% in the high-income category. The probability of a state being a front runner in SDGs increases significantly from 38.88% to 77.78% with strong governance. The Fisher's Exact test p-value is significant for both relationships.

The results indicate that high-income levels do not guarantee superior governance, and improvement in the SDG Index is more likely with strong governance. Good governance at all levels is essential to achieving SDG targets. The Sustainable Development Solutions Network (SDSN) evaluates the government efforts and commitment towards SDGs for 74 countries. The scores vary from 0 (shallow SDG commitment) to 100 (very high SDG commitment). On average, at the global level, government efforts and commitment towards SDGs remain very low at 56 per cent. Sweden has the highest score of 81.9 per cent, while the United States has the lowest at 28.6 per cent. India ranks 66th

with an overall policy score of 48, indicating a very low level of commitment and effort towards achieving the SDGs.

Thus, all efforts should be made to improve governance,especially at the regional and local levels, as that is where the major problems lie. This would help the states recognise the key issues (such as poverty, inequality, gender inequality, environmental degradation, unemployment and economic growth, health and education, environmental degradation, law and order issues and weak institutions) and the appropriate action to deal with them. This would further improve the standard of living at a regional and local level.

As discussed, the study uses simple statistical techniques to investigate the relationship between governance, incomes and SDGs. The conditional probabilities tell us how the two variables move together and the Fisher's Exact test if they are related. This can be a good starting point as we can infer from the results that there is a relationship between governance and incomes and governance and SDGs on the other. However, the more advanced techniques like the Granger causality tests cannot be carried out as the state-level governance data is available only for two years. For the same reason, comparisons cannot be made over a more extended period; this is important as researchers and policymakers would want to know the states which have improved and the ones that have lagged. Therefore, the direction of causality and intertemporal comparisons can be made as more data becomes available.

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*Research Note / Commentary / Perspectives*

# Regional Development Councils or Aspirational Block Development Councils in Odisha?

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## Abstract

The Government of Odisha has recently announced that it will constitute North Odisha and South Odisha Development councils to address the regional disparity. This article aims to identify the most backward regions of Odisha and critically evaluates the merit of the state's proposal to constitute regional development councils. In order to address this objective, a comparison has been made of the findings of two commissions set up by the government of Odisha, namely (i) Committee on the Constitutions of Separate Development Board in Odisha, 1994 and (ii) Regional Imbalance Enquiry Commission, 2008. We have shown the concentration of very backward and backward blocks in different regions. As regional disparity is omnipresent in the state, we recommend the constitution of the Aspirational Block Development Council instead of any Regional Development Councils.

**Keywords:** Regional Disparity, Odisha, Development Council, Aspirational Blocks, Tribal Blocks

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## 1. Introduction

On June 23, 2024, the 15th Chief Minister of Odisha, Shri Mohan Charan Majhi, instructed the Planning and Convergence Department to set up a task force to create development councils for thesouthern and northern regions. Subsequently, on July 23, 2024 the Chief Minister's Office notified the constitution of a high-level task force for forming the North Odisha Development Council under the chairmanship of the Housing and Urban Development Minister, Shri Krushna Chandra Mohapatra, and eight other members. Before this, in September 2017,the state governmenthad notified the formation of a Special Development Council (SDC) for the nine tribal majority districts, namely Mayurbhanj, Keonjhar, Sundargarh, Kandhamal, Gajapati, Koraput, Rayagada, Malkangiri, and Nabarangapur (eight districts as per 2011 Census). These districts have more than 50 per cent tribal population. In May 2023, the state government announced it would bring 14 more districts under the SDC. In September 2024, the new government dissolved all 23 SDCs.

People from different parts of Odisha have raised their voices from time to timeto address the perpetual underdevelopment of their regions. In recognition of the alleged regional imbalances, the state government has in the past constituted two central committees to examine the regional backwardness: (i) Committee on the Constitutions of Separate Development Board in Odisha (RCCSDBO), 1994, and (ii) Regional Imbalance Enquiry Commission (RIEC), 2008. The Government of Odisha has also established (November 1998) the Western Odisha Development Council (WODC) to remove regional imbalances by undertaking targeted development programmes in western Odisha.

This article critically examined the nature of regional disparity in Odisha across 30 districts and 314 blocks. We have compared the block-level development indices computedby RCCSDBO, 1994, and RIEC, 2008 to understand the nature of regional disparity in Odisha across different regions. Based on the classification of RCCSDBO and RIEC, we have shown the number of backward and very backward blocks in different administrative, geographical, tribal, and non-tribal regions. We have critically evaluated the government's proposal to

constitute regional development councils based on these results. Based on these evaluations, we have argued that the state government should constitute an Aspirational Block Development Council (ABDC) instead of any Regional Development Council (RDC). The ABDC will effectively address the long-standing issue of regional disparity in the state, especially the gap between tribal and non-tribal regions. Thus, our paper makes a meaningful analysis of the available data to provide appropriate policy suggestions to reduce the regional disparity in Odisha.

