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Jindal School of Government and Public Policy
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Contents

Editors' Foreword

Dear Readers,

After prolonged and mostly inexplicable delays, the first issue of fourth volume of Jindal Journal of Public Policy is being published. This volume comes at this current juncture when the entire world is facing the consequences of the Covid-19 pandemic. The heart wrenching scenes of migrant labourers limping back to their native lands, either walking hundreds of miles or somehow finding a place in packed trucks and trains have exposed the underbelly of society, and have shaken our collective conscience. Many have argued that things in the post-Covid world may not go back to how they were in the old days. Some have asserted that radical changes are due and the era of neo-liberal dominance over public policies around the world should give way to a more holistic and inclusive paradigm. As the world debates whether it is possible that we can come out of the crisis and if we do so, how the post-covid world would look like, this volume is an attempt to look back at some key domains of public policy in India in a pre-covid world.

Kaushik Basu's piece titled **"Reflections on some developments in Higher Education in India**" goes beyond the realm of economic policies and attempts to understand how development is shaped by a structure of social norms, the right kinds of laws, and how the right kinds of governance structures are more crucial in the economic development of a country than getting economic policies right. One finds the piece very relevant today as many believe a much more socially sensitive understanding of the lives of millions of migrant workers could have avoided the devastating consequences that the lockdown had on their lives.

Rathin Roy's piece "**India's Macro Fiscal Bind: Is Co-operative Federalism a Solution?"** deals with the contours of 'cooperative federalism' and its implications on national and state governments. The author emphasizes the need to provide greater fiscal power to states so that education and health receive greater investment. As the crumbling nature of our health system has been exposed during this pandemic, and the need for greater public investment in health and education being felt more than ever, Rathin Roy's piece provides us a clear argument for policy relevance.

Susrita Roy's piece **"Engagement of the private sector in the Pradhan Mantri Jan Arogya Yojana: Examining the promise of a watershed moment for Universal Health Coverage**" brings out key evidences and exposes the fault-lines of the current direction of health policy in India. Her observations have gained greater significance at the current juncture

where government-funded insurance schemes like the Pradhan Mantri Jan Arogya Yojana (PMJAY) have not been adequately successful in providing care against Covid-19.

Ajay Gautam has analysed two key policy initiatives of the current government and discussed their relevance to the lives of people. His analysis of **Pradhan Mantri Matru Vandana Yojana** (PMMVY)— a scheme to provide cash assistance to pregnant women and lactating mothers— is of particular relevance. This study critically evaluates the ground realities of the scheme from its implementation to its execution, thereby highlighting the challenges being faced both by the authorities and the beneficiaries. Ajay's piece on **Pradhan Mantri Mudra Yojana (PMMY)**, which is aimed to provide financial support to micro/small entrepreneurs (MSEs) by meeting their credit aspirations is of particular importance. The Indian economy faces a tremendous crisis of demand and supply bottlenecks post lockdown, and revival of MSEs is critical in the process of recovery.

Rupsha Mitra and Vivek Patvetnaya's piece **"Ambient air pollution: overview of evidence for integrated local and global action"** highlights the need to adopt policy indicators that can be mainstreamed across sectors to align a full range of interventions for effective mitigation and to achieve multiple co-benefits related to health and climate security and sustainable development goals.

This publication would not have been possible without numerous contributions from our colleagues. We are particularly indebted to Prof Manini Ojha and Prof Mehreen Mookherjee for taking out the time and patiently reviewing submissions. Active involvement, mentorship and encouragement from Dean Professor R Sudarshan helped us during crucial junctures. Ms Shweta Venkatesh took all the pain to read all the pieces, make language and grammatical changes and also at times suggesting corrections for the content with impeccable efficiency. Our heartfelt thanks to Shweta for being patient with us and responding to our repeated requests with grace. Ms Mani Mala, Manager & Academic Co-ordinator of Jindal School of Government and Public Policy has been forthcoming with support whenever we were in need. Her contributions in organizing transcriptions need special mention. Mr Manoj's prompt support in designing the issue and Mr Naveen and Mr Durgesh's support in uploading the content on the website came at a key juncture. We deeply appreciate their efforts.

Enjoy reading. We hope to come back more regularly and bring out interesting policy research.

Thanks and regards

Indranil and Shraman Banerjee, Co-Editors, Jindal Journal of Public Policy.

REFLECTIONS ON SOME DEVELOPMENTS IN HIGHER EDUCATION IN INDIA[1]

Professor Kaushik Basu[2]

Abstract:
A structure of social norms, the right kinds of laws, and the right kinds of governance structures are more crucial in economic development of a country than getting economic policies right. Cultural norms are not hard-wired, as many would like to believe. They change, along with changing incentives and changing atmospheres. Contrary to the understanding that persuasion of self-interest in best for the society and economy, trust plays a key role in societal development. Societies which can trust one another can cut many more deals, transactions, businesses because you can rely on the other side, and those societies begin to flourish. At the same time good laws play key role in fostering economic development. The relationship between abolition of child labour and increasing adult wages illustrates the point.

This article is based on the observations I had made at the Commission for Higher Education, Government of India. There has always been a consensus that the State sector is needed in a big way for the university system and higher education system in India to take off. Nonetheless, what most of us miss is that we also need the private sector in a big way. I am personally in favor of both — the for-profit private sector and non-profit private sector — playing a role. When it comes to the for-profit private sector, there are some prominent examples in the United States: the University of Phoenix is one such. In a way it is like a company being run where someone is just making profits openly out of that. People will come and tell me that 'Look, the for-profit universities are never terribly good because the student quality is not good.' I have a different view: given that a majority of students in a country will not be good students, having a sector that absorbs this majority is a very, very useful social function. The

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[1] Based on the First Commencement lecture delivered by the author on August 1, 2012 at Jindal School of Government and Public Policy, JGU, Sonepat, Haryana

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best universities that we have seen around the world are a combination of State universities, and not-for-profit private universities. That is why I keep track of them because of my interest in higher education and what is happening on that front. Moreover, I feel that in India, the scope for not-for-profit but private institutes and universities is immense.

These are India's first years of finding its feet in this and what you see is not always heartening. However, there was one particular university that I was watching for a while and found special; this university is none other than the OP Jindal University. I knew very little about it. But when I got to see a couple of your journals from other disciplines, it was immediately evident that this is a serious private university in serious academic business. To me, this is extremely heartening.

One more indicator: I feel we are too conventional in terms of architecture, whereas architectural creativity is an essential part of creativity. When I first saw the pictures of your university, I thought it had a slightly bird-cagey kind of look from a distance. It immediately struck me. I felt that it had a French element in it because of the George Pompidou Centre in Paris it reminded me of, and I felt delighted that a university was being creative in terms of the space and architecture. All these things added up, and then I met your Vice Chancellor just a couple of months ago for the first time and I was completely convinced that your university is a very special venture and a lot of what can happen in India in the future really started up with this. Raj's energy, academic interest, and intellectual achievements are just phenomenal. I consider myself to be energetic and hard-working, but every time I interact with him, I feel like I should take some energy pills to step up my level of activity.

When it comes to the faculty, it is comprised of people I have known from many years ago — Shiv Viswanathan; Sudarshan from years ago; Asim Prakash with whom I have worked; Prakash Chandra, whom I have known for a long time; and Rajiv Malhotra, with whom I have become very close over the last two-and-half years in government — it was as if the school was being formed by raiding my friends rather than by raiding a university, as so many of my friends and acquaintances from many years ago are here together. So, once again, congratulations for this very important venture.

Regarding public policy, I should tell you that I was there on the founding occasion of the Lee Kwan Yew School in Singapore. I was at the commencement ceremony where I was invited as a Professor at Cornell. I feel that in emerging economies, especially in an emerging economy like India, it is a very big lacuna that we don't have a good public policy school

because the interface between regular academic disciplines where you do research and public policy is very weak in India. In the United States in particular (where I have lectured), I have offered full courses both at the Kennedy School and at the Woodrow Wilson School, and it was very evident that these places play an absolutely critical role for public policy in the United States. I am once again glad, not just for your university, but particularly for the School of Government and Public Policy that has been set up and is starting out over here.

The decline of India's institutes is regrettable. The Vice Chancellor mentioned the decline of Presidency College Chennai. The other Presidency College, in Kolkata, also experienced a very visible drop from its remarkable status. It is not just the Chennai Presidency or Calcutta Presidency, both of which are not trying to revive; India, which had a head-start in terms of higher education and the university system, has not done well in this sector in general.

I would like to reflect on the larger domain of economics, public policy, social development, and their interface. I want to tell you one important lesson that I took away from my nearly 3 years in government, and that is the importance of higher education. It is easy not to realize the importance of this. John Maynard Keynes, the guru of my field, economics, was a writer apart from being an economist. He wrote beautifully, and in the last chapter of his famous book The General Theory there are these couple of lines where Keynes says that in the end it is knowledge and ideas which drive a nation.

We speak today of vested interests. Keynes said that those are important, but in the long run, the power of ideas surpasses the power of vested interests. As a professor, I used to think of these comments by Keynes as lovely lines, but only to be expected from a professor because the professor has a vested interest in exactly that point of view. Having come into the government and having tried my hand at implementing new policies, I am now completely convinced that a much bigger stumbling block to getting good policies in place is an idea rather than vested interest.

Vested interests are there, but you can very often bulldoze over those vested interests. On the contrary, when ideas get set and become old fashioned and fundamentalist, it is very difficult to bring about changes. That is why higher education and creativity are important. If India is to have a great future, then undoubtedly fiscal policy is important, monetary policy is important, but no less important are higher education and irreverential creativity. You have to question everything that you are learning, you have

to cast doubts on every conventional view that is given to you. Those are the things that need to be nurtured.

In fact, if one looks back on history, on great civilizations that came up, economic success goes hand-in-hand with the space for ideas, and the space for universities or academies. I don't know the causal direction, but it does seem to me that unless this space for ideas and creativity is nurtured (creativity is really the crux of it), a country cannot do well even economically. Creativity is good in itself, and is an excellent pursuit. On top of this, even economic development is very closely linked with it.

If we study Greece, it is true that Alexander plundered the world and made this region extremely wealthy; but that is also the region of Socrates, the region of Plato, the region of Aristotle and a couple of hundred years earlier, the region of Pythagoras. All those people were at the forefront of creativity at that time, developing and nurturing ideas. A bit later in Alexandria, Cleopatra assembled big amounts of money, but Alexandria is also the city of Archimedes, the city of Euclid, the city of people who were generating ideas. Come to Italy, in the heydays of the 15th century and early 16th century, Florence was the city with the Medicis minting money and running flourishing businesses; but today, most people would not even know of the Medicis. Indeed, the dominant figure of that time would be Machiavelli, generating ideas on public policy and governance; he was the guru of that. Then there were Da Vinci and Michelangelo, both creating art and flourishing. If you think of Britain in its heyday, it was a global power, a globally powerful economy, but was also the seat of high learning. Oxford, Cambridge, a whole bunch of universities flourished and generated ideas. And now it is the United States. We typically think of the United States as a dominant global economic power, a military power. Those things are true, but the bigger achievement of the United States is the space it has created for higher education and research together with the centrality given to that. If you look at the dominance of the United States today in the space of research, it is bigger than its dominance in the space of economy or even defense. There are other countries which are coming close to the US in those areas, but to date in the space of just knowledge creation, the United States dominates.

India had its initial lead, and it is indeed a lead by emerging country standards. If you think of India in the 1950s, 60s, 70s, it was a remarkable place by emerging country standards: it was nurturing higher education, although it had a somewhat peculiar system. We did very poorly in terms of basic literacy – vast numbers of Indians did not get any education – which is shameful, but those who got education got very good education

through the 1960s to the 1980s. However, the country is beginning to slack off. We are more or less continuing with the same system with very few new ideas coming in, and you can see that in the space of higher education. China has come up in a very big way, Malaysia has come up in a big way, Latin American countries are investing in a big way. It is time for India to wake up. Once again, I am going back to the theme that I am glad that we've seen this effort going on here.

The non-economic determinants of a country's economic performance, such as human capital and higher education, are equally important if not more. An economy doing well depends very critically on the government. The government has to create good fiscal policies. I don't know whether we have formulated good fiscal policies or bad fiscal policies. I have been closely associated with the fiscal policies that came out of India over the last two-and-half years. We also need good monetary policies but in the end we need the right political institutions. We need laws which are well crafted – I will come to that soon – not just for legal justice and fairness but for economic development. Well-crafted laws and certain kinds of social norms need to be in place. When you put these non-economic variables together, you realize that in the end, it's more important to have a structure of social norms, the right kinds of laws, and the right kinds of governance structures than getting your economic policies right. Once you have those in place, the economic policies will work out, and an economy begins to move on its own. In India we haven't given enough importance to the surrounding fields, the surrounding space which makes for better economic progress. Not just in India actually, it is partly the fault of the economics profession that hasn't given enough importance to this.

Francis Fukuyama has written about trust and economic development. He says that a society in which there is a lot of trust among individuals tends to do better. Hardcore econometricians will not be pleased about Fukuyama's result because Fukuyama does not establish it with statistics. Instead he makes broad-brush cross-country comparisons and points to the fact that societies that have managed to develop a lot of trust among people have done well. Scandinavian countries rank very high in terms of interpersonal trust, as do East Asian countries. In India there is something interesting — we are very trustworthy within our networks: friends, communities, even a bit going by class— there is a lot of trust when it is a cluster in which everyone knows each other. You can depend on people, you can leave a bag of cash and say keep charge of it for the next one year and give it back to me then, you can do it among friends and within the network. However — there is no getting away from this — our anonymous trust is low. If you don't know the person, the trust level is low.

Fortunately, it is not politically incorrect to discuss this because of my own personal belief that there is absolutely nothing hard-wired in a society or in a nation. There are many of these cultural norms which change, along with changing incentives and changing atmospheres. I have with me these European documents describing Japan 100 years ago. If you black out the word Japan and any reference to Japan and then read it, you will think that this is a description of India. We all know the running jokes about Indians and unpunctuality. These documents describe Japanese unpunctuality as shockingly high. No one turns up on time, nothing seems to begin on time. But Japan would then change dramatically, and today, it is arguably a most punctual society. In fact, I believe Japan is overdoing it a little bit and tending towards hyper-punctuality. It needs to backtrack a little bit.

There are descriptions of Korea in the 1950s by British visitors and American visitors talking about how lazy the people are. They say that the Koreans don't work at all. Koreans today are named to be among the most hard-working people, which means that this norm has changed over a couple of decades. Since I mentioned punctuality, I'll also mention that I wrote an academic paper on punctuality norms with the Swedish game theorist Jorgen Weibull. We discovered that there was a lot written by sociologists and social psychologists, and basically what we were getting was a lot of cross-country information. We learnt that Latin American societies are very unpunctual, North American societies are very punctual. My co-author Jorgen Weibull comes from a very, very punctual society, Sweden, and I come from a, to put it a bit gently, less punctual society, India, but in this paper we argued that there is nothing inherent about this norm. These things begin to change once the incentives change in a society.

The first wakeup call I got regarding this was in the form of a personal incident which informed me how these things can change once the environment changes. In 1986, while visiting Princeton at the Woodrow Wilson School, I wanted to meet up with the grand old man of economics, the Nobel Laureate, Arthur Lewis. The economists in the audience may know about him, his work is fundamental in development economics. Arthur Lewis – and this is important – is a black economist; he is the only Black person who has won the Nobel Prize in economics. I set up an appointment because I had read his books as a student in Delhi University. I went very punctually, not wanting to keep Arthur Lewis waiting.

When I arrived, his wife was there because by then he was unwell. I walked into his room and Arthur Lewis started talking, and the first thing he said was, 'You know, I wonder what is it that makes you Indians so punctual.' I thought to myself, 'Arthur Lewis is getting old, maybe he is beginning to

mix up the Indians and the Japanese or something like that. His categories are getting confounded.' Then I realized that what had happened was that Arthur Lewis' Indians are the H1B professional Indians in the United States. A small group of Indians have migrated to the US through this category and they have changed their behavior. They have gone there and they have adapted. They have become punctual very quickly.

Meanwhile, Arthur Lewis was talking about his own group, saying that he wanted the blacks to be more punctual in the United States. What is it about India that makes Indians so punctual? Human behavior and behavior patterns change once the setting begins to change.

Another topic that we come into, which economists give very little importance to but is very critical is that of human qualities. In economics, thanks to our old texts, there is a lot of importance given to selfishness and drive and greed. These traits do indeed play a role in a society's development. If everyone wants to be other-worldly and relinquishes all desires for material progress, then that society may have certain achievements in the happiness index and other such indicators but it is unlikely to make much economic progress. But very often because of these early lessons of economics, we forget that there are other human qualities which are very important — not just in themselves, but for an economy to do well. Because economics textbooks have drummed it into us that selfishness and greed play a role, most people like to be conformist and repeat this refrain.

My colleagues at Cornell, Bob Frank, Tom Gilovich, and a couple of others ran experiments in which people from different disciplines - law, physics, mathematics, economics - were made to play games in a laboratory where you can exhibit different levels of selfishness. Through these games, it was found that economists are the most selfish people, thus leading people to question whether selfish people get drawn into economics or whether economics makes them more selfish. My own hunch is that economics makes them more selfish, because in economics you are always told that human beings are always selfish. No one wants to be abnormal so you decide that if everyone is always selfish, then I'd better be a normal person and I'd better be a bit more selfish. Kenneth Arrow points out that altruism and respect for others are qualities absolutely fundamental for a market economy. I think that in India, these are values that we need to be reminded of. Yes, you do need to want more but you also need altruism, you need integrity and honesty. It is probably true that want is not something that needs to be inculcated in anyone, it is a part of being a human being. But you also need altruism and honesty.

On this, there have been experiments. Let me give you a particular laboratory experiment which has been run called a trust game. A trust game almost mimics a business venture. In a business venture, the relationship between an investor and an entrepreneur takes this form — an investor gives money to an entrepreneur, the entrepreneur multiplies that money, and gives back the investor a part of it. When doing big investments, of course you do them contractually. You write down a contract, the courts are there and will enforce it. But life is full of these kinds of ventures where you don't even invoke the courts. Unless there is trust among human beings, these investments would not even take place because if I give my money to someone else with the understanding that if and when that person makes money that person will give it back to me, unless I can trust that person I would not put in this money.

To test the power of trust, economists and game theorists have developed these games called the trust games. A trust game works as follows and is done in a laboratory. Let's suppose I am running a trust game between two persons A and B. I give a hundred rupees to student A, and I tell her she can keep the money in which case that is the end of the game. She has got hundred rupees and that is the end. Or she can invest this money, meaning she can give this money to B. As soon as she gives that hundred rupees to him, I, as the game organizer, treble it up. I give him another 200. If she gives 100 to him now he has 300 because I have given him 200 as the organizer. So, the act of her investing money in him makes the cake become three times as large, there is now 300 in his pocket. He is now asked to make a move. He can give back some part or nothing of this money to her. It is his choice. Whatever he does, that is the end of the game.

It is a two-move game. Don't count my moves as moves. If there is trust in a society, then he will realize that if she did not trust him with the money he would get nothing because only after she gives him the money does the money get trebled. So, if she had not trusted him with the money, he would not have got anything. Suppose she gives him 100, it becomes 300. At one level, he owes something to her, otherwise he would have gotten nothing. In a good society, he would give back a big chunk of that, maybe 150 back to her. So, it was worthwhile for her to give the 100 to him because she gets back 150. These games have been played in laboratories around the world.

In a society in which there is a lot of trust, you can see that the cake is going to become large because in a fully trusting society, the implicit understanding between the two of them is as follows: She gets the 100, gives the entire 100 over to him, that becomes 300, he gives back 150 or

140 to her. They both got roughly 150 each. In a society with no trust, what would happen? Take a completely selfish society, a society which is the way textbook economics tells you human beings are, you try and keep every penny for yourself with nothing for the other person.

I am taking you through standard game-theory reasoning to see what will happen in this game. This is the way you always analyze these situations in game theory. You always start with the second player. In game theory we analyze outcomes by doing backward reasoning. Do a little bit of backward reasoning with me. Suppose she gives some money to him, say 50, which will then become 150, or she gives 100, it will become 300.What will he do in the second period when he has been asked if he wants to give that sum, or not give that sum, it is up to him? If he is completely selfish and rational, what is the right thing for him to do in the second period? He keeps the whole thing in his pocket because there is no reason for goodwill with her any more.

Again, the game is over, he walks away. If she knows that he is completely rational and selfish, what will she do when I give her 100? How much will she give him? She gives nothing, because she knows that, being rational and selfish, he will keep that trebled amount. So she will give him nothing and the economy will be poor with only 100 in circulation. It won't have 300. But if this were a trustful society, they would have 300. A group that has somehow managed to inculcate trust among its members tends to do better because its members can cut deals of this kind.

This is what Fukuyama was saying without going into game theory; that societies which can trust one another can cut many more deals, transactions, businesses because you can rely on the other side, and those societies begin to flourish. I remember once in Berlin, I was going to a music concert with a friend. We were not allowed to carry our bags into the music program. Hanging our bags outside, loaded with stuff, I pretty much gave up any hope of seeing that bag again. and I sat through that music program with a slightly disturbed mind. But when I went back, it was of course right there. The whole costly process of someone monitoring the bags, giving you tickets, putting them in lockers — you can do away with that because there is trust. If you don't have that trust in society, you run into difficulties because then you have to devise schemes.

At times you can have clever economic schemes. Before I joined the government, the one article of mine that was cited more than any other newspaper article was a bit of a tip to economists on how not to lose your footwear when you visit an Indian temple. When you visit an Indian

temple, you'll find that there is no organized way of keeping your footwear (at least in the olden days). So, outside the temple door you leave your sandals or shoes, you go into the temple, pray or admire the statuary, and when you come out of the temple, there is a 50-50 chance your footwear would be gone. I had developed a scheme of my own using very standard game theory where everyone is rational. In a rational society, the footwear should be gone because it makes sense for others to take good shoes and run away. I had developed a scheme which I shared with my sisters and friends and here is how it works: when you go to an Indian temple, put one footwear in front of one door, hobble over to another door, put another one there and then go into the temple. You will typically come out and find both your shoes there because one shoe is of no value and thieves usually come very quickly, pick up pairs and run away. I wrote an article for the Hindustan Times on how not to lose your footwear when visiting Indian temples and that became very popular. But again, it is a cumbersome method. If there is a natural trust and there are certain rules in the society which everyone follows, it makes it easier. I am giving you a trivial example, but a lot of businesses and everyday transactions depend on this kind of trust and the society automatically begins to do better if it is present.

These kinds of games which were done in laboratories had very interesting results. In Israel, a very famous test was done and papers were published in the Quarterly Journal of Economics. It turns out that among Ashkenazi Jews, the level of trust is greater. Among Sephardic Jews the level of trust is less. So, when you make them play these games repeatedly in laboratories, Ashkenazi Jews trust one another more and they become rich very quickly, the Sephardic Jews don't become rich very rapidly because they are not able to trust one another.

It is very easy to do a politically incorrect analysis of this and say that these things are genetically hardwired. Some people are trustworthy, some people are punctual, I don't think so. I believe in the fundamental similarity of human beings, I have spent time in societies, even tribal groups in Mexico, from where you come away with a feeling that fundamentally human beings are very similar. It is through history, through experience, that you develop these different traits. If you have been cheated too many times, you learn not to trust others. So you need a little bit of social thought on how these things can be improved and you can do better.

Let us travel from social norms to an area of law because again, the drafting of legislation is important and not just for fairness. If you leave this entirely to lawyers, lawyers will think of fairness, justice etc. But between the law and economics, just like between social norms and economics, there is a

lot of interaction. The interface between law and economics is critical for a country's development. In India our laws are not drafted with enough of an economics input. In the United States, the field of law and economics is a flourishing field. My colleagues are regularly called into law courts to testify. I can give a slew of legislations in India which are so badly drafted that you cannot have economic deals — progress and permissions get thwarted because the law is very poorly drafted. So it's important to draft a law keeping in mind that a law contributes to the development of an economy.

Let me end with one example of the interface between law and economics where I have written and contributed to the academic debate in this field. This area is the intersection of child labour laws and economics. In putting an end to child labour, we very often think in terms of legal moves. We ban child labour.

I have mixed feelings on these legal moves. Mixed feelings do not mean woolly feelings, One has to be very clear about the empirical evidence and setting when crafting a law. I got drawn into that subject in a very interesting way. I moved to the United States in August 1994 and at that time, there was a bill that was being debated by the US Congress called the Harkins Bill to ban any product with a child labour input from coming into United States. This meant that the United States, as an importer of goods, would ban the import of these goods into the United States if it felt that these shoes, say, coming from India were tainted by child labour. I wrote an article for the New York Times attacking this law in the United States, saying that this looks like a very progressive law but it is not so. The reason why I broke into the New York Times so easily was because of a very interesting discovery (The New York Times is not easy to get into). This American bill against child labour tainted products had been in the public space for a long time. The ill that was being debated in Congress was a very clean bill — it talked about the welfare of the children in many developing countries, it did not name countries. But we know that countries like India, countries in sub-Saharan Africa had a lot of child labour. The sentiment behind this legislation was the view that these countries were being mean and selfish for more profit in allowing for child labour, and that these children needed support from United States. I felt that the legislation was not well-crafted and indeed there was an earlier bill which had referred to the worker interest in the United States. So, the bill was not as innocuous as it appeared, it was implicitly also about protectionism and cheap products coming in while highlighting the child labour aspect of it.

Child labour happens for two reasons. The first is entrepreneurial greed — children present very cheap labour and are employed because the

employer wants to make a profit. The second is that there truly is no other alternative for those children. In developed countries very often the view is that entrepreneurs are greedy and parents are lazy and slothful and they send their children to work. I contest this. I say that yes, entrepreneurs may be greedy and very likely that is a factor. However, when there is mass child labour, it is not as if parents are invariably being lazy and slothful. They are doing it because they have no other alternatives. They don't want to starve, they have to send their children out to work.

Once you understand that it is extreme poverty that drives people to send their children out to work, you will have to be careful when you legislate against child labour. If you don't do anything about poverty and just legislate against child labour, you may be pushing the children from labour into starvation and you have to be careful about that. But my argument drew support and as well as a lot of criticism. I think even today the warning bell is absolutely important. I do believe that India is in a situation where child labour should be banned. India is in a position to be able to take on the challenge, but there is one intricate argument involving law and economics here that I want to bring in and I will close with that.

I have published in law journals and economics journals on this particular topic. There is a situation where the ban on child labour is worthwhile. This involves a little bit of economic analysis intertwined with the law. Let's look at the axiom that parents sending their children to work are usually desperate. They are very poor, they have no alternative, they send their children to work. If adult wages were high then child labour would go down automatically. You would not need the law very much to banish child labour if adult wages began to rise. In the United States, there is a law against child labour but even if that was revoked today and it was said that parents could send their children to labour, there will be a miniscule increase in child labour, No one will even think of sending their children to labour just because it is not illegal. So it depends a lot on wages.

If you ban child labour in a society and impose the law properly so you have a new bill which says no children can work, then all these children will be withdrawn from the labour force. Can you tell me, by using a little bit of intuitive economic reasoning, what will happen to adult wages if all child labour gets withdrawn from the labour force? I know that in Ethiopia 42% of the children work as labour (I am giving you a slightly dated figure). In India, that figure used to be 12% or so. I am assuming by now it will be less. If you have a law so that child labour is withdrawn, what will happen to adult wages? Adult wages will go up because entrepreneurs will now be forced to compete to hire the adults. If the adult wages go up sufficiently,

at one level you will not need the anti-child labour law anymore because if the adult wages rise sufficiently it will not be in the parents' interest to send their children out to work. In such a case, the law plays a very interesting role. It deflects the economy from a low-adult wage equilibrium to a high-adult wage equilibrium. Once you get into a high adult wage equilibrium, the law ceases to matter because now the parents themselves don't want to send their children out to work. The law plays the role of deflecting the economy from one equilibrium to another.

A law can be used in many different ways to achieve a lot in an economy. This is one field which is very weak in India. I know that law is a very important discipline in OP Jindal University. Since you are in an interdisciplinary program, you will hopefully be able to study a certain amount of sociology, politics, law and economics. These are a couple of areas gone through hurriedly keeping in mind your attention and focus in the program. Trying to dig a little bit deeper into the world of knowledge to create better policy is a wonderful endeavour, and hopefully you all will keep that in mind.

INDIA'S MACRO FISCAL BIND: IS CO-OPERATIVE FEDERALISM A SOLUTION?[3]

Rathin Roy[4]

Abstract:
This piece discusses the contours of 'cooperative federalism' and its implications on national and state governments. Since the middle of the last decade the Union Government is the main source of fiscal deficit, while states have done reasonably well to contain their finances. Since the mid-1980s, states have received relatively lesser share of total revenue, while centre has not taken adequate responsibility in terms of investments on developmental priorities like education and health even though key centrally sponsored schemes like Sarvya Siksha Abhiyan (SAA) and National Health Mission (NHM) have been introduced. Given that our domestic saving rates are not very high, combined fiscal deficit is high and GDP is growing only moderately, prospects of revenue growth is bleak. We would need to spend the resources better. It would be fiscally prudent to provide greater fiscal power to states so that education and health receive greater investment.

I started my life after my Masters as an investment banker. I did investment banking for one year and I got thoroughly bored. Then I moved on to do a PhD for want of anything better. My thesis in the economics department was called the Politics of Fiscal Policy. Nobody in 1989 had any idea that you must have a theory of the State to be able to say anything meaningful about fiscal policy. Otherwise what you get in economics is that you have firms, you have consumers and fiscal policy is a distortion-correcting mechanism because all governments are just distortions. Then you get the theory of optimal taxation and you are home. On the other hand, trade by profession does not acknowledge nation states. The business of international theory is a business of correcting distortions. When countries trade, they do so because they exist as nation states imposing boundaries

[3] This piece is based on the lecture delivered by Prof Rathin Roy on July 1, 2014 as JSGP commencement lecture.

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on free exchange which leads to suboptimal general equilibrium, which means distortion. So, two important and very lucrative areas of economics are about the strategy of distortions. I was pursuing my thesis when the collapse of both the Soviet Union and Yugoslavia happened. - Nation-states became problematic for economists, structural adjustments were into trouble, and people said, 'Oh my God we have to start thinking about something called political economics!' and Harvard and MIT started programmes on political economics.

I would like to take up a simple public policy proposition in India and illustrate how thinking about public policy in a multi-dimensional fashion enables you to come up with out-of-the-box solutions, and how a certain amount of intellectual opportunism helps you to make your point effectively in a public policy context as a policy wonk.

A phrase here that I've used, 'cooperative federalism' is a phrase I have taken from the Prime Minister's speeches. Is cooperative federalism a solution? What does this mean? Let me start the story. There seems to be a policy consensus that the fiscal deficit needs to be reduced. The question is, how to achieve this? There are some statements made quite often, 'you must spend less' or 'you must spend within your means' or 'the government must become more efficient'. They have no analytical value because the opposite is not argued. For however good your public finance is, you must always spend less if you can, and if you can, get more with less money.

How many of you understand the difference between revenue deficit as a concept and the fiscal deficit? It is very simple conceptually because you do it in your everyday lives. Let's say that you get a scholarship or that your parents send you some money. You go out and you buy yourself a Xiaomi MI3 phone from Flipkart and at the end of the month, you have obviously run out of money. So you borrow some money and you pay interest on that borrowing (let us assume that that facility exists). Another one of you, or let's say me, who is very fond of food, discovers a wonderful dhaba in Sonepat and goes there every second day. At the end of the month, I don't have money so I borrow. What is the difference between the person who bought the phone and me? Arguably what I have done is that I have consumed (literally), and because I have consumed more than my income, I have borrowed to consume some more. The other person has made an investment in something which hopefully, if you are lucky, will provide you with returns over time. That is borrowing for investment. In general, intuitively you will agree with me that borrowing for investment is something that we all do and that we understand the logic behind it and constantly borrowing for literal consumption is not a good idea.

When the government spends more than it earns, as in the case of India, it is called a revenue deficit. When does the government consume more than it earns? What does the government earn through? A government earns some fees such as license, fees, and toll fees, and taxes. I will reflect on taxes as an interdisciplinary concept for a minute before I go forward. I think your VC will be very pleased with me for saying this because other than the Ministry of Home Affairs, the people who have the most coercive power in this country over you is the Ministry of Finance. They can bug your phone, they can make your life difficult and they do, believe me. They can act with as much impunity as the police. The government earns its money through the use of the coercive power of the State and through taxation. Think about it, because obviously the use of coercive power in the medieval period is different from now, there are social contracts, there are political settlements and so on. But that is why it is important for an economist to understand that taxation is a coercive instrument. Will any economics textbook tell you this? No. I have researched them all, there is no economics textbook that talks about taxation in the context of coercive power. So, you'll need to go to law school and understand this business of coercive power. Get a feel for it, because otherwise you won't be good at public economics.

So, taxes minus consumption. Now, what is consumption? Consumption comes from that social contract. The oldest form of that social contract is what economists of my generation call 'regrettable necessities'— an Oxford term which people have forgotten, it is a lovely term. Regrettable necessities, what are they? So, a number of things which in economics we call general services – police, law, courts – these are regrettable necessities. The minimum thing a government does is that it spends on regrettable necessities. How does it provide that? It buys tanks— that is investment because it is a capital good and it hires people. So, the salaries the government pays plus things that a government buys that are consumed in that year viz., paper, pen, petrol, and so on— these are governmental consumption. Then the government does two other things. Because it has borrowed in the past, it pays interest on its debt, it has to pay that every year. That is also consumption. Then the government does something that other agents don't do. Well they do it, but in a very limited way, within the family. The government transfers money. It takes money from one person and gives it to another, it takes money from another and gives it to one. These can be in the form of direct transfers, DBT, or it can be in the form of subsidies. That is a separate issue. When you add up all these forms of expenditure, you get the total revenue expenditure. Then you take all the taxes. What is needed as taxes should cover at least this. Then there will be no revenue deficit. This is an important point to understand.

The government does more than that, it builds roads and runs railways for starters, and those are considered to be investments. So when the government creates physical or financial capital assets, that is investment. The revenue stream is the same. So, consumption plus investment minus taxes is the fiscal deficit. Consumption minus investment is the revenue deficit. So, the revenue deficit is a subset of the fiscal deficit. It can therefore be argued that the government should not borrow to consume, but it should borrow to invest.

Let us come to India, in particular, to the main forms of government in it—Centre and the State. They do most of the taxing. My theme is confined to the bigshots of the government- the Centre and the States and not touch-upon the local bodies. We have a huge fiscal deficit. States are also contributing to the fiscal deficit but they are not contributing as much as the Centre. This is the fiscal deficit, investment plus consumption. Now, let us look at the revenue deficit. What is happening here is that in India, a quiet revolution has been taking place over the last 10 years. The States of India, by and large, no longer borrow to consume and have not done so roughly since 2003. There are reasons for this. The centre has continued to do this every year since 1981, the centre borrows to consume.

There are general category states in the country. We also have states with special circumstances in our country— the states in the North East, Kashmir, they are called special States. Special States have specific needs, so it is not fair to count them in this. The general states are states that can reasonably be expected to stand on their own feet, barring the North Eastern states, Himachal, Uttaranchal, J&K. Many states were running revenue deficits between 1998-99 to 2003. The centre also ran a revenue deficit in this period. However, since 2003, rich states, poor states, northern states, southern states, BIMARU states, Gujarat, all the states have done away with revenue deficits . States that are quite affected by the financial crisis like Gujarat pull out and go back to surplus. Punjab, Kerala, West Bengal which have been running deficits for quite some time now. We shan't talk about them here, we will exclude them. But broadly, most of the states are doing well. At the same time, keep in mind that the centre keeps running revenue deficits. For example, in this year's budget, the revenue deficit is 78% of the fiscal deficit and I'll show you what that means in a minute.

This panoply of change is the most exciting thing that has happened in Indian public finance in the last decade. For the first time, we have governments that are fiscally fit within the constraints of our political economy. The Centre is collapsing because of revenue deficit from the

Finance Ministry perspective, from what I call the munim, the accountant's perspective. Within the political economy constraints of India, the accountants are good fiscal managers and have a track record to prove that.

This is a great fiscal journey and public finance is exciting, I hope some of you will see that now. It has huge transformatory potential. Now, some clever economists have argued that this has happened because of the Fiscal Responsibility and Budget Management (FRBM) Act. The Finance Commission decides the division of all the taxes earned from income between Centre and the States. The criticisms that the Finance Commission faces are—that it has been allocating the States more money; and that it has coercive power. The FRBM Act applies to both the States and the Centre but the Centre has coercive power over the States. The first criticism is just not true. Yes, money was moved from centrally-sponsored schemes to the state landscapes. But it said so in the interim budget. In fact the current government did a little less of that. The critics have not bothered to compare the old budget with the new budget. This is what different Finance Commissions have done in terms of transferring. Central transfers as a percentage of total state domestic product, across all General category states, was given by the Eighth Finance Commission (1983) as 5.9% and then it went up in the mid-80s and after that it just crashed. During the period of the 13th Finance Commission, which I was part of, it had not yet come back to the level of the '80s. Thus what we are seeing is a degradation of the centre-state share in a dynamic sense which has recovered, so this argument doesn't work.