## 2. Regional Disparity in Odisha

Odisha can be divided into different regions based on geography and administrative divisions. As mentioned in the RIEC report, 2008, the state can be divided geographically into five regions: Eastern, Western, Southern, Northern, and Central, as presented in Figure 1. As per this division, 39 blocks under two districts come under the northern region; 71 blocks under six districts come under the southern region; 31 blocks under four districts come under the central region; 89 blocks under the nine districts come under the eastern region; and 84 blocks under nine districts come under the western region. However, the National Sample Survey Office (1972-73 and 1987-88) classifies Odisha into three broad regions: coastal (central), southern, and northern, as presented in Figure 2.The state government also uses the same classification for administrative purposes: revenue divisions. Thirty districts of Odisha have been placed under three revenue divisions or NSS divisions, each with ten districts.

Table 1 presents the distribution of blocks and districts in different geographical regions and the division based on tribal and non-tribal majority regions. A district or block is defined as a tribal majority if the tribal population is equal to or greater than 50 per cent. Thus, 102 blocks and eight districts in Odisha can be considered tribal majority, and 212 blocks and 22 districts can be considered non-tribal majority regions.

**Figure 1: Geographical Divisions of Odisha**

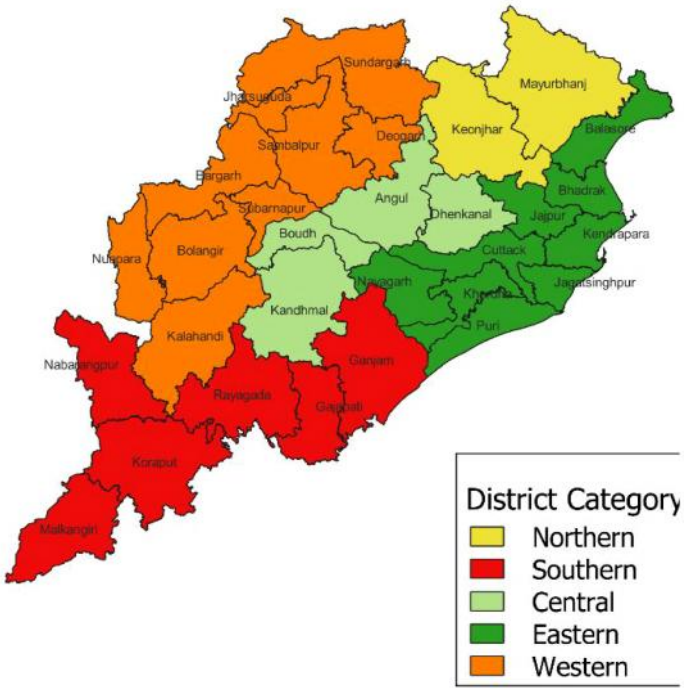



**Figure 2: NSS/Administrative Divisions of Odisha**

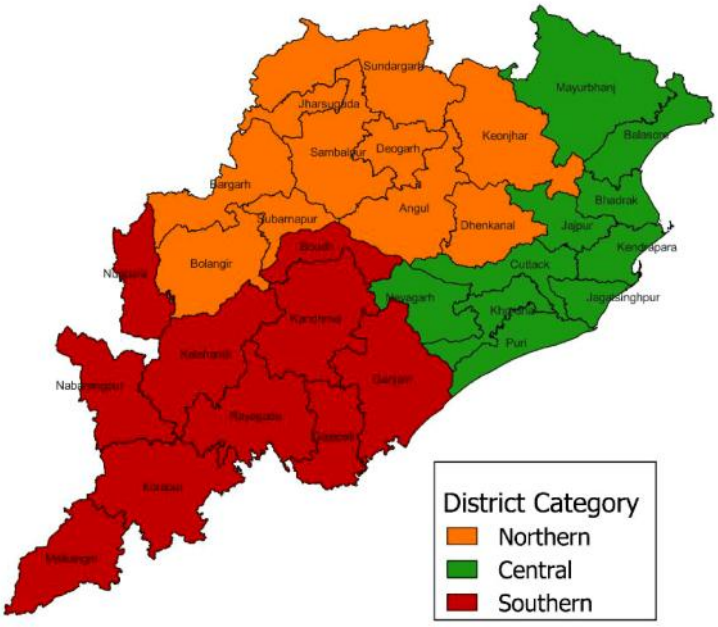


**Table 1: Distribution of Districts and Blocks by Geographical and Tribal Regions**

| Regions | Number of Districts | Number of Blocks |
|---|---|---|
| *Geographical Regions* | | |
| Northern | 2 | 39 |
| Southern | 6 | 71 |
| Central | 4 | 31 |
| Eastern | 9 | 89 |
| Western | 9 | 84 |
| *Tribal-Non tribal Regions* | | |
| Tribal | 8 | 102 |
| Non-Tribal | 22 | 212 |

### 2.1 Disparity across NSS/Administrative Regions

Among the three NSS regions, the southern region has the highest concentration of poverty headcount ratio (22.38%) compared to the coastal (10.82%) and northern region (13.48%) (GoI, 2023). There is also a considerable gap between Southern-Northern and Coastal regions in the availability of basic infrastructure (Gual and Das, 2024). Besides the development gap among NSS regions, there is considerable regional disparity among the districts within NSS regions and blocks within each district. The RCCSDBO (1994) listed 82 blocks of Odisha as very backward, 87 as backward, 70 as developing, and 75 as developed blocks. This implies that 54 per cent of blocks in the state were either 'backward' or 'very backward' (Government of Odisha, 1994). The Report of the Regional Imbalance Enquiry Commission (RIEC), 2008, revealed that 50 per cent of districts and 53 per cent of blocks in the state were either 'backward' or 'very backward' (Government of Odisha, 2008). Table 2 presents the distribution of blocks (under different development categories) across three NSS regions as reported by the above two committees. Figures 3 and 4 present the blocks' distribution per the development category in five geographical regions in 1994 and 2008. Figures 5 and 6 present the distribution of blocks under different development categories in the tribal and non-tribal regions in 1994 and 2008.