This implies that the centre is not doing the heavy lifting in terms of public investment. The business of public investment has been done by the states for the last ten years. In Bihar, the public investment GSDP ratio is 5%. According to the government of India, the public investment GSDP ratio is less than 0.7% in the last budget. How is Bihar able to afford it? The beauty of revenue surplus is, Bihar does have a 2.1% revenue surplus, it has an FRBM ceiling on its fiscal deficit of 3%, so, 3+2.1 is 5. When you run into a revenue surplus, when you don't borrow to consume, then you save, you can invest. That is what Bihar, Maharashtra, UP, Tamil Nadu, Madhya Pradesh, and Gujarat are doing. The three states of Punjab, West Bengal and Kerala seem to have better prospects as well. I can see West Bengal is coming out of the deficit, Punjab also, Kerala perhaps.

Therefore, when we focus on the fiscal problems in India today the fiscal problems exclusively at the centre are focused on in large measure. At the central level the principal problem is the quality of public expenditure in India, of monies that are collected and spent by the Central government.

Whether they transfer it or not, they are responsible for it. Human development means you must spend on health and education. After building schools and healthcare facilities, drugs need to be bought, salaries need to be paid, teachers have to be hired and so on. That will always be the current expenditure. One may wonder as to why running a revenue deficit until those human capital returns kick in seems to be a problem. I worked for the UNDP for 15 years, I would not have kept my job if I were an infrastructure fascist. I believe in human development and I am willing to buy that this is what the United Progressive Alliance Government wanted to do. It started all these schemes and it wanted to improve health and education.

Earlier there used to be this Plan and Non-Plan distinction in expenditure. Think of Non-Plan as consumption, and Plan as investment. In Plan, people are investing, they buy the engines. In this decade, the Plan has ceased to be an instrument of investment. It is an instrument of consumption. So, Plan revenue expenditure today is 4/5th, 80% of the total plan. This is horrible if you are an infrastructure fascist, but if you are a human development supporter, you would say that all is being spent on health and education. It is certainly true that it is being spent on health and education and rural development. As a socialist, I think it a good thing to spend on health and education. I think public education is very important, public health is very important, and it is necessary that we spend on them, and if these were indeed the drivers of the revenue deficit, I support them wholeheartedly.

However there are two problems with this proposition. Look at them like a detective story because you have to join them. Problem No.1 is after all this spending has begun on health and education, after Sarva Shiksha Abhiyaan, National Rural Health Mission, etc., etc.. Compare what we spend on public education across the country in India with the other countries. We spend less than Nepal. This is very important fiscally. You are spending more than you ever did before and you are running a cost in terms of deficit but at the end of that huge effort, you are still spending less than Nepal. It's the same with health expenditure. Nowadays South Africa and Brazil are spending more. Note that fact.

Everything we spend from the central government, we spend unwisely. I will give you a simple illustration of that. The target of the 11th Plan was achieved. You take any metric, this is unprecedented in the history of any plan in India. This is the plan that brought about an increase in human development spending and revenue deficit. The GDP growth rate was not achieved, agriculture growth rate was not achieved, employment

generation was not achieved, higher literacy rate was not achieved, the gender gap increased, infant mortality was not achieved, lowering of the sex ratio was not achieved, infrastructural development was not achieved, environmental targets were not achieved. The only thing that was achieved was an increase in forest cover. It is the only place where money didn't need to be spent. You don't cut trees. So, the only targets we achieved are targets where we did not have to spend money. It is facile to think that these targets are ambitious. No, because the way the budgeting process happens is that a target is given and a cost is estimated according to the target. Then the Ministry of Finance takes a view on it and then allocates resources. So, if you had a less ambitious target you would get less money. Therefore when you have a target and don't achieve it, you have spent money badly from a Finance Ministry perspective. Saying that a target was bad or ambitious does not sit well in the Finance Ministry's view.

Now, what is the political economy problem? We spend too little on education and what we spend, we spend badly. But this statement — what we spend we spend badly— is very difficult to sell because our public policy system is opaque. Conversations don't happen across a broad enough domain. People don't have information on the mechanics of spending money. This is kept within the State. This is not made clear. You get data on how much was spent. But what is spent badly is accounted for by a CAG report or by occasional newspaper accounts. There is no structured public policy dialogue. There might be now, with the Expenditure Management Commission, but so far there has not been one on how and where and why we spend money badly. Therefore, for Jean Dreze to intervene in the education sector and say, 'spend your money better' is impossible. But he is a pro-education economist, so what would he and the erstwhile National Advisory Council say? They will say spend more, knowing fully well that what is spent will be spent badly. So then you spend yet more money but you are still not spending enough and you are spending it badly. The human development approach is not working fiscally. It has not been working fiscally across two terms of the UPA government, and nobody has said anything about it. But the fiscal cost has been shown. The centre is borrowing to consume. Remember, we have got some light here, the States have not. Because all this spending, the Plan, was a Central Government plan and Central spending. So, this disease, if you are a doctor, forensically affects the central government. I've shown you, it is not affecting the State governments.

The problem here for the Finance Ministry is this, we haven't done too badly— given that the oil prices are where they are— in reducing our

expenditure on fuel subsidy. The last government was very courageous about it. I was very surprised. Now, if oil prices come down, then we may be able to reduce the fuel subsidy. Food prices are controversial. I don't want to get into that. If you think that the Public Distribution System (PDS) is good, there's plenty to support that view as well. There is enough literature on the fuel subsidy being the most regressive subsidy in India. It goes exclusively to rich people, rich districts, rich states in proportion because these are the people who buy petrol more, directly or indirectly. So, I reduce it by raising the price. The moment you reduce it, and I get, say, 100 basis points reduction in revenue deficit, immediately Mr Jean Dreze will say, 'Spend more on education, you are spending less than Nepal, spend more on health, you are spending less than Ethiopia.' I can't refute these arguments, they are right. So, the consequence of spending money badly by the centre is that even when the centre reduces money on something which is universally acknowledged as bad, its policy room to minting that in the form of a lower revenue deficit is not there because then Jean Dreze and NAC will come and say spend more.

Now I am going to tell you another piece of bad news and then I will come to solutions and stop. Let us go to another interesting policy puzzle in India on the fiscal side. Why are the poor consuming kerosene? Because you have failed to provide them with the fuel that we all use. Secondly, kerosene is a very small part of the fuel subsidy, I could retain it. I am talking about the overall fuel subsidy. A majority of the subsidy is going to diesel. If you are saying that 1/25th of my fuel subsidy is pro-rich, fine, but the fuel subsidy is pro-poor. I can reduce my fiscal deficit by stopping investment and that is what we have done. We have destroyed investment in this country. The Central Government, as I have shown you, has stopped investing. Fiscal deficit is easy to reduce. Revenue deficit has not been reduced since 1981 ever, except when we have had growth. So as a percentage of GDP, it has gone down but in terms of pro-active effort, here you could reduce it because this is current expenditure. Remember that kerosene is a bad fuel, we shouldn't be using it. The subsidy encourages it because we are unable to deliver CNG, LPG etc. to villages because of piping and infrastructural reasons.

Let us now look at a problem Reserve Bank of India is facing. Historically if you ask foreigners, they would say that Indians are very thrifty people who save a lot of money. Since 1981-82, just see how our savings have jumped. The firms have improved their savings and are saving about 6% of GDP. Firms are never going to be, except in very rich countries, big savers because they have to invest, especially in growing economies. So, firms will be legitimately borrowing money. They are

saving something, not distributing dividends, so, let us leave it at that, 6% is good. Households in India have been saving a lot since we liberalized and savings rates have really shot up to 30%. There are only two serious countries in the world which beat us, countries with populations of more than 10 million – one is Vietnam and the other is China – China we had better get used to.

Okay, what is the problem with this? This is great. This means 30% savings are available. Suppose we invest all of this in our country, forget FDI, 30% investment of our GDP. Our GDP is two trillion dollars, 600 billion dollars of investment, 9% growth which is no problem at all. Household savings in this country are composed of two things – financial savings and physical savings. What are physical savings? Physical savings are savings that never see a bank (when I say bank I mean fixed deposits (FD), not savings bank (SB)). They can go under your mattress, they can go straight from your SB account to paying for the down payment for your house. They can go straight to buying gold or diamonds. The point is that they never see a bank. It is very important for money to be deposited in a bank for two reasons. It is only if money is deposited in a bank that the organized manufacturing and the organized corporate sector can access it, as it is to enter somewhere where somebody can go and borrow it. Financial savings is when the money in the bank rotates, it leverages. I will explain that later if you like. You will get more out of your money when it sees a bank. So, when money does not see a bank, in effect the corporate sector does not have it. . So, a strange feature of the Indian economy is that instead of a proportionate increase in the amount of money seeing a bank, less and less money is seeing a bank. This is very important for us, it is a long term feature.. It keeps the Governor awake.

I will give you an example. Look at the consequence. Total savings were 30%. So the International Monetary Fund (IMF) will be very happy. Take away the physical savings and then take away the combined revenue deficit where the centre is borrowing to consume, who is going to pay for it? It'll come from your savings. Ultimately it is only one pool of savings because we don't borrow from abroad. So, if the revenue deficit is 4.4%, the physical savings is 14.3%, take it out. What are you left with? 29.5 minus those two is 10.8. The same 10.8% of GDP you are going to invest, you want 8% growth. You won't get that even in a casino. How can you get 8% growth with 10.8% saving? It is simple arithmetic. Now you see how serious the situation is. It gets worse.

This is where economics becomes really useful, this is good disciplinary knowledge. We know in economics that the consequences of trying to

achieve a 10% growth when this is the situation can be a disaster. We set that target year after year because we are hounded to do so. It is not so this year, we have not done it. If we set a target of an 8% growth simply because, say, China has a growth rate of 9% which worries the Finance Minister and he sets the aforementioned growth rate, then two things will happen. One, trying to do too much with too little will cause the prices to rise at the macroeconomic level, thus resulting in inflation. You can also borrow money abroad and that is why we go for Foreign Direct Investments (FDI), Foreign Institutional Investments (FII). Now, if you borrow money from abroad, you are trying to add to your resources abroad, especially current resources, which leads to more imports and less exports. This leads to an inevitable depreciation of the currency which will lead to trouble like in 2013. That can happen when you believe that FDIs will happen but they do not, thus leading one to opt for FIIs i.e. portfolio investment. Portfolio investment is fickle, it will go in and out. Suddenly the equivalent of a viral fever afflicts the macro economy. Every six months the Governor can't sleep, the FM can't sleep, nobody can sleep. Everybody is tense, because of trying to achieve this 8% growth. However this results in inflation, then in a current account deficit —this is the twin deficit.

Now what are the policy options for the Finance Minister? Not very good, I'm afraid. They have moderated their growth forecast. If you look at the medium term macro framework, they have now settled for a growth rate of 5.5% for the next two years, which is achievable, but a bit low. Suddenly India is no longer an 8% economy, we are a 5.5% economy. I am an old man, I remember when we were at 3.5%, so I am happy with 5.5%. If you wish to grow at 7-8% you can get it, temporarily by tolerating a higher rate of inflation. The problem in India is a lot of this inflation is dirty inflation. I don't think even the RBI knows why but it is affecting the subzi (vegetables) and tomato prices which are going up by 80%. Inflation is thus unpredictable and the political costs are much higher when there is a moderate increase in the headline rate of consumer price inflation. It makes politicians nervous.

Or you can do something else entirely different. You can change the entire philosophy of India's growth story. The difference between India's growth story and China's growth story is that we don't export to grow. We grow because we are a large economy, we have domestic demands, that is our growth story. However, it is possible to solve the current account deficit by exporting to grow. But that means, for instance, that it is not necessary to invest in railways other than the amount necessary to get the trains to the Gujarat port or the Vizag port to sell textiles to Japan. If that is

done, then the UP-Bihar railway and other internal railway lines are not needed, like China did. Then a string of pearls along the coast and good infrastructure are needed and the rest of the country needn't be developed. I don't think electorally this is possible, but I am saying that this is the stark nature of the change in economic policy strategic shifts we will have to make to solve this problem without accepting a low rate of growth or a low rate of inflation.

This is India's macro bind. When you have a combination of no savings but it is thought to be high savings, and a consistently high revenue deficit – GDP ratio caused by poor spending on infrastructure, which creates its own supply side problems, it has happened in history also. All points of crisis have seen this combination. It is happening now. What can be done?

There is one way you can improve the efficiency of public spending, and that is to cap the last revised estimate of the budget. Capping this and all departmental spending at the same time necessitates that the same services and functions be provided without throwing good money after bad, so to speak. That kind of across-the-board spending freeze will force— and it has happened in countries, it has happened in New Zealand, it has happened in the UK, it has happened in Africa— will temporarily force (you can't do this permanently) departments to look after their own bureaucratic interests, the Secretaries will be forced to look for improvements in productivity because they know that no more funds are available. At the moment they come and tell me, you can't cut non-plan. I say, why. Non-plan is all salaries. I said, so, sack them or don't fill posts. I will give you an example of this in a minute. Among the States, the most extreme example is Odisha. In Odisha, Mr Naveen Patnaik has not filled 37% of teachers posts, two-thirds of them are vacant. Forget the Secretariat, it is almost half empty. I have been in seminars with him and I have asked him this question myself. He said, 'Mr Roy, can you prove to me that employing another 100 teachers will improve the quality of education in Odisha?' I said no I could not. He said, 'When you can do that, tell me, otherwise I am not going to spend the money because I don't know how to improve the quality of education, I am convinced that hiring more teachers will not do it.' It sounds very bleak and pessimistic to decide not to spend any more money if the government is already so bad at public spending. That is the Naveen Patnaik story.

Second is the one I was telling you, we don't have a clue. Nobody has a clue. I have been back in this country for 14 months, I have systematically gone through every document, policy paper, research paper since 1980 in the RBI, in academia and I have not found a single paper on this. I have

found lots of papers on how to measure it. But none on what drives it. Harvard also does not know. I have looked abroad as well. There has been no policy research or any kind of research on why this physical savings driver is going up. It is a very exciting area because nothing should be more musical to the ears of all you public policy researchers than the presence of an unsolved puzzle. It is tractable, the data is there, you need to apply your mind. But we need to review the share of sharing, there is a policy research agenda there that can be used now to help the RBI.

Finally, I think the time has come for us to decide that the central government should play a lesser role in spending on health and education and so on . I think the prime target for that is human development. To put it simply, the states are delivering good fiscal practice. Empower them on this basis by increasing radically their share in the total tax provision and shut down the responsibility of the central government for spending on health, education, unemployment and make it solely and exclusively the responsibility of the States. Note the total shares of the states in central taxes must increase by this amount and the Finance Commission will allocate to the states accordingly, which they have been doing quite well so far.

Now doing this of course does not solve the problem but I cannot do worse. I know that Mrs Jayalalitha can hand out free colour TVs, and I know that Mr Akhilesh Yadav can hand out laptops and not have a revenue deficit. So, whom should I trust?

The political trick is to have a pitch that has enough of an interdisciplinary connection to appeal to the policymakers and this pitch has something at the end that is politically intuitive to the policy-maker that will help sell it. The bad news is that unless policymakers come up with suitable formulations, an 8% growth rate will not even feature as a distant possibility. Instead, inflation or a permanent change in the terms of our growth story, which means huge inequality, will happen. But the important news here is that nobody in the finance ministry or anywhere else should take seriously anybody who writes in the newspapers or anywhere else that increasing tax revenues here will solve the problem, reducing expenditure here will solve the problem.

ENGAGEMENT OF THE PRIVATE SECTOR IN THE PRADHAN MANTRI JAN AROGYA YOJANA: EXAMINING THE PROMISE OF A WATERSHED MOMENT FOR UNIVERSAL HEALTH COVERAGE

Susrita Neogi[5]

Abstract:
The aim of Universal Health Coverage (UHC) has been reiterated in multiple Indian policy documents in the past. Many states as well as central governments have also espoused this goal through government-funded health insurance schemes. The recently launched Pradhan Mantri Jan Arogya Yojana (PMJAY) is yet another insurance scheme of the federal government to provide secondary and tertiary care services to poor and vulnerable sections to achieve UHC. By design, the insurance model of financing health care opens a window to engage with private healthcare providers. However, as past experiences suggest, engaging the private sector in pursuit of public health goals has not been an optimally effective strategy, either in India or globally. This can be explained ideologically through critiques of strategic purchasing as well as pragmatically through the gaps in the implementation of the previous schemes due to the weak stewardship role of the government. This paper compares the design of PMJAY with earlier public insurance schemes and suggests the scope for improvement in the new scheme to successfully achieve the goal of UHC.

Keywords: Universal Health Coverage, strategic purchasing, private sector, RSBY, PMJAY,

The concept of Universal Health Coverage (UHC) originated at the World Health Assembly in 2005, prompting frequent use of the phrase

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in public health discourse in general, and health services in particular. The World Health Organization (WHO) defines UHC as, 'a state of health system performance, when all people receive quality health services they need without suffering financial hardship' (WHO, 2010). Thus, equitable access to health care is one of the core outcomes of UHC. With the partial success of the Millennium Development Goals (MDGs) to achieve equity, the discussion on UHC has regained its relevance and prominence in the discourse of Sustainable Development Goals (Rodney and Hill, 2014).

UHC, in the Indian context, has been notionally represented in all major policy documents on health, starting from Bhore Committee (1946) to the Draft National Health Policy (2017), along with finding a mention in the Constitution (Reddy and Mathur, 2018). The Bhore Committee had proposed a government-funded three-tier healthcare system that integrated both preventive and curative services at all levels. Though the current public healthcare system is based on a similar structure and idea, sustained budgetary constraints have led to this system being inefficient as well as inequitable (Gupta and Chowdhury, 2014). This has encouraged the development of more effective models by the private sector, both formal and informal, consequently ensuring that they find their places in the health care delivery mechanism. The predominance of the private sector is one of the reasons for escalated out- of- pocket (OOP) expenditure for healthcare and further increased inequities (Reddy and Mathur, 2018; Katyal et al., 2015).

In other developing and developed countries, studies reveal that a key area in which inequity may arise within UHC is through disparities in the quality of care being offered and access to specialized clinical services (Rodney and Hill, 2014). Data collected on healthcare in India, for outpatient and inpatient procedures, shows that there is an increasing dependence on the private sector for curative services, which is adversely affecting the economically weaker sections residing in rural areas (Baru et al., 2010). Despite compelling evidence on the failure of such schemes to drive UHC, at the national and global level in India, government-funded health insurance has been the preferred approach by the state[6] and central[7] governments to address inequities in secondary and tertiary care.

[6] 19 government funded insurance schemes have been launched across different states. The states are Himachal Pradesh, Punjab, Rajasthan, Madhya Pradesh, Uttarakhand, Arunachal Pradesh, Assam, Tripura, Jharkhand, West Bengal, Odisha, Gujarat Goa, Kerala, Telangana, Andhra Pradesh and Tamil Nadu. See PWC,n.d.

[7] Rashtriya Swasthya Bima Yojana was RSBY was launched by the Ministry of Labour and Employment, Government of India in April 2008 to provide health insurance coverage for Below Poverty Line (BPL) families to protect them from financial liabilities arising out of health shocks that involve hospitalization. See https://www.india.gov.in/spotlight/rashtriya-swasthya-bima-yojana

In September 2018, another such government-funded insurance scheme, the Pradhan Mantri Jan Arogya Yojana (PMJAY) was launched by the central government. The new scheme claims to have addressed the lacunae in the erstwhile insurance schemes and hence, can be considered to be better equipped to achieve the vision of UHC, although the design of this scheme has been criticized as well, especially with regards to the insurance mode of financing and the insufficient budget allocation (Jan Swasthya Abhiyan, 2018). This commentary examines the measures adopted in PMJAY to facilitate the participation of the private sector in delivering healthcare to all sections of the society, taking from the conceptual as well as the practical bottlenecks experienced in other government schemes that involved private sector institutions through strategic purchasing mechanism to achieve UHC. The scope of the analysis of PMJAY is confined to the design of the scheme only as the scheme was recently launched and data on implementation is yet to be made available.

STRATEGIC PURCHASING OF HEALTHCARE SERVICES FOR UHC: A CONCEPTUAL UNDERSTANDING

The idea of strategic purchasing for health care is rooted in the Quasi Market Model (QMM), a product of the New Public Management (NPM) reforms introduced in the neo-liberal era. The World Health Organization (WHO) defines strategic purchasing as an active approach to financing healthcare in which transfer of funds, fully or in parts, is linked to the performance of the provider and is in accordance with the health needs of the population that they serve (WHO, 2017). Similarly, as a government-funded insurance scheme, PMJAY can be considered to be promoting strategic purchasing as the government pays for the insurance premiums which are used for purchasing healthcare services from a variety of private, public and voluntary providers. An argument in favour of strategic purchasing from the private sector is that 'money follows the patient', a process which might improve responsiveness, make private services available for the poor and enhance effective regulation of the private sector providers (Lagomarsino et al., 2012; McKee, Edwards and Atun, 2006).

Underlying the justification in strategic purchasing, the mandate of QMM was to change the form of the public sector organization to a 'quasi-firm'[8] (Ferlie, 1992). To aid that, existing public hospitals and health care

[8] As a quasi-firm the organizations like hospitals and schools are under pressure to attract business in order to maximise revenue. They also need to market their services to consumers or their proxies; they may be pressurised to reduce cost and raise quality; they may even determine their own competitive strategy in response to local market conditions. Like firms they may also collude with other providers or seek to find ways of reducing purchaser pressure on them. See Ferlie 1992

institutions are assigned an autonomous status to enable easy decision making and also in generating their resources. This created a split between the purchaser and the providers of health services. In this model, funding is not allocated solely through planning; instead, the allotment is done through competitive bidding, by both public and private providers, geared towards controlling the cost and maximizing profit (*Ibid*). Based on Britain's experience of strategic purchasing in the National Health Services (NHS)[9], Simonet argued that the internal competition neither ensured a patient-centric approach nor did it reduce the prescription cost; rather, it provoked private physicians to adopt cost-saving measures like reducing staff (Simonet, 2013). Other criticisms included aspects like increased administrative cost because of the complexity of this model and those private providers could skim resources from the public facility (Lagomarsino et al., 2012).

Owing to the fragmentation between the purchaser and provider, a third institution to ensure the accountability of services is warranted. However, guided by the neo-liberal doctrines of less government involvement, there is little scope for any such institution in QMM. Instead, in the name of choice, it rests the onus of accountability on the patients and their families, who are considered to be 'consumers'. It is also explicit that the public funding infused in private institutions raises ethical concerns regarding equity of access by excluding those who are unable to bear the rising cost (Kapilashrami and Baru 2019). This perspective can be categorized as 'ideological' as it is germane to the criticism of neo-liberal approaches to UHC.

Box 1: Two types of governance reforms proposed by HLEG

Managerial – All India and state level Public Health System Cadres and state level Health System Management Cadre.

Institutional – National Health Regulatory and Development Authority (NHRDA) with three key units for (i) legal, financial and regulatory norms, (ii) accreditation of both public and private sectors and (iii) evaluation of performance of both the sectors.

In 2005, the World Health Assembly proposed that overall strong government stewardship can facilitate collaboration between public and private providers as well as health-financing organizations to

[9] National Health System (NHS) in Britain where the District Health Authorities (DHA) was granted a fixed budget to purchase care from hospitals and other community-level care providers which instilled competition among the providers. See Simonet (2013)

operationalize the idea of UHC as a more pragmatic approach to support the strategic purchasing approach (WHO, 2005). Armstrong (1997) contended that the capacity of stewardship enables the State to consolidate market-oriented reforms into an ethically driven policy-making framework. The same was suggested in the World Health Report, 2010. Although it opposed the provisioning of health services financed through public insurance, the High-Level Expert Group (HLEG) on Universal Health Coverage (UHC) by the Planning Commission of India supported the role of State *as guarantor and enabler and not necessarily the only provider (Planning Commission, 2011).*

According to HLEG, to achieve UHC, the government should provide a package of essential healthcare services; involving the private sector through strategic purchasing for secondary and tertiary care. Such a recommendation is antithetical to the notion of universalization of health care; it prioritizes medical care with the support of the private providers (Qadeer, 2013). The Group further suggested reforms in institutional and managerial structures to enhance the State's capacity as an effective purchaser of health care services but did not delve deeper into the structures of these bodies (Box1) (Thakur 2011). However, recollecting the NHS experience, it should be well understood that regulations cannot be guaranteed by such independent supervisory organizations, considering that they are run by former public sector functionaries who have the same *lingua franca* and *modus operandi* (Simonet, 2013).

EXPERIENCE OF PRIVATE SECTOR ENGAGEMENT IN INDIA SO FAR: QUESTIONING PMJAY'S DESIGN

The Pradhan Mantri Jan Arogya Yojana, also known as Pradhan Mantri Rashtriya Swasthya Suraksha Mission (PMRSSM), was launched in September 2018. The scheme aims to cover healthcare costs of up to Rs. 5 lakh for 10 crore households identified from the Socio-Economic and Caste Census (SECC) (GOI, 2018). Under this scheme, 'no- cost' secondary and tertiary health care will be provided through an active and accountable network of public and private providers. The inherent assumption is that a well-measured strategic purchasing of services in health care deficit areas, from private care providers, especially the not-for-profit providers, will not only increase the availability of services but also strengthen the public health care system.[10]

[10] Provider Network Under PM- RSSM: Empanelment and allied process retrieved from https://www.pmjay.gov.in/sites/default/files/2018-07/HBP.pdf

Several schemes launched by the Government of India and the state governments have engaged private players for delivery of healthcare. The most relevant scheme for comparison at this point is the Rashtriya Swasthya Bima Yojana (RSBY). RSBY, like PMJAY, is also a government-funded insurance scheme for promoting inpatient care through private health care providers. After the launch of PMJAY though, it has been subsumed under the new scheme. The PMJAY guidelines have acknowledged the shortcomings of the RSBY, especially for engaging private providers. It is, therefore, necessary to revisit the design of PMJAY based on the lacunae identified, both in the role of State as a purchaser as well as a regulator and in the role of the private sector as a provider, as highlighted in studies of public-funded health insurance schemes.

The fundamental problem with the empaneled private providers, especially in secondary and tertiary care, stems from the fact that the providers are generally located in bigger cities and towns. The lack of private hospitals in rural, tribal and remote areas has been reported by several authors (Nandi et al., 2013; Basu, 2010). PMJAY has introduced higher package rates for hospitals in these hard-to-reach areas as well as having provided viability gap funding for establishing new facilities. How far these measures promote investment by the private sector for healthcare in remote blocks needs to be separately examined once the block-wise data on the private sector is made public.

Next, PMJAY has set out a technology-intensive criterion for the empanelment of private players, in the name of patient safety and appropriate care. The experience of Aryogsri in Andhra Pradesh, another government-funded insurance scheme for Below Poverty Line (BPL) households, shows that such criteria almost inevitably lead to the selection of corporate hospitals. One of the biggest criticisms of Arogyasri has been that the corporate healthcare industry has effectively extracted the State's allocation of healthcare resources (Prasad 2015). This is also a potential threat for PMJAY, especially in backward areas, where secondary and tertiary level public institutions may not be able to meet these standards and are hence rendered ineligible.

Many studies on RSBY in multiple states like Maharashtra, Kerala, Gujarat, Chhattisgarh and Andhra Pradesh, highlighted a similar problem regarding private players for the nature and cost of care (Wagle and Shah, 2017; Rathi, 2011; Jisha 2015; Patel et al., 2013; Dasgupta et al., 2013; Nandi et al., 2016; Prasad, 2015; Roy, 2018). Some that occur in common include overcharging, unnecessary surgical procedures, and selectively providing services for conditions with higher package rates. There were also cases of denying healthcare to poorer patients or those with medical complications,

as discovered in the case of most private hospitals in Delhi that were given land at a subsidized rate under the condition that they would provide free outpatient and inpatient care to 25% and 10% of the poor patients, respectively (Qadeer and Reddy 2006; Shukla, 2018).

Box 2: *Recommendations of HLEG*

Ensure that at least 75% of outpatient care and 50% of in-patient services are offered to citizens under the national health package (NHP); for which they would be reimbursed at standard rates as per levels of services offered, and their activities would be appropriately regulated and monitored to ensure that services guaranteed under the NHP are delivered cashless with equity and quality

Provide only the cashless services related to the NHP and not provide any other services which would require private insurance coverage or out of pocket payment.

Reddy et al (2011) have ascribed these imperfections emanating from market-oriented mechanisms to weak stewardship by the State. The State therefore, needs to design a safety net for the poor before engaging the private players, e.g. a fixed percentage of services, and very importantly, design mechanisms to monitor and enforce this implementation (Saith and Mehrotra, not dated). Similar options for effective strategic purchasing were also recommended by HLEG (Box 2).

Aiming to engage the private sector in a manner that can increase coverage and decrease costs, the PMJAY has constituted somewhat elaborate governance structures at the district, state and national levels. Currently, the national level 'Agency' has been given the status of an 'Authority' to ensure that the restructured body has "full autonomy, accountability and mandate to implement PMJAY through an efficient, effective and transparent decision-making process" (The Wire, 2019). While this could reflect, on the one hand, the government's intention to strengthen the regulatory function, on the other hand, it gives them the power to decide on what means to employ to increase strategic purchasing from the private sector (PWC, not dated).

According to PMJAY guidelines[11] all major decisions are to be taken at the national level, delegating the task of implementing the scheme to district

[11] Guidelines for processes for empanelment of hospitals (seehttps://www.pmjay.gov.in/sites/default/files/201807/GuidelinesonProcessesforEmpanelmentofHospitals_0.pdf) and Grievance Redressal Guideline (see https://www.pmjay.gov.in/sites/default/files/2018-07/GuidelineforGrievanceRedressal_0.pdf)

and state machinery, which may not have adequate capacity. Recalling what went amiss with RSBY, the district and state-level authorities did not interact with the private players regularly and devised no functional grievance redressal mechanism (Dasgupta *et al.*, 2013, Shukla et al 2011; Rathi 2011; Desai 2009). The experiences were similar in other schemes that propagated private sector engagement (Venkat Raman and Bjorkman 2009). Besides, the same district-level committee is being given the task of 'empanelling as many private institutions', screening their eligibility for the scheme and monitoring their performance. These responsibilities may potentially lead to conflict in understanding the role of these institutions.

Given the State's failure to reinforce the Clinical Establishment Act[12], it is less likely that the institutional structures created under PMJAY will be able to do it. Thus, an alternative yet efficacious approach to regulate the private sector is to strengthen the public sector. Like RSBY, PMJAY also enrolls the public sector for the scheme. This strategy has not worked in favour of the public sector, as suggested by the RSBY experience. More direct measures are required to make the public sector robust and able (Das Gupta and Muraleedharan, 2014).

The values and motives of the private sector behind joining a government scheme are of critical relevance. Reich (2000) argues that private sector institutions providing healthcare services under publicly financed schemes should comprehend this as a social responsibility and also see it as their moral obligation to strive for excellence. The RSBY experiences showed that the aspect of the motivation of the private sector also varies greatly (Patel et al., 2013). This was also evident in other schemes like Chiranjeevi Yojana which promoted institutional deliveries; the private sector providers joined the scheme so that they could gain an official certificate under the Medical Termination of Pregnancy Act (Acharya and McNamee 2009). These diverging values of equity and universality in the case of the public sector in contrast to the self-interest and profit maximization of the private sector are often the reasons for the failure of the private sector participation in public services (Baru and Kapilashrami, 2019). The PMJAY has seemingly not made any explicit effort to address this aspect.

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[12] The Clinical Establishments (Registration and Regulation) Act, 2010 has been enacted by the Central Government to provide for registration and regulation of all clinical establishments in the country with a view to prescribe the minimum standards of facilities and services provided by them. The Act has taken effect in the four States namely, Arunachal Pradesh, Himachal Pradesh, Mizoram, Sikkim, and all Union Territories except the NCT of Delhi. See http://clinicalestablishments.gov.in/cms/Home.aspx

DISCUSSION

There are many reasons why PMJAY may not be able to fulfill the stated objective of achieving UHC. Firstly, the amount allocated for PMJAY in the 2018-19 national budget is Rs. 2000 crores. With expenditure for healthcare up to Rs. 5 lakh per household covered under the scheme, it will be able to bear the healthcare cost of only 40,000 families this year. Thus the benefit will reach less than 10 households in each block[13] (approx.5500 blocks in India). Secondly, the scheme uses the Socio-Economic Caste Census (SECC) of 2011 to identify the eligible households. Thus it includes only those families who qualified in one of the seven markers of deprivation when the data was collected. There may be additional households that meet the deprivation criteria now but have no means to be included. There is no mention of any continuous enrollment process under the scheme. Thirdly, some states may not participate in the scheme. It includes those with existing state insurance schemes or with politically divergent positions from the central government about the objectives of the scheme[14]. Despite the provision of portability in the design of PMJAY, the benefits and experiences of seasonal migrants may vary across the country.

Notwithstanding these operational shortcomings, this paper argues that engagement of the private sector to deliver a substantial proportion of secondary and tertiary healthcare falls short in two key requirements– increasing coverage (in terms of numbers of providers in a given geographic area) and decreasing economic barriers (with respect to out of pocket expenditure). The evidence presented so far is best categorized into two perspectives: *ideological* and *pragmatic*.

The *ideological position* is rooted in the critique of neoliberal reforms which proposes strategic purchasing as a key driver to achieve UHC. At the core of this reform process is the doctrine that the State should withdraw its role as a service provider; instead it should perform the financing and stewardship functions and delegate service delivery to the private sector. There are two arguments against the strategic purchasing of healthcare from the private sector. First, the spatial distribution of the private sector is not uniform across and within the states. The private sectors are mostly located in areas where people have purchasing power, not in the backward

[13] Each block is approximately 100,000 to up to 250,000 population

[14] Four states have opted out of PMJAY – Delhi, Telangana, Odisha and West Bengal. The Central government is trying to convince them to join the scheme to ensure portability benefits. See https://www.livemint.com/politics/policy/modi-government-again-urges-four-states-to-join-ayushman-bharat-1559739658188.html

and remote blocks. Second, the fragmented model of healthcare interrupts the scope for forward and backward referral linkage between primary care, which is largely provided by the public sector, and the secondary and tertiary care being delivered by the private sector[15]. With currently no standards for referral and most people directly approaching the private sector for their illnesses, there may be an increase in the number and amount of claims, if hospitalized. In case no hospitalization is required, it will increase the out of pocket expenditure for outpatient care at the private hospital; which is already very high in India[16] but not covered under the scheme (Prinja et al, 2019).

The *pragmatic perspective*, on the other hand, accepts neoliberal reforms as a 'done deal' and hence strategic purchasing as inevitable. In doing so it advocates for a stronger stewardship role of the government. It argues that the private sector will deliver the services as per the conditions if there is effective regulation. Experiences of the different insurance schemes have documented serious reservations about the State's capacities to regulate the functioning of the private sector. The utilization of healthcare is marked by the asymmetry of information and supply-induced demand. Grounded in these realities, the private sector may, directly and indirectly, promote services with higher costs. The State has hardly been able to control this, so far. Its weak control over the existing private sector is also manifested in its inability to enforce the Clinical Establishment Act due to lobbying by medical professional associations in favour (implicitly) of the private sector. There is also candid support for the private sector by the country's political and bureaucratic elites (Baru 2018).

However, there is some hope that PMJAY may be able to revamp the regulatory institutions of the State through the proposed three-tier governance structure (National Health Authority, State Health Agency and District Empanelment Committee); provided it enhances the capacities of the personnel in these bodies and empowers them with enough authority. The scheme should begin by focusing on the district level, where most of the empanelment is done; hence regulation is critical. As per the scheme guidelines, the final decisions regarding punitive measures rest

[15] Primary level is the first point of care which acts as a gatekeeper for the secondary and tertiary care. If the linkages between these three layers are broken, the patient may directly reach the secondary and tertiary care facilities which may increase the caseload at those levels. This may be beneficial for the private sector initially, but as the caseload exceeds their institutional capacity, they will deny services to the poorer patients.

[16] 4.2 per cent of India's Gross Domestic Product (GDP) is spent on health care. Out of this, the government's share is only one-fifth, rest is being spent by the households. Majority of the health care expenditure is for out-patient care. See https://www.downtoearth.org.in/news/out-of-pocket-health-spending-has-risen-in-rural-india-study-35613

with the state and national levels. This is likely to undermine the control of district-level bodies over private institutions. An empowered District Empanelment Committee will not only empanel the appropriate private hospitals but will also enable effective implementation of strategies for reducing fraud and resolving grievance redressal. A thorough capacity-building and accountability strategies of these institutions are warranted. Moreover, there is a conflict of roles if the same public officials responsible for empanelment are also responsible for regulating private providers. This, therefore, needs to be factored in while these regulatory bodies are constituted at all levels.

The other way of regulating the private sector is to posit the public sector as a tough competitor; this entails strengthening public healthcare institutions (Das Gupta and Muraleedharan, 2014). The PMJAY, while promising to strengthen public institutions, only incentivizes the public hospitals in the same manner as the private ones. Based on the experience of RSBY, cited previously, it is amply clear that introducing market principles do not lead to an increase in revenue for the public sector. Instead in some cases, it reduces the range of services as well as the patient load (Dasgupta et al., 2013). With already a higher preference for the private sector[17] owing to better facilities, a big chunk of budgetary allocation for PMJAY is bound to go to those institutions instead of to the public facilities which are suffering from lack of adequate staff as well infrastructure. To make the public hospitals compete with private facilities for funds under the scheme, the government needs to continue budgetary allocations to upgrade public institutions so that they match the private sector and also ensure efficiency and accountability of expenditure (Jain et al, 2014).