**Table 2: Distribution of Blocks as per the Levels of Development in 1994 and 2008**

| | Regions | Developed | Developing | Backward | Very Backward | Total |
|---|---|---|---|---|---|---|
| Number of Blocks | | | | | | |
| Development Status of Blocks in 1994 as per RCCSDBO | Northern | 9 (10) | 34 (36) | 28 (29) | 24 (25) | 95 (100) |
| | Central | 61 (53) | 22 (19) | 22 (19) | 10 (9) | 115 (100) |
| | Southern | 5 (5) | 14 (13) | 37 (36) | 48 (46) | 104 (100) |
| | Total | 75 (24) | 70 (22) | 87 (28) | 82 (26) | 314 (100) |
| Development Status of Blocks in 2008 as per RIEC | northern | 20 (21) | 24 (25) | 33 (35) | 18 (19) | 95 (100) |
| | Central | 52 (45) | 30 (26) | 16 (14) | 17 (15) | 115 (100) |
| | Southern | 12 (12) | 20 (19) | 27 (26) | 45 (43) | 104 (100) |
| | Total | 84 (27) | 74 (23.5) | 76 (24) | 80 (25.5) | 314 (100) |

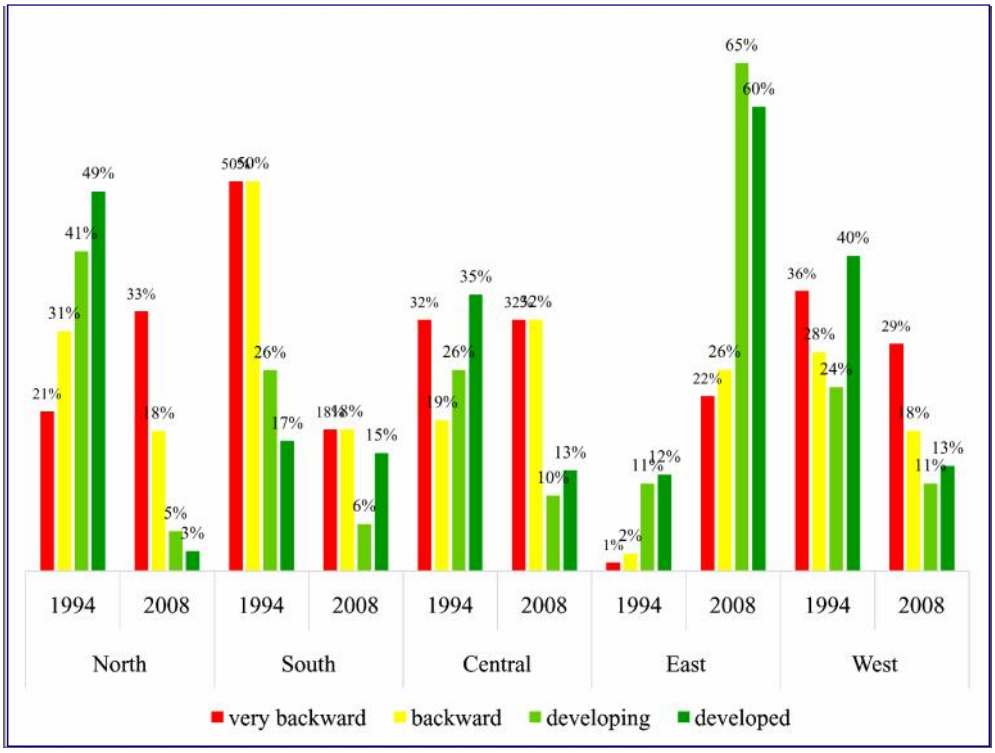
Source: Author's calculation from the RCCSDBO, 1994 and RIEC, 2008
Note: Figures within parentheses are per centages

Central (coastal) Odisha has the highest per centage of developed blocks, and South Odisha has the highest per centage of most backward blocks in 1994 and 2008. Eighty-two per cent of the blocks in southern Odisha were either backward or very backward in 1994. The per centage has reduced marginally to 69 per cent in 2008. Fifty-four per cent of blocks in north Odisha were either backward or very backward in 1994 and 2008. Six per cent of blocks have progressed from the very backward to the backward category. Thus, central Odisha was the most developed in both years, followed by the northern and southern regions.