The PMJAY shall surely enjoy the backing of the newly-elected national government as this is a flagship scheme of its previous regime (2014-19). Therefore, it is now the responsibility of the government to fill in some of these explicit gaps; particularly those that relate to the regulation of the private sector, along with the strengthening of the public sector. UHC is a global commitment, and the PMJAY is designed as a key instrument to achieve that. It may be hoped that addressing these gaps restores faith in the public systems, in its stewardship and financing roles and beyond.

[17] Between NSSO 60th (2004) and 71st round (2014), share of inpatient care from public facilities has decreased in both rural and urban areas in a majority of the states. See Jain et al, 2015

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A CRITICAL EVALUATION OF PRADHAN MANTRI MATRU VANDANA YOJANA

Ajay Gautam[18]

Abstract:
In light of the poor health of carrying mothers in India , there is a great need for focus on pre- and pos- natal care in the country. In 2018, India still records to suffer from huge maternity rate across the world with a share of around 17%. Healthcare is not only the basic right of people but better health of the inhabitants of a nation contributes towards its economic development. In this context, the present study attempts to discuss the Pradhan Mantri Matru Vandana Yojana which was launched on January 1, 2017 in India by the Prime Minister Shri Narendra Modi. This scheme facilitates assistance to pregnant women and lactating mothers with a cash incentive for their pre and post-natal care. This study critically evaluates the ground reality of the scheme- from its implementation to its execution thereby highlighting the challenges being faced both by the authorities and the beneficiaries. The study attempts to highlight the success of this scheme across the nation using a review-based methodology. The study found that the improvement in maternal, reproductive and child health is not only crucial in securing better healthcare and also help in reducing poverty thereby broadly stimulating growth of the nation.

Keywords: Government, intervention, challenges, nutrition, maternal, mortality, resources

RESEARCH CONTEXT

Under-nutrition in expecting mothers, new mothers and newly born children plays an instrumental role in influencing maternal, neonatal and child health outcomes. These health results are crucial to growth of the

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Indian economy since it can impact productivity of workers, average life expectancy, human capital accumulation and thus reducing burden of disease. In the Indian context, despite the tremendous growth in socio-economic performance in present times, India still accounts for 17% of all maternal deaths in the world as of 2018. Moreover, India is one such country where child mortality rate keeps on increasing day by day (Kaul, 2017). The death at the time of pregnancy or post-pregnancy, both of the newborn baby and of the mother can be attributed to many reasons. During pregnancy, the physical stress in terms of work pressure in addition to the economic condition of the poor exacerbates the health of the woman. It is understood that pregnant women should be very attentive to their health during their pregnancy period. These women should build good eating habits with nutritious food so that the newborn attains enough nutrition in order to stay healthy. However pregnant women belonging to poor families are not able to get any of these requirements since they do not have adequate resources to provide proper care for themselves and their young ones. Further, these women live in atrociously poor and unhygienic conditions that can prove to be hazardous to the health of their unborn children (Glinoer, 2006).

Around 26 million women are registered as pregnant in the country every year (Jain, 2018). For a healthy pregnancy, the woman is required to procure four antenatal care visits (ANC). However the fact is only 51.2 per cent of them receive all the four ANCs, i.e. four visits to the doctor. In Bihar alone, only 14.4 per cent of the pregnant mothers receive all 4 antenatal care. The figures stand at 26.4 per cent in Uttar Pradesh, 30.3 per cent in Jharkhand, 30.9 per cent in Uttarakhand, 35.7 per cent in Madhya Pradesh and 38.5 per cent in Rajasthan. (Jain, 2018).Also, the average pregnant woman in the nation is unable to have sufficient health check-ups. This results in bringing about pregnancy-related complications, like high blood pressure and anemia. Around half of the women in India are anemic and this increases the risk of maternal mortality and of giving birth to underweight babies. Only 22.3% of pregnant women take iron and folic acid supplementation for 90 days. In addition, 28% of pregnant women had their antenatal checkups only before the 16th week of pregnancy when it should have been initiated from the beginning. Therefore the absence of ANC results in unattended complications which in turn result in preterm births (before 40 weeks) as well as other complications that are disastrous for both mother and child (Barnagarwala,2018) .

Tackling early pregnancies cases in need of hour in India since the women in their early age are estimated to have low dietary intake despite the

increased iron needs in accordance with physical growth and puberty (PTI, 2018). Moreover, the reason for Indian mothers' relatively poor health is largely due to a culture that discriminates between males and females in the country. The mindsets of people wanting a boy child pushes a woman to undergo frequent pregnancies thereby affecting her health. In addition, the illiteracy and unawareness amongst the women about healthcare measures during pregnancy further hampers the possibility of having safe pregnancies during pregnancy (Murphy, 2015).

It has been seen that some women, especially those belonging to rural segments of the nation, continue to do heavy lifting work even in their last days of pregnancy owing to the nature of their occupations.. This is in order to earn a living for their financially weak families. Moreover, such mothers resume work soon after childbirth thereby giving lesser time for their bodies to recover from the stress of pregnancy (GNP, 2017).

The Government of India has been trying to focus on this issue by bringing in many maternity schemes that are focused on bettering the pre- and post-pregnancy mother-child care. One such scheme that has been brought into implementation phase recently by the government of India is the Pradhan Mantri Matru Vandana Yojana. It was launched by the Prime Minister, Shri Narendra Modi on January 1, 2017.

Pradhan Mantri Matru Vandana Yojana has been expected to hold much potential and power to improvise the conditions of expecting and lactating mothers. This scheme is focused on helping such expecting and new mothers to recover their health as well as increase their ability to breastfeed and nourish their young ones in the very first six months after birth. However, the evaluation procedure of this scheme showed that even after a year of its launch, the scheme has not been able to capture the exact number of mothers under it. Further, there have been certain challenges that the scheme faces in order to attain its objectives. Thus, it is imperative to understand and analyze the ground reality of the scheme. The present study will focus on the different aspects of the scheme and the challenges that it faces.

AIM OF THE STUDY AND METHODOLOGY

The main aim of this study is to understand and analyze the effectiveness of the Pradhan Mantri Matru Vandana Yojna scheme, launched in an attempt to address the poor state of maternity care in India. This research has attempted to study the benefits and challenges faced by both the citizens and the government in relation to the scheme. Secondary studies

and data using various business reports, journals, articles, news reports and other such sources based on Pradhan Mantri Matru Vandana Yojna have been assessed for the purpose.

PRADHAN MANTRI MATRU VANDANAYOJANA (PMMVY): OVERVIEW OF SCHEME

India has been performing poorly with respect to maternal and child nutrition despite the consistent efforts undertaken by the government in this sector. It was accounted that only 21% of the pregnant women attain full ante-natal checkups and 37 out of every 1000 infants born died within the first year of birth (Department of Women and Child Development, 2018). In this context, the then ruling government of India launched the Indira Gandhi Matritva Sahyog Yojana (IGMSY) scheme in October 2010 on a pilot basis in 52 districts. To this, Prime Minister Narendra Modi declared pan-India expansion of the existing program and renamed it as Maternity Benefit Program or Pradhan Mantri Matru Vandana Yojna (PMMVY).

This program was implemented in all the districts of the nation in accordance with the provisions of the National Food Security Act, 2013.The scheme is sponsored by the central government that makes the grants available to aid the State Governments and the Union Territory Administrations (UTs). This amount is transferred to the beneficiaries's Escrow accounts in order to provide them with direct benefits. In addition, this scheme is being enacted with respect to Anganwadi Services scheme of Umbrella ICDS under Ministry of Women and Child Development/ Social Welfare Department and through Health system wherein scheme would be executed by Health & Family Welfare Department (Department of Women and Child Development, 2018).Further, this scheme has been executed via a centrally-established web-based MIS software application whereby the central point of implementation is being undertaken at the Anganwadi Centre (AWC) by ASHA (Accredited Social Health Activist) / ANM (Auxiliary Nurse Midwife) workers.

According to this scheme, pregnant women and lactating mothers (PW&LM) are being provided with Rs.5000 each, which becomes Rs. 6000 each after National Food security act implementation, deposited directly into their accounts for the first live birth. This is further subject to some conditions mother to be fulfilled to get the benefits:

Table 1: Installment Plan to Beneficiaries

Source: (GoI, 2018)

Installment	Conditions
1st installment Rs. 3000 (at the end of second birth/ pregnancy trimester)	Require mother for registration of pregnancy at the Anganwadi Centre within 120 Days from LMP (Last menstrual period) as mentioned in MCP Card (Mother Child Protection Card)
2nd Installment (Three months after the delivery) Rs. 3000/-	Requires mother to register the birth, Proof showing reception of at least one Ante-Natal Check-up (ANC). This installment can be claimed after 90 days of LMP Child has received first cycle of immunizations of BCG, OPV, DPT and Hepatitis-B or its substitutes
3rd Condition	Breastfeeding for 6 Months Exclusively

Also, the eligible beneficiaries would receive an additional cash of Rs. 1000/- in accordance with the approved norms towards maternity benefit under Janani Suraksha Yojana (JSY) after institutional delivery. This procedure of obtaining the additional cash of Rs. 1000 has been directed in such a manner so as to provide an average of Rs.6000/- in order to support the mother in meeting the necessary expenses pre- and post-delivery (Saha, 2017). This incentive will act as compensation for the wage-loss the women bear at the time of pregnancy. Thus, this amount will aid in providing post-natal care for mothers as well as for their newborns. Such cash incentives will enable them to take adequate rest before and after their first deliveries.

This scheme is applicable to women who are above 19 years of age and are going to give birth to their first living child. Moreover, the scheme targets women of the unorganized sector who are not provided with any maternity leave and other benefits. Thus, it is the women in economically weaker sections or those living in remote rural areas who are the main targets under the scheme.

OBJECTIVE OF THE SCHEME

The major objective of the scheme is to provide assistance to the pregnant and lactating mothers who seek health recovery before and after childbirth. This scheme aids in availing partial compensation in terms of cash incentives to such women in consideration to their wage loss.

Target beneficiaries of the scheme

According to (PTI, 2018), the following are the target beneficiaries of the scheme.

- First, all pregnant women and lactating mothers are eligible except those PW&LM that regularly work with the central government or the State government or in any public sector undertakings (PSUs) since they already receive analogous advantages.
- Second, this scheme is applicable to women who are going to deliver their first child.
- Third, all Pregnant Women and Lactating Mothers who have their due dates on or after 01.01.2017 are entitled to reap the benefits of this scheme.
- Lastly, the estimation of a recipient;s date and stage of pregnancy would be done in accordance with her last menstrual period (LMP) date that has been noted in the Mother-child protection (MCP) card (PTI, 2018).

Other Special Cases

According to the Ministry of Women and Child Development, (2018), there are some other special cases that are considered in the scheme. They have been discussed as follows-

Case of Miscarriage/Still Birth:

1. The recipient is entitled to reap the benefits of the scheme only once.
2. If there is any miscarriage or still birth situation then the recipient would be entitled to the privileges for future pregnancy and would attain residual instalment(s) in that case.
3. Also, if the recipient has already undertaken the first installment before the miscarriage; this means that she will only have the 2nd and 3rd installments in case of future pregnancy with respect to certain eligibility criteria and conditions of the scheme.

Case of Infant Mortality

In case of infant mortality, the recipient is entitled to attain the benefits only once if she has already enjoyed all the installments of the maternity benefit underlying the PMMVY scheme during her last pregnancy.

Case of Pregnant and Lactating AWWs/ AWHs/ ASHA

In this context, only those women can lay claim to the benefits underlying PMMVY who are either AnganwadiWorkers (AWWs), Anganwadi Helpers (AWHs) or ASHA (Accredited Social Health Activist) , subject to accomplishment of scheme conditions.

Challenges being faced by government in implementation of the scheme

Slow process since its launch: The implementation of the scheme was expected to be slow on account of the initial measures that needed to be taken while executing it. According to the Ministry of women and child development, A year after the launch of he scheme, it was found that the regarding installment payments made via direct cash transfer with respect to PMMVY, only 96,460 beneficiaries had received that amount as opposed to the 1.8 percent of the estimated 51.6 lakh women the government scheme aims to help annually. Therefore the scheme was not implemented to its full potential and did not reach the estimated number of women effectively (Capital Market, 2018). There was a lack of suitable IT infrastructure at the block level which prevented the government from being able to accurately track the beneficiaries and the funds being allocated to them. As a result, the opening of escrow account within states was also a slow process. Further, there were disputes between State and Centre for directing the associate sum of money to these accounts timely(Chandra, 2018).

Delay in verification process: Operationalizing of any new scheme is a time-consuming process (PTI, 2018). this particular scheme also consumed a lot of time specifically with regards to creating a list of recipients, getting the details verified under Unique Identification Authority of India (UIDAI), and sharing information with the central government's public finance management system that refers the information to the state nodal agency (Report, 2016). Tamil Nadu, Meghalaya, West Bengal, Odisha and Telangana were reported to be worst performing states in terms of enrolling the numbers of beneficiaries, whereas Maharashtra and UP were comparatively better performing states (Sehjan Tabasum, 2018). This is because Tamil Nadu, Telangana, Odisha and West Bengal were already running their own maternity benefit programs and were thus reluctant to implement the scheme since the scheme was a by-product of the National Food Security Act (Barnagarwala, 2018).

No integration between Public Financial Management System (PFMS), Local Government Directory (LGD) and Aadhaar systems: A major delay was observed in the time taken by the states in linking the

scheme to Public Finance Management System (PFMS) and mapping out villages through the local government directory (LGD) of panchayats and local bodies. Thus, the major challenge of the project was a lack of proper integration between the Public Financial Management System, the Local Government Directory (LGD), and the Aadhaar systems. This integration was required to ensure the fulfillment of "DBT Standards Alignment" with respect to the Ministry of Women and Child Development. The government was thus unable to implement the scheme nationwide using a unified technological platform in a short span of time (MWCD, 2017).

Lack of interest and motivation in beneficiaries: Initially the government estimated the total beneficiaries in the scheme to be around 51.6 lakh. However, only 2.1 lakh were found to be registered as per the official data of government and only 10,000 women received the benefits of the scheme (Barnagarwala, 2018). The non-registration of the beneficiaries was also one of the major challenges faced by the government in estimating a corresponding finance for the scheme . The government is facing a lack of interest and motivation among the beneficiaries as seen in the reluctance to register under the scheme and avail benefits. In addition to this, there was also the administrative constraint faced by the concerned authorities in terms of the additions of 10,000 beneficiaries every day since this would result in increasing the efforts with respect to the execution of the scheme. This indicated that there was a delay in the disbursement of pending payments effectively and efficiently to the beneficiaries (Report, 2016).

Lack of monitoring: Further, no proper monitoring mechanism is in place for the management of disbursement and is thus not evaluated accurately. The issue of constantly updating the software being used by the government to maintain the information about the recipients (including the installments made over time) is a technical one (Report, 2016). There should be a specialized department to look into the execution of policies and prepare a complete documentation of how the policies affect the beneficiaries.

Delay in disbursement of payments due to too many stakeholders in the process, thereby creating a complex system: The government is entirely dependent on banking operations for the allocation of cash incentives to the beneficiaries at the right time. Thus, the government is dependent on the working schedule of commercial banks, post offices and cooperative/rural banks. Owing to this, their delays in schedule and loopholes act as major challenges to the government's implementing the scheme effectively (Kumari, 2014).

Enacted as a pilot project: The government has also enacted the model on the basis of a pilot project and Public Finance Management System (PFMS) to test the environment for the implementation of the scheme. The implementation and execution of the scheme occurred in an unplanned way, creating a huge loss to the government. Resources thus were not directed to the beneficiaries in an accurate manner, thus causing more loss and confusion. (Devanik Saha, 2017).

IMPLICATIONS OF THE SCHEME

Following are a few implications of the scheme.

Improvement in inequality gap: Primarily the scheme acts as a step towards mending the inequality gap between people so that a poor woman is able to afford her prenatal care. If a mother is well nourished, so is the child in her womb. A well-nourished child has one third of the chance that undernourished children have to move out of poverty. These children will not only be healthy but also learn better in school and turn out to be productive assets to the country. This is because good nutrition will provide them brainpower and strength to face any obstructions to leading a better life. Thus, nutrition is considered to be the center of all efforts to eradicate poverty, combat disease, advance educational standards, and wrestle climate change (World Bank Annual Report, 2013).

Better fertility decisions: PMMVY has influenced the fertility decisions of individuals in terms of maintaining birth spacing. Consequently, people plan how soon after their first children to have their second ones. This will not only lead to the betterment of the health of the mother but also of the child. Further, the beneficiaries are clearly dependent on such cash incentives and retrieve them entirely as soon as they are to be redeemed. Thus, the government has created escrow accounts where cash was directly transferred to the beneficiary. However this scheme also indicates an improvement in policy implementation for the timely disbursement of cash amounts to the beneficiaries who have registered under the scheme (Kupwara, 2018) which is a positive aspect of the scheme.

Increased awareness: States have also organized intensive IEC Campaigns (Information, Education and Communication Campaigns) for creating awareness about the program and widening its scope across the nation. These campaigns aid women in understanding how important prenatal care is for their child's proper and overall development. Also the government has appointed a special staff that monitors the progress of the scheme.

EVALUATION OF THE SCHEME

In the context of evaluating the Pradhan Mantri Matru Vandana Yojna, there are both benefits as well as shortcomings in the scheme.

Benefits of the scheme

With regards to its benefits across the nation, firstly it was found that more than 31 lakh pregnant women and lactating mothers have benefited under the scheme (Nandraj et al., 2012).Further, the progress report of the scheme presented by Parmanand Arya, the Joint Director, Ministry of Women and Child Development in the context of Kupwara district mentioned that the Kupwara district has been leading in the enrollment of recipients and distribution of installment payments effectively. Moreover, the district has been announced to be an 'Aspirational District' by NITI Ayog. Also, it was accounted that a multi-level strategy was undertaken with respect to the guidance and supervision of DDC Kupwara, Mr. Khalid Jahangir. He has enacted a proactive approach encompassing all officials that would combine their efforts in order to ensure that the actual beneficiaries receive the benefits(Press Trust of India, 2018).

Shortcomings of the scheme

Similar to other benefit programs, this scheme has many shortcomings. In 2017, when Pradhan Mantri Matru Vandana Yojna was made effective, the Modi government halved the number of beneficiaries underlying this program by limiting the scheme to only the firstborns instead of the 'first two live births' as applicable earlier (Press Trust of India, 2018). This resulted in restricting many women from enjoying the benefits of the scheme, i.e. those who were working and pregnant for the second time. In this context, according to Dipa Sinha, convener of the Right to Food campaign, the scheme was violating the NFSA (National Food Security Act) as it underlined all pregnant and lactating women except government employees entitled to attain Rs. 6000. Moreover, the central government itself had clearly accepted this interpretation of the Act in an affidavit to the Supreme Court Ruling(?) on 3rd April 2017. Thus it was a clear indication that the government had enacted the scheme for only the first living child in consideration to poor budgetary allocation (Nair, 2018).

It was also acknowledged that during the first year of implementation of the scheme, due to its time consuming operationalizing process, it was only 96,460, i.e., only 2% of targeted women that actually received cash transfers until January 15, 2018. This indicated a reduction of nearly 2 per cent of the total 51.6 lakh women whom the government anticipated would be benefitted annually (Jana & Basu, 2017). Therefore, next year the

government will have to incur greater expense in contrast to last year's budget that has already ended. In this context it was recorded that various states had a resource gap underlying the scheme when the government allocated specific amounts to different states. William Joe et al., (2015) estimated a resource requirement of Rs. 151 crore for Bihar, Rs. 70 crore for Chhattisgarh and Rs. 252 crore for Uttar Pradesh, when the government guidelines are considered with respect to women giving birth to their first children. These statistics reflect that the government made poor planning decisions for its finance allocation to the scheme and was not making serious efforts at effective execution.

The scheme provided Rs. 6000 to the target beneficiaries. So there were many individuals that were too poor and viewed this amount as a major aid in their delivery stage. On the other hand, there were also individuals that were from the middle income age group and higher levels who can easily spend even more for taking care of the mother and child. Thus, there were mixed responses to the scheme.

However there were many beneficiaries who were completely dependent for this amount for the betterment of the health of mother as well as of the child. A contrasting story was presented by Usha, a woman of Chhayan village in the Lalitpur district who stated that she was required to pay money for availing the scheme (Lahariya, 2018).Thus it can be observed that corruption also rolls along with the schemes when implemented.

Another major drawback of the scheme was recognized in the context of cash incentives availed by the beneficiary. It was argued that the government should consider the fact that even after receiving the cash it was not necessary that the mothers attained quality care and products (Sidhu, 2018). It was further added that the amount granted to the Women and Child Development Ministry for the program is a fifth of what was recommended in the report of the Standing Committee on Food, Consumer Affairs and Public Distribution (Ministry Of Consumer Affairs, Food and Public Distribution (Department Of Consumer Affairs), Government of India) in January 2013. This organization is responsible for enhancing the level of nutrition and the standard of living of the people and the improvement of public health in India.

Overall, it can be stated that there are both pros and cons of the schemes. By now the schemes have been beneficial for many but simultaneously have not reached many as well. Though this scheme has aided assistance to many pregnant and lactating women, the government must make

the allocation of funds effectively and in a timely manner as per the requirements of states across the nation. Also, it is imperative that the training of administrative staff especially involved in registration and monitoring of the scheme must be done effectively.

Potential contribution of the policy to the economic development of India

A maternity benefit program serves to fulfill the needs of mothers as well as their children. According to the World Bank Development Indicator data from 181 countries, the neonatal mortality rate was projected to be 22.4 deaths per 1000 live births with respect to India's Gross Domestic Product(GDP) per capita in 2017 (The World Bank, 2018). In India, the neonatal mortality or death in the first month of life is much greater in comparison to the country's economic development process. However in reality, this rate is around 26%. Also India stands as the 12th worst among 52 "lower middle-income countries" that pose risks for newborns (Agar Brugiavini, 2017). Therefore this segment appears to be one of the major segments that require good investment by the central as well as state authorities.

Given this strong evidence it can be understood that the birth rates are unusually low for the nation. The low birth rate is not only a health issue but an economic issue as well. Children that are born small and weak, grow up shorter and have lesser understanding ability as compared to other more privileged children who received proper care and nutrition (Kirigia, Oluwole, Mwabu, Gatwiri, & Kainyu, 2006). In addition to this, the young women of India that have low social status often work harder and eat less. At the time of pregnancy these women have high energy expenditure with low energy intake. Owing to this, their babies appear to be on the path to a stunted adulthood (Chandra, 2018).

In this context, if maternity entitlements are provided to these recipients there will be improvement in birth weight, health and productivity. Further these entitlements will help in overcoming the challenges of maternal and infant mortality rates that hamper the growth of economy output i.e. the Gross Domestic Product (GDP) of India (Wilhelmson, 2006). Additionally, the life expectancy of the nation will improve which in turn will generate higher productivity for a longer term. Moreover there will be a reduction in health inequality and consequently in income inequality since development of health will be reflected in the working patterns as well as the productivity levels (International Network for Economic, Social and Cultural Rights (ESCR-Net), 2013).

The health and income inequalities will also be reduced in comparison to other countries , thereby improving its status among the countries.

To elaborate further, families with lower income levels tend to have higher infant mortality rates and consequently higher fertility rates and high dependency ratio (Anant, Singh, Bergkvist, Haseltine, & George, 2012). This again produces unproductive individuals who will not be able to contribute to the country's economic growth. Thus, the maternal benefits, if they are efficiently implemented for the health of mothers and their children, will contribute to the overall economic growth of the nation. Therefore PMMVY will contribute to the nation's economic growth largely in all these aspects and thus needs to be applied and executed effectively.

CONCLUSIONS

It is the responsibility of the government authorities to provide rights to women with respect to better reproductive as well as prenatal and postnatal maternal healthcare. As per the International Covenant on Economic, Social and Cultural Rights (ICESCR), the State must take initiatives "for the reduction of the stillbirth-rate and of infant mortality and for the healthy development of the child" (Ministry of Women abd Child Development, 2017).

Despite India's considerable progress in the socio economic sphere, it has shown an adverse performance with respect to maternal healthcare. The care of the mother pre and post-delivery as well as the health of the child is very important for the proper growth and development of a nation. If a mother is undernourished, then so is the child in her womb. This indicates that early life interventions can prove to be an effective policy tool for improving the health and human capital of the Indian population.

With this regard, the PMMVY has been observed to be an enlightening scheme that is assisting mothers during their pregnancy and lactating period such that they recover their health. This was seen to be greatly benefiting for women with low social statuses and incomes who have to return to their work as soon as they deliver the baby. Though the scheme was found to be helpful for such mothers, the implementation of the same was not effective enough and was found to have many shortcomings.

Majorly the allocation of funds to different states as per their requirements was deemed to be one of the major drawbacks of the policy that cannot be assessed accurately. The progress in maternal and child healthcare is dependent on a country's capacity to achieve improvements both within

and beyond the health sector, such as the total fertility rate, economic development, and good governance (control of corruption). Further the amount set by the government is also to be questioned on the basis of fulfilling the needs of the mother as well as child. Though the cash is provided to the beneficiaries, the quality of the care is in the hands of the beneficiaries themselves. So it is important to note that the government should formulate more refined policies in assisting with a mother's healthcare and assessing qualitatively.

Overall, the role of government has to change with respect to the scheme in terms of its implementation and functioning across the nation. The following recommendations can enhance the working of the scheme.

- The government should make women to register not only for the scheme incentives but also with a health worker in the region. Such registration will assist the expecting mothers in other important activities related to pregnancy like antenatal checkups, consumption of iron-folic acid supplements, immunizations; attending infant feeding and counseling sessions, and also educate the new mothers on other related aspects. This step will contribute towards making the strategy more efficient.
- The government must implement programs for women for their lack of awareness, lack of interest, low motivation to participate and lack of family support.
- The government can create platforms where pre- and post-natal care can be given to these women rather than just providing the sum. Moreover, the government could actually give the sum when the recipients or the beneficiary undertakes initiatives like vaccinations and checkups.
- The role of the Central government needs to be determined regarding the amount disbursement process, checking corruption and complexity in the procedures such that women are not willing to navigate through them. The government should implement initiatives for improving technological infrastructure, participation of state governments, financial investment amount and other infrastructural aspects such as Aadhar system, verification process, etc.
- It can also be suggested to industries that they allow their female employees flexibility in their work schedules and content rather than burdening them with work soon after their delivery. This will ensure that the new mothers are able to pay attention to their health and the health of their newly born without worrying about work.

- The government must train the administrative staff to register beneficiaries under the scheme and to monitor it properly and create awareness among the people about the importance of undertaking quality healthcare with the given cash amount.

- The government and authorities in charge of the scheme must allocate funds to the development of IT infrastructure so that updated versions of the software can be utilised to maintain proper records of all beneficiaries in addition to tracking the installment payments.

- The government should ensure that weekly and monthly reports of expenditure are prepared and evaluated in order to make appropriate measures to turn the scheme into a success..

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AMBIENT AIR POLLUTION: OVERVIEW OF EVIDENCE FOR INTEGRATED LOCAL AND GLOBAL ACTION

Rupsha Mitra[19] [1] and Vivek U. Padvetnaya[20] [2]

Abstract:
Air pollution has emerged as a serious health emergency both locally and globally. The same air pollutants that cause illnesses and premature deaths also trap heat and cause global warming, interfere with rainfall and accelerate icecap and glacier melting, affect vegetation and ecosystems, and also have trans-boundary effects. This complex set of effects poses a serious challenge for public policy. While policy action itself has to gather momentum to meet the clean air targets across cities and regions to protect public health, policy action will also have to respond more holistically to a range of scientific evidence that has now established more a complex link between air pollution and several other environmental and climate impacts. But this is also an opportunity to adopt policy indicators that can be mainstreamed across sectors to align a full range of interventions for effective mitigation and achieve multiple co-benefits related to health and climate security and sustainable development goals. *Keywords:* Government, intervention, challenges, nutrition, maternal, mortality, resources

Keywords: Air pollution, climate change, global burden of disease, global warming, sustainable development, sustainable development goals, World Health Organisation (WHO), public health, public policy.

There's so much pollution in the air now that if it weren't for our lungs there'd be no place to put it all **– Robert Orben (1927)**

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THE CONTEXT

While air pollution is most visible as a serious public health threat at the local and global level today, air pollution science is increasingly pointing towards widely different impacts of air pollutants, ranging from adverse health impacts to environmental impacts on vegetation and ecosystem to climate change impacts. While this creates a complex set of risks for mitigation, this is also an opportunity for public policy to align its multi-sectoral interventions to maximise air quality, public health and climate change mitigation gains.

Adverse public health impacts of air pollution are the primary concern. Globally, nine out of ten people live in areas that do not meet the World Health Organization's air quality guidelines (WHO 2018). The ambient air pollution is contributing to about 4.2 million premature deaths annually (ibid). The total welfare loss because of these premature deaths is estimated at USD five trillion (World Bank, IHME 2016). The message from the World Health Organization (WHO) is clear and blunt '… (T)o date air pollution is the biggest environmental risk to health, … and effects economies and people's quality of life … it is a public health emergency' (WHO 2016). It is said that air pollution is the largest environmental cause of disease and premature death in the world today, widely exceeding the number of deaths from war, violence, AIDS, tuberculosis, and malaria combined.

Even though the sources of air pollutants are local, the consequences of pollution can be global due to various natural and anthropogenic reasons. The emerging science indicates that local pollutants like black carbon (fractions of particulate matter), and tropospheric ozone that are short lived pose health risks locally and also cause global warming as they trap heat. Also with more global warming, the formation of ground level ozone and secondary particulates due to an atmospheric reaction also increases, enhancing local air pollution and health risks. This cyclical link must be well understood for defining mitigation strategies. Combating air pollution is therefore inherently linked to achieving several of the sustainable development goals and addressing health and climate change consequences together.

There is also a substantial trans-boundary movement of pollutants that harm people beyond the geographies of their origin.

Equally, a big concern is the inequitable incidence of the consequences of air pollution across social and demographic gradients, especially in developing and poorer countries (UNICEF 2016). Developing countries have to bear a disproportionate health burden due to a high incidence of poverty and malnutrition and lack of adequate welfare measures. While

poor people are the most vulnerable to air pollution related diseases, they also face the economic brunt of air pollution control measures that often adversely affect their livelihood bases causing economic distress. Sustainable development goals will have to be pursued not only for environmental security but also for poverty alleviation, and the two need to be explicitly linked.

This review has become particularly important in the context of India which has one of the highest exposure levels to air pollution globally. In 2017, India contributed to 18·1 per cent of the global population but had 26·2 per cent of the global air pollution disability-adjusted life-years (DALYs). It has been estimated that if the air pollution levels in India were less than the minimum causing health loss, the average life expectancy in 2017 would have been higher by 1·7 years (1·6–1·9) and exceeding 2 years in the north Indian states of Rajasthan, Uttar Pradesh, and Haryana (The Lancet 2018).

The Union Ministry of Environment and Forests and Climate Change (MoEF&CC) has issued the National Clean Air Programme (NCAP) to set a national target of reducing particulate air pollution by 20-30 per cent by 2024. It has identified 102 cities that violate the national ambient air quality standards and has termed them as non-attainment cities in order to prepare action plans. In addition to this, catalysed by judicial intervention from the Supreme Court and National Green Tribunal, the clean air programme has been accelerated in Delhi and in the national capital region of Delhi. As these processes gather momentum, it becomes necessary to understand the emerging action, policy gaps and policy indicators that are needed to operationalize integrated planning across sectors for a full range of co-benefits.

Hence, the challenge that public policy faces is to align multi-sectoral policies at local, regional and global levels and to meet multiple goals related to health security, sustainable development and climate change mitigation. This co-benefit framework is critical to bring a synergy of action across sectors. Air pollution is thus a development challenge. Development policies and even international negotiations should be well-informed based on the evidence of multiple adverse impacts of air pollution that include health and environmental impacts as well as climate impacts. There should be a deliberate strategy to build multi-sectoral interventions to shape public policy to meet clean air targets.

PROFILE OF AIR POLLUTION AND SOURCES

The mapping of air pollutants and their sources indicates the widely-dispersed economic activities that are a part of the growth trajectory and

also of the consumption pattern. Air pollution can be broadly categorized into two— Ambient Air Pollution (AAP; Outdoor) and Household Air Pollution (HAP; Indoor). AAP can be natural or anthropogenic in origin (WHO 2006). Natural causes are ones such as desert storms, windblown dust, and forest fires whereas the anthropogenic causes are closely related to urbanization processes such as transportation, industries, power generation, domestic cooking based on solid fuels, waste burning, and agricultural residue-burning in rural areas. Poor urban planning, over-dependence on private vehicles, inadequate public transport, traffic congestion, poor access to clean energy for domestic cooking and dependence on solid fuels all contribute to enhancing AAP (WHO 2018).

Some of the important chemical agents which pollute the air are Particulate Matter (PM), Ozone (O3), Nitrogen Dioxide (NO2), Sulphur Dioxide (SO2) and Lead (WHO 2006). Annexe 1 provides a brief description of these pollutants, their major sources, health and environmental impacts and WHO guidelines on limit values. In addition to this, there is a range of gases, including highly toxic air toxins that are carcinogenic and occur in trace amounts. To assess the state of the air, the Central Pollution Control Board regularly monitors the key criteria pollutants of PM10 and PM2.5, NO2, and SO2 and on a limited scale carbon monoxide (CO) and ozone in cities of India.

Only limited studies have been carried out in India on pollution source inventory and source apportionment to understand the relative contribution. The process had started with six cities being the subjects of studies of the Central Pollution Control Board in 2010 in Delhi, Mumbai, Pune, Chennai, Bengaluru and Kanpur. Subsequently, more such studies by IIT Kanpur, Teri, and IITM Pune have been done for Delhi and a couple of others by NEERI in Kolkata and Mumbai. Broadly, these studies have identified key combustion sources including vehicles, industries, power plants, waste burning, diesel generator sets and incinerators; and dust sources including road dust and construction dust. To this is added the problem of episodic pollution from agricultural stubble burning that has a strong bearing on urban air quality. This problem is not confined to only Punjab and Haryana. NASA satellite imagery shows widespread occurrences of this across India. However, the relative contribution of pollution sources varies across cities.

On a national scale, studies have found that among the leading contributors to PM2.5, ~25% was attributable to residential biomass burning (this does not include exposure to indoor biomass burning), ~15.3% to coal combustion (7.7% from industry and 7.6% from power generation), ~9%

to dust such as fugitive dust from roads and fly-ash from coal burning and waste burning, 5.5% to agriculture residue burning, and ~2% each to transportation, distributed diesel and brick production (Health Effect Institute 2018). These numbers are more granular at the city level. For instance, one study by Tata Energy Resource Institute, Automotive Research Association of India and another by Indian Institute of Tropical Meteorology have been carried out in Delhi in 2018 that show the relative contribution of different pollution sources (ARAI- Teri 2018 and SAFAR - IITM 2018). Contributions from vehicular sources in cities can be as high as 40%.

Such scientific assessments and knowledge of good practices enable and refine pollution source-wise mitigation strategies, both for the management of ambient air quality and to reduce local exposure.

AIR POLLUTION AND MULTIPLE RISKS

Air pollution has direct implications on population health, social equity, sustainable development, and climate change.

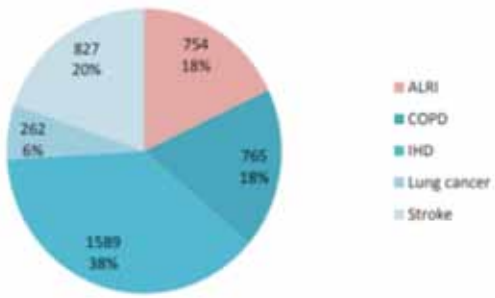
HEALTH RISKS

There is a compelling and growing body of evidence on the contribution of air pollution to disease burden. There is robust evidence to show that the health risks posed by the pollutants have no threshold level, the dose-response relationship is often linear (Kelly et al 2015). As the level of pollutants increases, the health risks they pose also uniformly increase, and exposure to even very low levels over a period of time can have health consequences. Global Burden of Disease studies has pointed out that most of the premature deaths related to diseases influenced by air pollution like Ischemic heart disease occur at a much lower level of ambient air pollution. That is the reason why the safe threshold determined by the WHO is so stringent. Annexe 1 provides a brief description of the health risks posed by the major pollutants and their permissible levels.

The health risks from air pollution manifest as illnesses related to the respiratory system, the cardiovascular system, the central nervous system, disorders of the blood and of the urinary system (Requia et al 2018, IARC 2013). Global Burden of Disease shows that air pollution is also linked with Ischemic heart disease, chronic obstructive pulmonary diseases, lung cancer, and stroke among others. Air pollution also affects birth weight and reduces the head circumference in babies born to women who have been exposed to air pollution (Marie Pedersen et al 2013 Lancet Respiratory Medicine).