### 2.2 Disparity Across Geographical Regions

Figure 3 presents the per centage of blocks (under different development categories) in different geographical regions in 1994 and 2008. As per the five geographical divisions, in 1994, the eastern region had the highest per centage of developed blocks, followed by east, west, central, south, and north Odisha. Southern Odisha had the highest per centage of very backward blocks in both 1994 and 2008. North Odisha had the highest per centage of backward and very backward blocks, followed by south, west, central, and east in 2008.

**Figure 3: Distribution of Blocks by Geographical Region and Development Stage, 1994 and 2008**

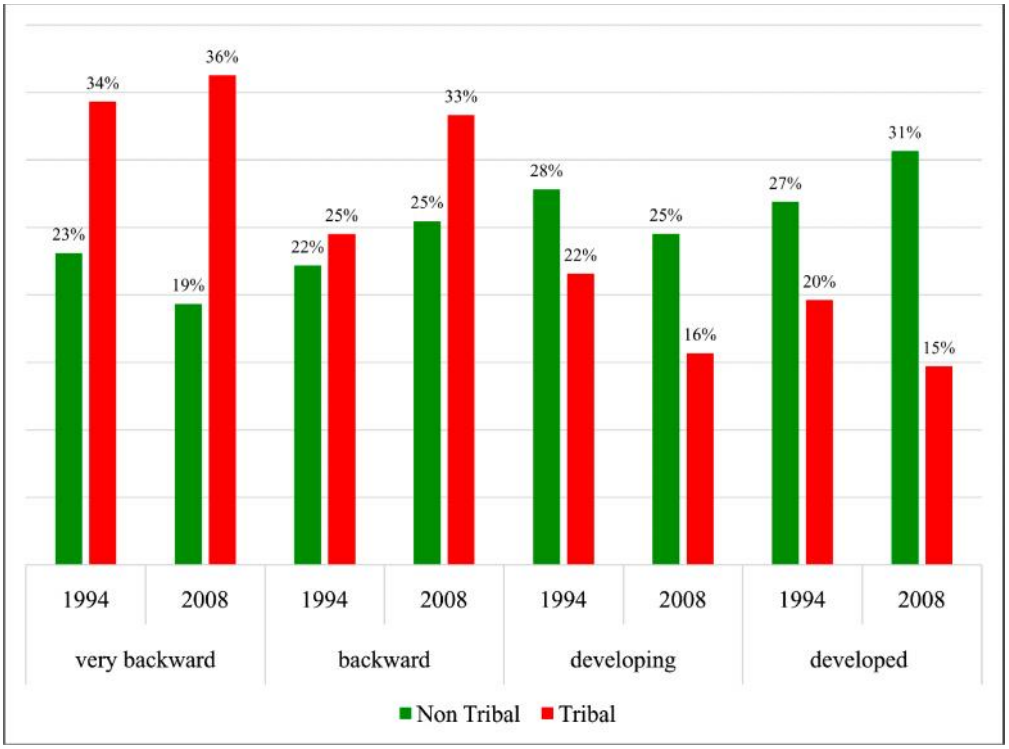



## 2.3 Disparity across Tribal and Non-tribal Regions

We have further examined whether the tribal blocks are more backward than the non-tribal blocks. Figure 4 presents the per centage of tribal and non-tribal blocks coming under different development categories in 1994 and 2008, respectively. Among the tribal blocks, only 20 per cent were developed, 22 per cent were developing, 25 per cent were backward, and 34 per cent were very backward in 1994. Against this, the numbers were 15, 16, 33, and 36 per cent, respectively, in 2008. Among the non-tribal blocks, 27 per cent were developed, 28 per cent developing, 22 per cent backward, and 23 per cent very backward in 1994. This has changed to 31 per cent developed, 25 per cent developing, 25 per cent backward, and 19 per cent very backward in 2008. Fifty-nine per cent of the tribal blocks were either backward or very backward in 1994. Among the non-tribal blocks, this per centage is 45 per cent. Non-tribal blocks had a 55 per cent chance of being either developing or developed against the 42 per cent chance in the case of tribal blocks in 1994. The situation has deteriorated

in 2008. Tribal blocks had a 69 per cent chance of being backward or very backward against the 44 per cent chance for non-tribals in 2008.

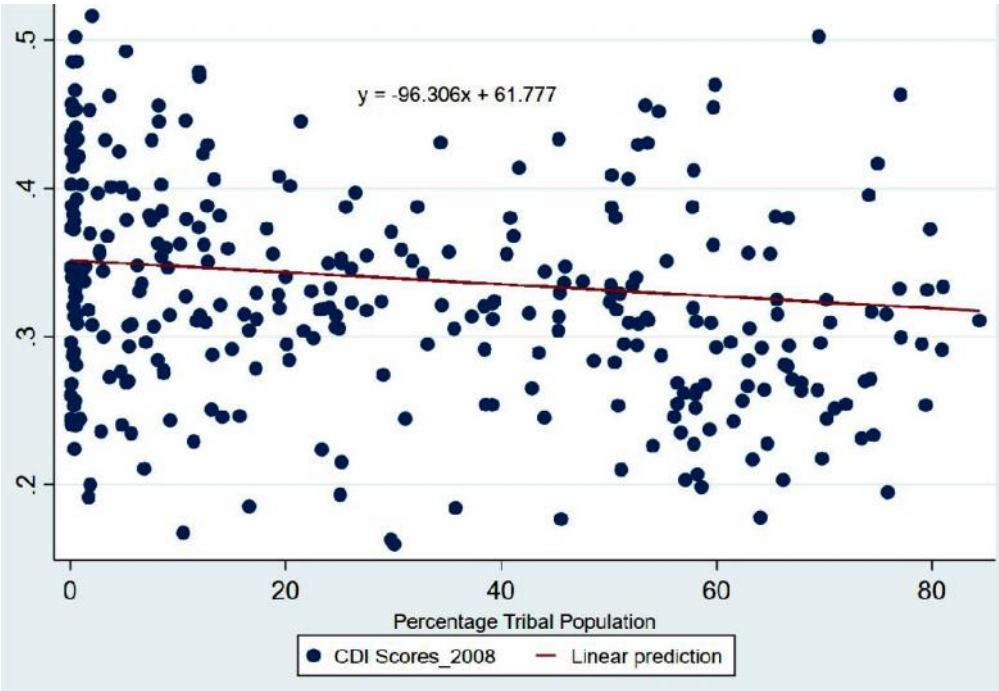
**Figure 4: Distribution of Tribal and Non-tribal Blocks by Development Category, 1994 and 2008**




In order to establish the association between the underdevelopment of a region and the share of the tribal population, we have presented a scatter plot diagram (Figure 5). The composite development index (CDI) scores of 314 blocks are taken on the Y-axis, and the per centage of tribal population in the block is taken on the X-axis. The CDI scores are taken from the RIEC 2008, which is calculated using 14 socio-economic development indicators. The following indicators are used in the CDI: (1) Density of population per square km, (2) Per centage of agricultural workers to the total main worker, (3) Net Area Sown per agricultural worker, (4) Per centage of net area irrigated to net area sown, (5) Per centage of cropping intensity, (6) Per centage of literacy, (7) Number of primary schools per lakh of population, (8) Per centage of villages connected with all-weather roads, (9) Per centage of villages electrified, (10) Number of medical institutions per lakh of population (11) fertilizer

consumption per hectare, (12) Number of working tube wells per village (13) Per centage of BPL families, (14) Per centage of SC and ST in total population. We observe a negative relation between the levels of development and the share of the tribal population.

**Figure 5: Association between Per centage of Tribal Population and Development Levels of Blocks**




Source: Authors' calculation

## 3. Discussion

Our analysis clearly shows that regional disparity spreads across the state. Each region has some backward and very backward blocks and some developed and developing blocks. Figure 8 presents the share of blocks in each district in different stages of development. Barring a few districts, most of the districts have either very backward or backward blocks. Notably, most of these backward and very backward blocks are predominantly inhabited by a higher proportion of the tribal population. Therefore, prioritizing the backward blocks instead of the entire region or districts will more effectively remove regional disparity

from the state. For this purpose, we suggest the constitution of an Aspirational Block Development Council instead of several regional development councils. The state government can draw lessons from the Aspirational Block initiative of the NITI Aayog. Under this scheme, the least developed 112 districts and 500 blocks of India are monitored regularly to fast-track the implementation of all development schemes. Odisha's 10 districts, namely Nuapada, Nabarangpur, Malkangiri, Koraput, Kandahmal, Kalahandi, Gajapti, Dhenkanal, Balangir, and 29 blocks, are listed under this programme. Out of 10 aspirational districts, 8 are tribal majority districts. Similarly, 90 per cent of the aspirational blocks belong to the tribal majority districts. The state government may cover all very backward and backward blocks under the special initiative.

Development councils at the regional level may overlook the disparity at the district and block levels. There are apprehensions about the concentration of funds in specific locations within the region and the misutilization of resources. Independent evaluation by researchers reveals that the WODC has failed to meet its objectives due to institutional inefficiency and corruption, working as a signboard during its 22 years of existence (Panda, 2021). The conditions of the backward blocks under WODC (89 blocks coming under 10 districts) have remained the same even after two and half decades of the council's establishment (Ratha, 2020). According to the 2018 audit report of the Comptroller and Auditor General (CAG) of India, the council has misutilized the funds and ignored priority sectors and backward and very backward areas. Furthermore, low quality of monitoring and implementation of the programmes, vested interests of local elites and corruption, and inadequate staff in the headquarters office are reported to be the significant institutional barriers that limit the operation of such organizations (Alam, 1999; De Haan, 2008; Gual & Das, 2024; Mohapatra, 2020; Nanda & Jojo, 2023).