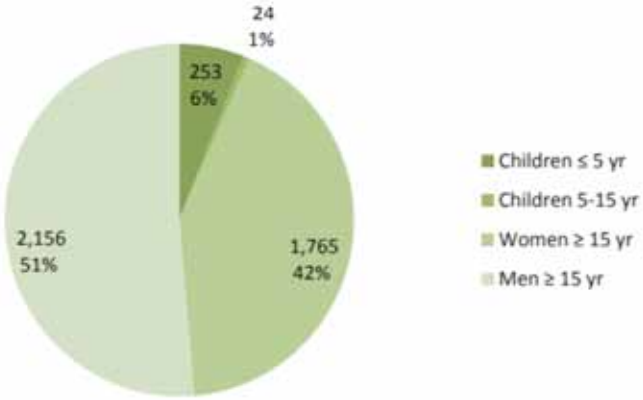
Many of these conditions can be co-morbid, meaning they co-exist and aggravate each other (IARC 2013). Figure 1 provides a disease-wise break up of mortality due to AAP and Figure 2 provides a demographic breakup of the mortality due to AAP. Children and women are more vulnerable to air pollution. Poor people in the grip of malnutrition are also extremely vulnerable. Risks are higher among vulnerable populations such as children and pregnant women (UNICEF 2016). Globally, 93 per cent of children live in areas where air quality is above permissible levels. Air pollution contributes to ~543,000 deaths among children less than five years of age (WHO 2018).

Figure 1: Disease wise breakup of the deaths attributable to AAP (WHO 2016)



Percentage represents percent of total AAP burden (add up to 100%).
AAP: Ambient air pollution; ALRI: Acute lower respiratory disease; COPD: Chronic obstructive pulmonary disease; IHD: Ischaemic heart disease.

Figure 2: Age and gender wise breakup of the deaths attributable to AAP (WHO 2016)



The WHO and the International Agency for Research on Cancer (IARC) have now declared air pollution as carcinogenic to humans. For instance, experts at the IARC after reviewing more than 1,000 scientific publications, observe; *"We now know that outdoor air pollution is not only a major risk to health in general but also a leading environmental cause of cancer deaths". The risk of developing lung cancer is significantly increased in people exposed to air pollution. Classifying outdoor air pollution as carcinogenic to humans is an important step … a strong signal to the international community to take action without further delay"* (IARC 2013).

INDIA'S PUBLIC HEALTH RISK

According to India's state-level disease burden (ICMR, PHFI and IHME 2017), air pollution is the second-highest risk factor for disability adjusted life years (DALY), which in short means the potential healthy life years lost due to illness. Air pollution contributes substantially to non-communicable disease burden, which is already showing a rising trend in India. As much as 99.9 per cent of the Indian population is estimated to live in areas where the World Health Organization (WHO) Air Quality Guideline of 10 μg/m3 for PM2.5 was exceeded in 2015. In 2015, particulate matter (PM) air pollution was responsible for approximately 1.1 million deaths, or 10.6 per cent of the total number of deaths in India (Health Effect Institute 2018). In the last 25 years (1990-2015), the average exposure to PM2.5 has increased from 60 μg/m3 to 74 μg/m3, with the steepest increase happening in the last 10 years. In this period, the summary exposure value (SEV) of AAP increased by 16.6%. India's specific morbidity and mortality due to air pollution have been highlighted by the Expert Committee Report of the Ministry of Health and Family Welfare (MoHFW, 2015). In 2015, PM2.5 air pollution contributed to 10.6% (1.09 million) of total deaths. This is an increase of 48% from the levels in 1990. Of these, 25% were due to residential biomass burning, 15.5% were due to coal combustion, 9.2% were due to anthropogenic dust, 28.8% due to windblown and mineral dust, 6.1% were due to agriculture residue burning., and ~2% each to transportation, distributed diesel, and brick production.

Of the 4.2 million deaths attributed to ambient air pollution, 17% were due to ischaemic heart disease (IHD), 16% to lung cancers, 25% to chronic obstructive pulmonary disease (COPD), 26% to lower respiratory tract infections (LRI) and other diseases. In 2016, PM2.5 contributed to 5.9% of the total DALYs (29.6 million years of healthy life lost) and was second only to undernutrition (14.6%). Of this 44 % were due to IHD and CVD, 29% were due to LRI, and 25% due to COPD.

The economic cost of increased health burden due to air pollution was estimated at a lost labour output equivalent to USD 55 billion and welfare loss equivalent to USD 505 billion, in the year 2013 (World Bank, IHME 2016)

If no action is taken, population exposures to PM2.5 are likely to increase by more than 40% by 2050. If no action is taken, the deaths attributable to PM 2.5 can rise to 3.6 million. But mitigation of PM2.5 can provide health gains. If the pollution levels were brought down to WHO permissible limits, then the average life expectancy would increase by 4.3 years on a pan-Indian level, by 8.6 years for residents of Uttar Pradesh and by more than 10 years for residents of Delhi (EPI 2018)

Several studies have emerged at the city level as well. In Delhi, every third child has impaired lungs (CPCB 2012). Children growing up in a polluted environment have smaller lungs, by at least 10% when compared to the children in developed countries (SK Chhabra 2017).

From a public health policy perspective, framing city-level as well as nation-wide mitigation strategies with legally binding reduction targets will be a necessary intervention to reduce health risks.

CLIMATE CHANGE RISK

What is not clearly understood at the policy level is that there is also mounting evidence of the interaction between air pollution and climate change concerns such as global warming. While long-lived climate forcers like carbon dioxide (CO2) that have a residence life of 100-500 years in the atmosphere, the local air pollutants that are short lived – from a few hours to 20 years – also have significant warming potential. These are black carbon, methane and others.

The atmospheric brown clouds (ABC) generated by air pollutants and part of the regional haze, adversely impact climate in several ways (Ramanathan et al 2009, Ochoa-Hueso et al 2017). First, the aerosols (sub-micron size particles) both reflect and absorb sunlight (dimming effect) with a surface cooling impact which influences the hydrological cycle and hence the rain patterns. Second, the carbons in ABC absorb solar radiation and thereby amplify the greenhouse warming effect on the climate. It also accelerates the melting of icecaps.

The International Panel on Climate Change (IPCC) had initially listed six greenhouse gases (the "Kyoto six") including the long lived CO2 . Also listed were methane, nitrous oxide, sulfur hexafluoride, and two fluorocarbons

that have much shorter lives. The IPCC has now included black carbon in the list. The IPCC report (AR5) released in 2014 has doubled the estimate of the warming caused by black carbon – it is now considered to cause warming at least 800 times more than its previous estimate over a 100 year period when compared to CO2.

Ozone, aside from its health impacts, is also a short-lived climate pollutant. Tropospheric ozone is one of the most important greenhouse gases (GHG). The Sulfur Dioxide (SO2) combines with water in the air to form sulfuric acid, which is a primary constituent of acid rain. Despite its short atmospheric lifetime, black carbon is one of the largest contributors to global warming after Carbon Dioxide (CO2). Black Carbon is also known to decrease agricultural yields and accelerate glacier melting.

This implies that a severe mitigation of air pollution will give the co-benefit of reducing local or regional warming impacts and their adverse impacts on rainfall as well as reducing glacier melting, both of which are serious threats. The WHO has linked its health agenda with the UN Framework Convention on Climate Change (UNFCCC) (A. Roychowdhury, CSE 2016).

AIR POLLUTION AND SOCIAL EQUITY IMPACTS

Yet another dimension of air pollution mitigation is the disproportionately high health and cost burdens on the lower income classes, especially in developing countries like India. These countries are also the most vulnerable to health costs associated with climate change and extreme weather events. The incidence of poverty is high in the least-developed and developing countries. The results of several studies suggest that socio-economic status can be a potential effect modifier (IARC 2013). Poverty is a strong correlate of the degree of exposure to environmental health risks. Globally, the burden of diseases attributable to air pollution falls heavily on lower and middle-income countries (LMIC). 91% of premature deaths due to air pollution occur in LMIC (WHO 2016).

In India, the disease burden is generally highest in north-Indian states with low socio-demographic Index (SDI) levels. The states were categorised into three Socio-demographic Index (SDI) levels as calculated by GBD 2017 on the basis of lag-distributed per-capita income, mean education in people aged 15 years or older, and total fertility rate in people younger than 25 years (K Balakrishna et al, 2018 Lancet).

Studies carried out in Europe and North America have shown that low economic status increases the rates of morbidity and mortality related to air

pollution and determines the vulnerability of the population to environmental risks. Variations in socioeconomic status influence exposures to air pollution and the exposures can be different from the developed countries. Poverty in India and Asia also indicates large scale malnutrition, poor health status and a range of other underlying diseases that further enhance health risks. Also, other determinants including the location of the residents, proximity to traffic and small-scale or informal industries, and overall activity patterns and time spent near the pollution sources have a significant bearing on the health risks from air pollution. In developing countries, the use of solid fuels for indoor cooking is a major detrimental factor and cause of exposure to pollutants (Atmospheric Environment, 2014).

Differential impacts occur through differential exposures and differential susceptibilities. These differences occur due to housing quality and air exchange rates and the presence of indoor pollution sources. Poverty status further increases susceptibility due to differences in underlying health status and access to medical care. Poverty leads to substandard medical care, substandard nutrition, substandard housing, and reliance on inefficient and excessively polluting vehicles and cooking appliances.

Air pollution control measures need to be based on the principle of environmental justice as poor people are more susceptible to health risks, and are also vulnerable to economic dislocation due to air pollution control measures that target their livelihood base, all largely in the informal sector.

LOCAL SOURCES AND GLOBAL CONSEQUENCES

The scientific evidence also indicates that mitigation of air pollution will require regional and global cooperation to reduce the trans-boundary effects of air pollution. Seasonal air currents can also carry pollutants from their local source to faraway places, which make combating air pollution not just a local problem, but a national and international problem too (Freidman et al 2014).

Local air quality can be affected by long distance atmospheric transport of pollution from distant sources. Studies have also found that in international trade patterns, production of goods in one region for consumption in another region drives this problem to a great extent. One study shows that in 2007, of the 3.45 million premature deaths related to PM2.5 worldwide, about 12 per cent was related to air pollutants emitted in a region other than the one in which the death occurred. (Qiang Zhang, Nature International Journal of Science 2017). This builds a strong case for global action.

Moreover, there is also the problem of domestic transboundary movement of pollution. In India, it has been found that in a city like Delhi approximately 26% of its particulate pollution is due to outside influence (TERI-ARAI 2018). The regional influences are substantial. For instance, the satellite imagery shows pollution build-up across the Indo-Gangetic plain that influences cities in the entire region. This phenomenon is evident in the periodic and temporary movement of smoke and pollutants from agricultural stubble-burning from the fields of Punjab and Haryana to Delhi. Air pollution mitigation, therefore, requires both local and regional action.

CONCLUSIONS

This overview of scientific evidence on the diverse impacts of air pollutants brings out the complex challenge that policy-formulation faces. This calls for policy action. While public health concern over air pollution will remain the primary driver of policy action and rightly so, the policy design and implementation detail will have to be worked out in a way so as to achieve multiple goals and co-benefits. This indicates that the next level of policy action cannot remain fragmented in its scope but needs to be integrated and aligned for maximum co-benefits. This will also help influence investment decisions and resource allocation across sectors and bring greater economic efficiency while maximising benefits in terms of reducing health and climate risks, environmental and ecosystem risks, and reduce transboundary effects of pollution.

This will require a more deliberate and explicit connection with the sustainable development goals (SDGs). In developing countries like India SDGs have been formally ratified and are expected to be integrated with the mainstream policies. This is an opportunity to improve the quality of life. In fact, Indian cities have already been mandated to adopt SDGs for sectoral planning.

Combating air pollution is inherently linked to achieving Sustainable Development as air pollution is linked with several of the United Nations 17 Sustainable Development Goals. For instance, achieving Sustainable Development Goals (SDG) 3.9.1 (pollution-related mortality), SDG 7.1.2 (clean energy in households), and SDG 11.6.2 (air quality in urban areas) needs an effective strategy to mitigate air pollution (UNICEF 2016). Strategies aiming at improved air quality interact directly with climate mitigation targets, access to clean energy services, waste management, and other aspects of socio-economic development. If integrated policies are followed to meet the interlinked goals that are related to energy access, limiting climate change and reducing air pollution, a significant reduction in pollution is possible. By

2040, emissions of main pollutants are projected to drop by 60–80% from the current baseline (PeterRafaj et al, 2018; Science Direct 2018).

This builds a strong case for bringing synergy between air pollution and climate change mitigation policies as well as SDGs. Already India has adopted wide ranging policies including Climate Action Plan with eight missions, National Clean Air Programme, National Habitat Standard, Smart City Programme, Renewable Energy Policy, National Urban Transport Policy, and Energy Conservation policies. These are supported by wide-ranging environmental regulations for industry, power plants, transportation, clean energy, building sector, waste sector and the agricultural sector.

Such alignment and synergy can help develop a cross-sectoral integrated roadmap to maximise air quality benefits and meet the air quality targets. Accounting for the impacts and costs in the national policy development in sectors such as energy and renewable energy, transport and mobility, and waste management will provide pathways for a significant reduction.

Mitigation strategies should also be framed at regional scales as well as at a global scale to reduce not only local health exposure and environmental impacts but also to mitigate climate change and transboundary effects of air pollution at a global level. India's diplomacy will have to target global climate negotiations, country blocks and trade blocks in order to address these issues. Perceiving them as applicable for equitable access to global finance and technology flows can certainly help to meet the cost of sustainable development needed for clean air.

APPENDIX

Key air pollutants and their sources, health and environmental impact, and WHO guidelines

Major air pollutants and their sources		
Pollutants and WHO guidelines	**About the pollutant and sources**	**Health and environmental effect**
Particulate matter less than 10 micron size (PM_{10}): Size ≤ 10 microns (μ) WHO: 20 μg/m^3 annual mean 50 μg/m^3 24-hour mean ($PM_{2.5}$): Size ≤ 2.5 μ WHO: 10 μg/m^3 annual mean 25 μg/m^3 24-hour mean	Mixture of solid particles and liquid droplets. These particles are made up of a varying combination of dust, soot, mineral dust, black carbon, water, sodium chloride, ammonia, sulfates, water and nitrates. Comes from internal combustion engines (ICE, both petrol and diesel), industrial processes (building, mining, manufacture of cement, ceramic and bricks, and smelting) and power generation industries (coal, lignite and heavy oil). Also, natural dust.	Fine particles go deep into the lungs, and bloodstream; affect lungs and heart. Cause premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms, coughing or difficulty breathing. Associated with cancer of lungs, urinary tract and bladder. Fine particles cause reduced visibility (haze) and can be carried over long distances. Depending on chemical composition they make lakes, streams and soil acidic; Contribute to acid rains

Black Carbon	It is a major component of $PM_{2.5}$ and driver of climate change. It is also known as a "short-lived climate pollutant (SLCP)." SLCPs persist in the atmosphere for a shorter period compared to CO2. Key sources are diesel combustion, brick kilns etc	While this has a similar health impact as particulate matter, it is also a potent global warming agent. It absorbs heat and warms up; interferes with rains, and accelerates snow melting.
Ground level Ozone (0_3) 100 $\mu g/m^3$ 8-hour mean	It is one of the major components of photochemical smog. It is a secondary pollutant, meaning that it is not directly emitted. Instead, it is produced when carbon monoxide (CO), methane, or other volatile organic compounds (VOCs) are oxidized in the presence of nitrogen oxides (NOx) and sunlight. Hence its levels peak during the sunlight hours Major sources of NOx and VOCs include motor vehicle exhaust, industrial facilities, and chemical solvents. Major sources of methane include waste and fossil fuels and agricultural industry	People most at risk from breathing ozone include people with asthma, children, older adults, and people who are active outdoors, and outdoor workers. Breathing ozone can trigger chest pain, coughing, throat irritation, and airway inflammation. Reduces lung function and harms lung tissue. Ozone can worsen bronchitis, emphysema, and asthma, leading to increased medical care Ozone affects agricultural crops, sensitive vegetation, especially during the growing phase, and ecosystems, including forests, parks, wildlife areas.

Nitrogen dioxide (NO_2) WHO: 40 μg/m^3 annual mean 200 μg/m^3 24-hour mean	NO2 is one of the many nitrogen oxides and is the main source of nitrate aerosols or secondary particulate, which forms an important fraction of $PM_{2.5}$ and, in the presence of ultraviolet light, of ozone also. Comes from combustion sources, heating and power generation, and engines in vehicles and ships.	NO2 irritates airways and affects the respiratory system. Short term exposures aggravate respiratory diseases, asthma, coughing, wheezing or difficulty breathing leading to emergency hospital admissions. Longer exposures may contribute to the development of asthma and increase susceptibility to respiratory infections, bronchitis. Contributes to premature mortality. NO2 and NOx contribute to forming acid rain that harms sensitive ecosystems. Also contribute to haze.
Sulfur dioxide (SO_2) WHO: 20 μg/m^3 annual mean 500 μg/m^3 24-hour mean	SO_2 is a colourless gas with a sharp odour. Largest source is burning of fossil fuels by power plants and industrial facilities. Smaller sources are industrial processes such as extracting metal from ore; natural sources such as volcanoes; locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content.	Short-term exposures to SO2 can harm the respiratory system and make breathing difficult. Children, the elderly, and those who suffer from asthma are particularly sensitive to it. SOx also contributes to secondary particles. SOx harms trees and plants by damaging foliage and decreasing growth. Contributes to acid rain. Also impairs visibility.

Carbon monoxide (CO) WHO: 100 mg/m^3 15 minutes 60 mg/m^3 30 minutes 30 mg/m^3 1 hour (10 ppm) 8 hours	It is a colourless and odourless gas formed during the incomplete combustion of carbon-containing fuels. Motor vehicle exhaust and machinery that burn fossil fuels Indoors unvented kerosene and gas space heaters, leaking chimneys and furnaces, and gas and coal stoves also release CO.	CO reduces the amount of oxygen that can be transported in the bloodstream to critical organs like the heart and brain. At very high levels, CO can cause dizziness, confusion, unconsciousness and death. Concern for heart disease. Short-term exposure to elevated CO may result in reduced oxygen to the heart, chest pain and angina.
Lead[1]	It is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Its sources are burning fossil fuels, mining, and manufacturing activities (batteries, paints, ceramic products, caulking, and pipe solder). Primarily leaded gasoline, ore and metals processing, and piston-engine aircrafts operating on leaded aviation fuel; waste incinerators, utilities, and lead-acid battery manufacturers and lead smelters.	Lead gets mixed with blood and accumulates in bones. Affects the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead affects oxygen-carrying capacity of blood and has neurological effects in children and cardiovascular effects in adults. Contributes to behavioral problems, learning deficits and lowered IQ. Lead is persistent in soils and sediments through deposition. Decreases plant growth and reproductive rates in plants and animals, and leads to neurological effects in vertebrates.

Source: WHO 2006

[1] Centre for Disease Control (CDC) website (https://www.cdc.gov/air/pollutants.htm) [Accessed on 24 Nov 2018]

Source: WHO 2006;

[2] WHO website (http://www.euro.who.int/__data/assets/pdf_file/0020/123059/AQG2ndEd_5_5carbonmonoxide.PDF) [Accessed on 24 Nov 2018]

[3] Centre for Disease Control (CDC) website (https://www.cdc.gov/air/pollutants.htm) [Accessed on 24 Nov 2018]

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CONFLICT OF INTEREST STATEMENT

The corresponding author confirms on behalf of all authors that there have been no involvements that might raise the question of bias in the work reported or the conclusions, implications, or opinions stated.