### 3.1 Democratic Institutions and Regional Disparity

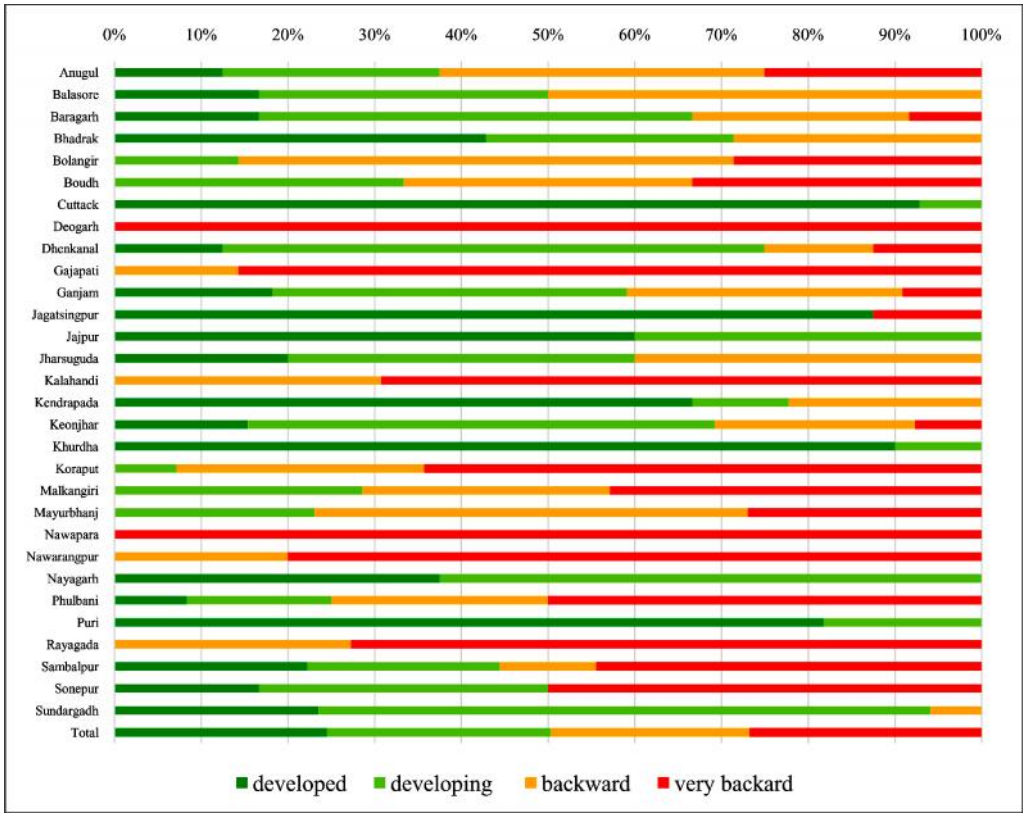
Odisha has a democratic form of government that is part of India's democratic structure. For a parliamentary democracy like India, which is built on the principles of equality, liberty, fraternity, and justice, inequalities of any form are politically undesirable. The Indian Constitution has provided in the Directive

Principles of State Policy (DPSP) that the state will strive to reduce all forms of inequality. Moreover, Odisha has a well-developed set of democratic institutions. Globally, Democratic institutions, by principle, improve redistribution and reduce inequality (Acemoglu et al., 2015; Meltzer & Richard, 1981). Democratic governments and institutions increase redistribution by adopting pro-poor and inclusive policies such as taxes and public spending (Keefer & Khemani, 2003; Lake & Baum, 2001; Scheve & Stasavage, 2012). Sen (1982, 2000) argues that democracy is a governance system that gives people voice and political freedom and empowers them to pursue what they need and value. The presence of democratic institutions such as free media, active civil society, strong opposition, and an effective electoral force government to ensure redistribution. In this context, the sustained regional disparity within the democratic structure of Odisha is imperative and needs explanations for why democratic institutions fail to ensure redistribution and reduce disparity in the state.

Gual and Das (2024) have argued that the backward regions of Odisha have a low density of formal institutions and suffer from a weak institutional environment. Without adequate formal institutions, people in the backward regions often depend on the wide network of informal institutions for their ordinary business of life. The dominance of informal institutions, often extractive, interacts with formal or democratic institutions and causes their dysfunctions. Thus, within the democratic structure, the rule of extractive informal institutions leads to rampant corruption and the involvement of vested interests in implementing several development schemes. This partly explains why the pro-poor policies in Odisha have had limited success in removing regional disparity. Institutionalists often argue that without a solid and efficient institutional environment, even the most thoughtfully designed development policies meet early and frequent failures (Woolcock, 1998). The creation of multiple development councils may create coordination problems among various agencies, and the chances of informal networks and corruption increase as too many players are involved in the process. As seen in the case of WODC, the administrative and bureaucratic barriers have contributed to its dysfunctions. Therefore, instead of creating new institutions and allocating separate funds to separate agencies, priority should be given to strengthening the institutional framework and implementing the existing schemes. State Finance Commission

may recommend progressive transfer of funds to the backward blocks of the state. Backward Block Development Council can regularly review the implementation of all schemes and recommend necessary interventions for course correction.

**Figure 6: Distribution of Blocks in Odisha by District and Development Category**




The study intended to show the current trend of regional disparity. However, the study is constrained by the unavailability of recent data. Nevertheless, the recent multidimensional poverty estimates of NITI Aayog show a very high concentration of poverty in the southern region, followed by the north, central, east, and west. In Table 3, we have taken the poverty headcount data of NITI Aayog's *Multidimensional Poverty Index Report, 2023*, and calculated the average poverty headcount ratio of geographical and tribal-nontribal regions. As we can see from the Table, the trend of regional disparity in Odisha exhibits a consistent pattern without significant deviations over time.

**Table 3: Region-wise Poverty Headcount**

(%)

| Regions | Poverty Headcount |
|---|---|
| North | 28.25 |
| South | 33.50 |
| Central | 17.00 |
| East | 08.50 |
| West | 12.50 |
| *Tribal-Non Tribal Districts* | |
| Tribal | 30.50 |
| Non-tribal | 11.60 |

Source: calculation done by authors using MPI Report (2023) data.

## 4. Conclusion and Policy Suggestions

Odisha has witnessed faster economic growth since the early 2000s. This has resulted in the state's per capita income rise and placed Odisha as a middle-income state (Das, 2022). As per the Multidimensional Poverty Index 2023 data, Odisha has also witnessed a fast decline in poverty. The poverty headcount ratio has declined from 29.34 per cent during 2015-16 to 15.68 per cent during 2019-21. Nevertheless, the state experiences a high level of regional disparity. The most developed Puri district reported only 3.29 per centage poverty compared to 45.01 per centage in Malkangiri district, followed by Rayagada (34.03%), Koraput (33.54%), and Nabarangpur (33.45%). The analysis of the findings of RCCSDBO 1994, RIEC 2008, and the latest multidimensional poverty headcount ratio implies that southern Odisha remains the most backward region of the state. Every region of Odisha has some backward or very backward blocks. Similarly, every region has some developed and developing blocks. Nevertheless, the highest per centage of blocks in south Odisha are backward, followed by north and west. We also find a strong association between the concentration of tribal population and underdevelopment.

The experiences of WODC in addressing the underdevelopment have been far from satisfactory. Therefore, we recommend the constitution of the Aspirational

Block Development Council to monitor the implementation of all development programs in the very backward and backward blocks. In this regard, the state can learn from the Aspirational Districts and Blocks initiatives of the NITI Aayog. The ABDC can create a dashboard for all development indicators and identify the bottleneck in implementing government schemes in those blocks. A quarterly progress review of all government schemes in the most backward blocks can help to address the unique challenges faced in the remote blocks. State Finance Commission can recommend progressive transfer of funds for the backward blocks. Tribal villages within every backward block should get more attention.

Another policy implication for the state is to prioritize strengthening the institutional framework in underdeveloped regions. As seen in the case of WODC, the influence of informal relations, vested interest, and administrative and bureaucratic barriers have contributed to the dysfunctions of such organizations. Improving the density and quality of formal institutions in underdeveloped regions will strengthen the institutional capacity to deal with informal barriers and inefficient utilization of resources. The involvement of local tribal people in the development councils will foster this process. The involvement of tribal communities in the monitoring and implementation of development programs will ensure the fulfillment of their specific cultural, social, and economic needs. Outside officers often lack the enthusiasm and altruistic capital to develop regions where they do not live.

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Book Review

# *Smart Cities and the Poor: Towards an Agenda for Inclusive Urbanization in India*

*Odisha Economic Journal*
Volume 56 • Issue 1 • 2024
pp. 189-193
Journal of the
Odisha Economic Association
OEA

by Alok Kumar Mishra, Routledge, New York, 2024; pp 232.

**Pratik Kumar Singh**

This book discusses the challenges and strategies for inclusive and sustainable urban development in India. It addresses various aspects such as the economic perspective on inclusive urbanization, challenges of affordable housing, financing urban poverty alleviation, urban participatory governance, policy issues, and an agenda for slum-free and poverty-free cities. It also emphasizes the importance of cities in the global agenda for sustainable development, particularly focusing on the United Nations' Sustainable Development Goal (SDG) 11, which aims to make cities inclusive, safe, resilient, and sustainable.

The book is driven by the motivation to contribute to the effective implementation of UN-SDGs, the New Urban Agenda of Habitat III, and India's national urban missions aimed at ushering in inclusive and sustainable urban development (p. 6). It keeps in view the historic Constitution 74$^{th}$ Amendment Act 1992, which includes slum development, poverty alleviation, and delivery of basic services to the poor as parts of the legitimate functions of municipalities under the Twelfth Schedule of the Constitution (p. 8). The book prioritizes social inclusion and poverty reduction, focusing on micro-level data relevant to these issues. To maintain a clear focus and avoid dilution on urban poverty, the book doesn't delve deeply into the broader environmental issues. However, the author acknowledges the importance of environmental

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sustainability for inclusive cities and briefly addresses pollution, resource management, and aligning with SDGs for green spaces and reduced environmental impact (Mitlin and Satterthwaite, 2012).

The book extensively discusses rural-urban migration patterns and the factors that drive this migration phenomenon. It highlights how rural challenges, such as low income, lack of resources, and agrarian distress, push individuals to migrate to cities in search of better opportunities. The book emphasizes the role of urban areas as hubs for economic activities and job opportunities, attracting a significant portion of the workforce. Factors like the concentration of employment in urban regions, the promise of higher wages, and the need for livelihood improvement contribute to the rural-urban migration trend in India. Additionally,the book addresses the challenges faced by migrants in cities, including inadequate housing, lack of basic amenities, and social vulnerabilities, particularly affecting slum-dwellers. The book suggests the Brazilian model of 'right to the city,' emphasizing the right of migrants to space in the city and aiming to improve their situation in urban areas (p. 75).The author comes up with a new argument and challenges the traditional perspective of urban economics, which often presents a negative view of migration and urbanization. Instead, he argues that cities are the engines of economic growth due to their agglomeration, networking, and knowledge externalities. In terms of critical engagement with the existing literature, the book builds on the work of urban economists such as Harris and Todaro, as well as the New Economic Geography (NEG) perspective. However, it departs from these perspectives by emphasizing the positive aspects of migration and urbanization and the role of public policies in creating inclusive cities.

The author draws lessons from both theory and practice, aiming to assist researchers, officials of urban local bodies, planning authorities, urban development entities, and state governments in India to analyze contemporary urban issues. The book is also intended for policymakers at the state and central levels who can refer to it to design policies and reform agendas.

The content of the book is organized into seven chapters, covering a wide range of topics related to inclusive urbanization. It includes empirical studies, data analysis, and policy recommendations based on the author's research and

expertise in the field of urban economics. Each chapter of the book addresses specific aspects of inclusive urban development. Chapter 1 discusses the significance of cities in the global agenda for sustainable development, emphasizing the need for inclusive, safe, resilient, and sustainable cities. Chapter 2 deals with 'the economic perspective of inclusive urbanization' and challenges the negative view of rural-urban migration and urbanization. It emphasizes the role of public policies in augmenting the benefits of agglomeration and networking externalities in cities and the need to accommodate migrants. Chapter 3 explores the issues related to affordable housing in urban areas, discussing the factors leading to the emergence of housing shortage for the low-income groups and the development of an agenda for slum-free, poverty-free cities. Chapter 4 discussesvarious financing mechanisms and strategies to support inclusive urban development and poverty alleviation initiatives. Chapter 5 highlights urban participatory governance' and points to the use of tools such as Citizens' Report Cards and Urban Resource Centres to promote participatory decision-making. Chapter 6 deals with various policy issues related to inclusive urbanization, and presents an agenda for creating slum-free and poverty-free cities. It includes details of government programs and impact assessments. Chapter 7 offers concluding remarks, and outlines the way forward for achieving inclusive and sustainable urbanization in India. It emphasizes the need for holistic approaches and the role of cities in the global agenda for sustainable development.

The empirical core of the book, which is based on fieldwork, explores the contexts of poverty in slums of four cities of Telangana state: Metropolitan (Hyderabad), large (Warangal), medium (Siddipet), and small (Bhongir), reveals that several non-economic factors have important implications for the level of income of the urban poor. These factors include location in a "central area, living in a notified slum, access to civic services, having a patta, land tenure security, affordable housing, social security, etc." (p. 205). The author mentions that government programs helping slums should work at two levels: "think globally, act locally." This means working together at the state, city, and even individual slum levels to figure out what everyone needs. Big problems like land ownership should be tackled together by every level of government, while things like education, skills, and training should be tackled based on surveys.

To tackle urban poverty effectively, the book recommends crafting city-specific plans led by local authorities. These plans should align with existing city development strategies, and the national government should push for inclusive urbanization. They must address the needs of all settlements, including notified, non-notified, and other under-serviced areas. This approach ensures resource allocation aligns with local priorities, replacing the current ad-hoc funding system. To effectively combat urban poverty, we need a systematic, time-bound, and results-driven approach that prioritizes the core challenges faced by low-income urban residents. This includes securing their housing rights, ensuring access to basic services, offering affordable housing, and equipping them with skills and opportunities for self-employment, wage employment, and entrepreneurship. Empowering communities and fostering their participation in governance are also crucial for their progress. The book says it's important to bring together different government programs (from the central, state, and city levels) to help poor people in cities get the services they need, like housing, healthcare, and education. These programs should work together seamlessly. The book highlights that the UN's Sustainable Development Goals (SDGs) put a big responsibility on governments at all levels to think about the world as a whole and take action in their own cities as well. They need to understand how cities work and make sure everyone benefits from growth, especially the poor and marginalized, who make up most of the population. To achieve this, India needs to invest in its cities to make them not only "economically efficient but also environmentally sustainable, socially equitable, financially viable, and able to handle future pandemics like COVID-19" (p. 5).

However, one minor criticism is that the New Urban Agenda, which is a key focus of the book, may be overly comprehensive and contain too many objectives that may conflict with each other, as noted in (Caprotti et al., 2017). This could potentially hinder its effective implementation. The author could critically examine the potential challenges and limitations of the New Urban Agenda to provide a more balanced perspective on its feasibility and practicality. However, the book provides a well-researched and practical guide for achieving inclusive and sustainable urbanization in India. It addresses the complex challenges of urbanization and poverty in India, offering valuable insights for policymakers, researchers, and practitioners in urban development and poverty alleviation. It draws lessons from both theory and practice, aiming to assist

researchers, officials of urban local bodies, planning authorities, urban development entities, and state governments in India to analyze contemporary urban issues. The author's expertise in the field is evident throughout the content, and the inclusion of empirical studies and data analysis enhances the credibility of the book, making it a valuable resource for anyone interested in the field of urban development and poverty alleviation. Overall. This volume is a significant contribution to the literature on urban development and poverty alleviation, providing a well-researched and practical guide for achieving inclusive and sustainable urbanization in India.

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