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PRIME MINISTER MUDRA YOJANA AND ECONOMIC DEVELOPMENT OF INDIA

Ajay Gautam[21]

Abstract:
A large part of the Indian population lives in the rural areas of the nation and is excluded from the financial services available in the urban areas. Many people in India do not have access to farmland despite India being an agriculture-dominant country. Owing to limited job opportunities, most of the people are left to their own devices to earn a livelihood. Moreover, many such people belong to scheduled castes, scheduled tribes and other backward classes, who lack proper education, training and financial support. They initiate a micro enterprise or any retail trading activity, which has the potential to expand and grow. If this potential could be harnessed with some guidance, financial support, and training, it could be a huge milestone in the economic growth of the country. The Honourable Prime Minister Shri Narendra Modi recognized the potential of the under-privileged section of the society and launched this Mudra scheme. This scheme has the potential to be a game changer; it can boost a whole new generation of entrepreneurs who can succeed.

Pradhan Mantri Mudra Yojana or Prime Minister Mudra scheme aims to provide financial support to micro/small entrepreneurs by meeting their credit aspirations and by offering an opportunity to grow and expand business. In the Union Budget of 2015-16, the Mudra scheme was proposed by the Finance Minister of India. The primary goal is to "fund the unfunded", banks are required to provide hassle-free loans under this scheme as per the requirements of the borrower. The end users of this scheme are entrepreneurs in rural hinterlands, women entrepreneurs, micro manufacturers, artisans, small-scale businessmen and tradesmen. This study is primarily focused on analyzing the pros and cons of this scheme in order to analyze its impact on the economic development of the country. The methodology of the study will be based on empirical reviews that are based on the available literature related to the Prime Minister Mudra Scheme. It will focus on understanding the usefulness of the scheme to the citizens.

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RESEARCH CONTEXT

India is a fast-paced growing economy where small and micro businesses play a vital role in economic growth of the country. The major contribution of such businesses is generating employment for a large section of the society. Thus, small and micro businesses and related schemes created to promote them cannot be ignored by the policy makers. This can be supported by a very famous Chinese proverb, *"Give a man a fish and feed him for a day. Teach a man to fish and feed him for a lifetime*".

Prime Minister Mudra Scheme is one such step taken by the government of India that strives to make the lives of small/micro entrepreneurs better. This scheme has been focused to motivate and support potential entrepreneurs in starting their businesses by providing them with micro finances. Micro finance is regarded as a crucial tool for overall economic development in India as it can assist the poorer sections in working their way out of poverty. Thus, the main objectives of this scheme are to regularize the informal financial sector by providing guidelines, by creating better codes of conduct, by lending loans at reasonable interest rates, increasing the use of technology, reducing risks on the client's part, ensuring better methods for recovery, and other such aspects (Mahajan, 2018).

Most of the people, who are engaged in small/micro business are uneducated and do not have a working knowledge of the formal banking sector. Owing to this, such entrepreneurs face difficulties in borrowing credit from banks and other financial institutions. Exploitation of these small/micro entrepreneurs by money lenders is not unheard in India. Thus, the Mudra Banks set up under the aforementioned scheme are responsible for refinancing and regulating all the micro finance institutions dealing with micro/small business entities across the country. "*Funding the unfunded*" is the main motto of this scheme and thus the initial quantity of the loans distributed was 20,000 crores as well as a credit guarantee of 3,000 crores (Mammen, 2017). Further, micro finance services provided by micro financing institutions include provision of credit, savings options, insurance, financial counselling, and money transfers, to name a few (Mammen, 2017). Thus, small/micro entrepreneurs can avail themselves of all such services and related benefits which can never be provided by the money lenders.

The Prime Minister Mudra Scheme is also one of the most important contributors to Micro, Small and Medium Enterprises (MSMEs) due to its basic nature of promoting and supporting small and medium scale entrepreneurs. The MSME sector is an engine for generating employment

and is the backbone of the Indian economy, a status which can potentially accelerate its growth. Currently, MSMEs contribute to around 8% of the GDP in the country. This scheme is a big boost for encouraging MSMEs in general and for promoting entrepreneurship and self-employment in the country. The MSME sector in India has the capability of producing growth that is quantifiable in double digits which can reflect on the overall national GDP (Godha & Nama, 2017; Mahajan, 2018). The scheme is thus a contributor to the economic development of the country due to its support for MSMEs in India.

NEED FOR THE STUDY

Small/micro businesses in India are the major sources of livelihood or employment for nearly 12 crore people (Debu, 2018). Providing such people with formal financial services can translate into the opportunity to grow, expand businesses and generate more jobs. The Prime Minister Mudra Scheme has been anticipated to hold much potential and power to improve the conditions of small/micro scale entrepreneurs and thereby contribute to the economic development of the country. It is important to understand and analyze the ground reality of the scheme to take cognizance of the actual flaws in the scheme and the challenges that arise from them. Thus the present study is an attempt to scrutinize the benefits offered by this scheme and their impact not only on small/micro business owners but also on self-employed individuals.

AIM OF THE STUDY AND METHODOLOGY

The aim of the present research is to comprehensively analyze the Prime Minister Mudra Scheme. This research is focused on assessing the challenges faced by both the citizens and the government with regards to the scheme. This research attempts to understand the usefulness of the Prime Minister Mudra Scheme for Indian citizens and its contribution to the economic development of the nation.

DISCUSSION: PRIME MINISTER MUDRA SCHEME

The Prime Minister or Pradhan Mantri Mudra Scheme is a loan distribution scheme which was launched by the Hon'ble Prime Minister Shri Narendra Modi on 8th April, 2015. This scheme provides loans up to 10 lakh rupees to the non-corporate and non-farm micro and small-scale enterprises (BankBazaar, 2018). These loans are termed as "Mudra" loans under this scheme. "MUDRA" stands for Micro Units Development and Refinance

Agency. Such loans are provided by commercial banks, regional rural banks, small finance banks, cooperative banks, microfinance institutions and non-banking finance companies (Gurumurthy, 2015).

As per a survey conducted by NSSO in 2013, there were around 5.77 crore small or micro scale units running across the country, which had provided informal employment to over 12 crore people. These units were mostly run by individual proprietorships or by own account enterprises. More than 60% of such units were owned by the individual or by groups belonging to the Scheduled Caste, Scheduled Tribe and Other Backward communities. It was also noted that these units used to take loans from informal sources outside of the formal banking system or had been using the limited monetary resources available to them. The PM's Mudra Scheme was proposed to connect such units to the formal banking system in order that they be able to expand their business activities and promote the aspiring young generation of the country to become entrepreneurs (BankBazaar, 2018; MUDRA Bank, 2016).

The figure below presents the offering under Mudra scheme:

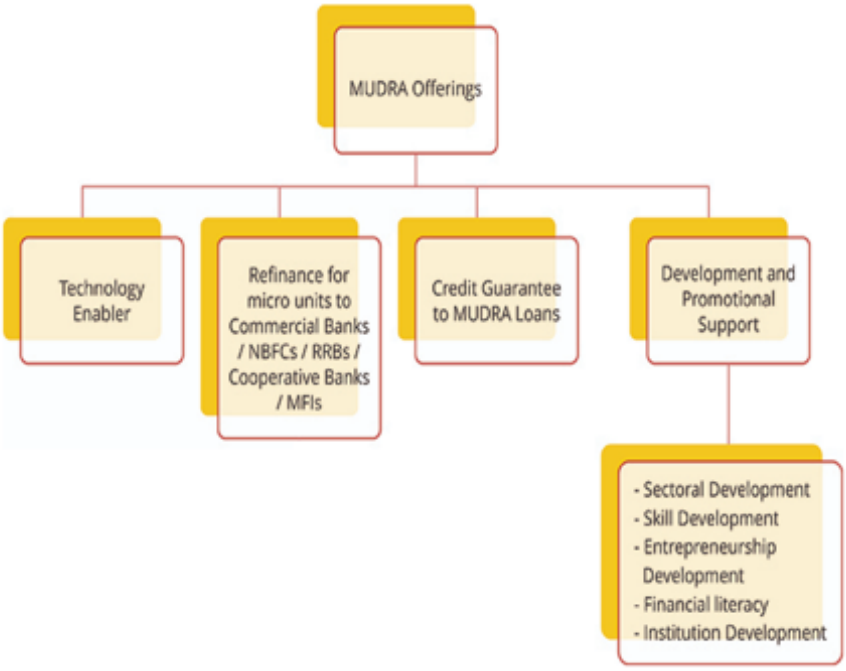

Figure 1: Mudra's offerings

Source: MUDRA, (2018)

OVERVIEW OF SCHEME

The vision behind this scheme was to provide an integrated financial support service to the underprivileged sections of society. It is equivalent to the benchmarked best global practices and standards developed for the overall economic and social development of Indian citizens, and especially of the financially backward class of Indian society. This scheme, in collaboration with the aforementioned banks and financial institutions, provides a loan of up to 10 lakh rupees to small or microscale units for investing in different sectors like services, trading, processing and manufacturing (MUDRA/PMMY, 2016). The loans are extended under three categories under the scheme— namely Shishu, Kishore, and Tarun, all of which are briefly discussed in the table below:

Table 1: Categories of Mudra Scheme

Category	Maximum Loan Amount	Details
Shishu	Upto 50,000/-	For new entrepreneurs starting a new venture requiring lesser funds.
Kishore	Upto 5,00,000/-	For entrepreneurs who need funds to expand or initiate a new business venture requiring larger funds.
Tarun	Upto 10,00,000/-	This is the highest amount of loan entrepreneurs can apply for a start-up venture.

Source: Agarwal, (2017)

The applicants of this scheme can be any individual, partnership firm, proprietary, any private or public company. On the basis of the nature of the proposed activity, the educational qualification, experience, skill and knowledge of the applicant is assessed. One of the compulsory conditions for applying for a loan under this scheme is that the applicant must be an Indian citizen and should have a satisfactory credit record. Further, the applicant should not be a defaulter to any financial organization or bank. Until February 2016, around 2.5 crore borrowers were lent Rs 1 lakh crore under this scheme (Kumar Roy, 2016; Venkatesh & Kumari, 2015).

Some of the salient features of this scheme are as follows (MUDRA/PMMY, 2016; MUDRA Bank, 2016):

Table 2: Features of the Prime Minister Mudra Scheme

S.No.	Features of the Prime Minister Mudra Scheme
1	On the basis of the business plan and proposed investment amount, the cost of the project is determined and credit is provided in a flexible and hassle-free manner.
2	This loan is not provided for personal requirements.
3	Mudra is not just a financier scheme, it also regulates the Financial sector.
4	Mudra Card is a debit card launched under this scheme on the RuPay platform. It also provides an overdraft facility for arranging on a working capital arrangement.
5	Mudra Mitra is a mobile phone app, which is available on Google Play Store as well as on the Apple App Store. It provides information regarding Mudra and all of its loan products. It is a guide for any loan seeker, who can gain easy access to related material.
6	The 'Mudra bank' is also responsible for refinancing and regulating micro finance institutions.

OBJECTIVE OF THE SCHEME

The objective of the Prime Minister Mudra Scheme scheme is to develop a wide-ranging, value-based and sustainable entrepreneurial culture in the country for supporting and achieving not only economic security but also the financial goals of small and medium scale entrepreneurs. This scheme supports and encourages partner institutions and micro and small-scale business sectors for creating an environment of growth and development in the country. The basic motto of this scheme is to provide need-based composite loans, term loan and/or overdraft limit to eligible applicants who require capital assets or working capital or any marketing related monetary requirement (Gurumurthy, 2015; Rupa, 2017).

Other objectives of this scheme are as follows (MUDRA/PMMY, 2016; MUDRA, 2018):

1. Regulating lender-borrower dynamics in the micro finance sector and providing stability by ensuring a wide range of participation in the system. Developing policy guidelines for micro and small-scale financing enterprises. Providing institutional finance services to small business units is also another objective.

2. To cooperate with the financing and loaning activities, MFIs and others, specifically for small/micro traders, vendors, retailers, self-support groups, individuals and suchlike.

3. Accreditation, Registration, Rating and Regulation of Micro-Finance Institution (MFI) entities. Listing all the MFIs and setting up a performance-rating system that will aid in the assessment of MFIs and boost competition in the banking sector.

4. Providing infrastructural guidelines to borrowers in order that they avoid business setbacks and making satisfactory recoveries of the loans. Laying down the guidelines of responsible financing practices in order to prevent indebtedness and to enable better recovery and client protection.

5. Strengthening character of micro businesses by developing standards that regulate last-mile lending. Bridging the gap between the formal banking sector and informal micro/small enterprises.

6. Forming and implementing guidelines for providing loans under credit guarantee schemes.

7. Monitoring of distributed funds and promoting the use of appropriate technological solutions.

8. Creating good credit delivery architecture and ensuring that it reaches the last-mile individual.

TARGET BENEFICIARIES OF THE SCHEME

The Prime Minister Mudra Scheme assists lower income groups and individuals in expanding their small business by providing them with the benefits of the formal banking sector by reducing the cost of finance. The priority in lending is given to the enterprises owned by SC/ST classes or individuals, women entrepreneurs, individuals belonging to backward section of the society and other underprivileged sections. Businesses covered under this scheme are small manufacturing units, fruit and vegetable vendors, shopkeepers, hair cutting/beauty salons, transporters, truck operators, repair shops, hawkers, artisans, machine operators, small industries, food processors, professional service providers, self-help groups, and other such sectors in both rural and urban areas (BankBazaar, 2018; Reddy, 2018).

BENEFITS COVERED UNDER THE SCHEME

As discussed in previous section, one of the main aims behind the initiation of this_scheme is to offer the advantages of formal banking services to people in rural areas or people belonging to backward classes.

Some of the benefits under this scheme are stated in the table below (Debu, 2018; Kumar, 2017):

Table 3: Benefits under the Prime Minister Mudra Scheme

S. No	Benefits under the Prime Minister Mudra Scheme
1	The financial support offered by the Mudra Bank is offered to new-entrepreneurs and small/micro businesses.
2	Under this scheme, banking services reach people in remote areas of the country. This aids people who take loans from money lenders at high interest by providing those loans at nominal interest rates for their businesses.
3	The scheme offers advantages, such as a credit agent scheme with minimum risk associated with it to small/micro scale businesses.
4	The government acts as a credit guarantor, i.e. the government bears the responsibility of loan if the borrower goes into debt.
5	Agents are appointed to guide the borrower in reducing risks and minimising negative results.
6	Regular evaluations are conducted to ensure that businesses are profitable and have no liabilities.

Challenges being faced by the government in the implementation of the scheme

Some of the major challenges faced by the government in implementing the Prime Minister Mudra loan scheme, are enlisted below:

- **Creating Awareness**: Ensuring that every individual, even if at the bottom of the social pyramid, was aware about this scheme was a huge challenge faced by the government. This scheme was widely publicized through various mediums such as electronic media, radio, print media, social media and others. As a part of awareness campaigns, the humongous task of creating awareness at town levels was achieved by organizing hall meetings and credit camps across the nation (Times of India, 2018). But the results are not as fruitful as per the expectations of the implementers. For instance, the Small and Medium Enterprise (SME) owners, both present and prospective, are not yet aware of this scheme.

- **Poor grievance redressal:** This is one of the major problems associated with most of the government schemes in India. The government had developed new mechanisms and institutions with a special focus on micro businesses, but grievance redressal has observed minimal improvement in India (General Knowledge Today, 2015). Thus grievance redressal is a big challenge in this scheme as well.

- **High Non- Performing Assets (NPA) Level:** This is already a huge challenge faced by the banks in the nation, due to the easy availability of loans under Mudra scheme. This problem can grow in an unforeseen manner and is a major concern. In addition to these, vote-bank politics leading to loan waivers granted by the state government along with poor loan recovery rates of Gramin banks adds to this challenge (Mudra Bank Loan Yojana, 2015).

- **Bureaucratic Hurdles:** As over 70% of the Indian population is served by government banks, the bureaucratic nature of the employees is a major snag in the implementation of the Mudra scheme (General Knowledge Today, 2015).

- **Discouraging Shadow Banking:** Shadow Banking is discouraged globally, as it is considered as a flaw in the financial system that can lead to a global crisis. There are already a number of finance agencies dedicated to rural and agriculture development such as NABARD (National Bank for Agriculture and Rural Development) and SIDBI (Small Industries Development Bank of India), but they have not been successful in eradicating shadow banking. The Mudra banks also face the same challenge of establishing the trend of main line banking in the underprivileged section of the society (MUDRA Bank, 2016).

- **Financial Challenges:** The Mudra Bank shares the management of the 'Refinance Fund' with NABARD and is faced with shortfalls in agricultural lending targets. Additionally, it is funded through a non-budgetary mechanism which adds to this challenge (MUDRA BANKLOANYOJANAPMMY, 2015).

- **Lack of Financial Literacy:** For the successful implementation of the Mudra scheme and its expansion, it is essential to educate people in order that they avoid local moneylenders (informal financial sector) and be a part of the formal banking and finance sector. Thus, there is a need to address this challenge by initiating financial literacy campaigns throughout the country (MUDRA Bank, 2016).

- **Infrastructure Creation:** Particularly in the rural areas of India, lack of proper infrastructure and a mismatch between supply and demand of credit services are challenges to the implementation and expansion of the Mudra scheme. There exists a huge demand for credit in such areas but due to lack of skills, asset availability, human resources and other reasons, satisfying the demand proves difficult. (MUDRA Bank, 2016).

IMPLICATIONS OF THE SCHEME

The Prime Minister Mudra scheme is aimed at instilling new confidence in small/medium entrepreneurs, who were previously being exploited by money lenders. Through this scheme, such entrepreneurs will have funding to increase their income, to expand their business as well as to contribute significantly to the economic growth of the nation. Additionally, it will increase the revenue of the government in the form of tax returns (Mammen, 2017).

Some of the implications of this scheme are discussed as follows (MUDRA, 2018):

CREDIT GUARANTEE:

Traditionally, financing in India takes the form of an asset-based loaning approach that stresses upon collateral. Micro/small businesses cannot provide collateral or guarantees so more often than not, they cannot borrow from the formal banking and finance organizations. Thus, Mudra loans of up to 10 lakh rupees are provided collateral-free and without needing guarantees, as per the RBI norms, to the eligible applicants. This credit guarantee is due to the creation of a fund called "Credit Guarantee Fund for Micro Units".

RESOURCE CREATION FOR CREDIT ENHANCEMENT:

The amount proposed for Credit Guarantee Scheme is to be increased continuously as per the outstanding loans charges under re-finance. The same scheme would be used for providing loss guarantee for securitized loans. Credit enhancement facilities offer to cover the probable losses.

PROMOTIONAL AND DEVELOPMENT SUPPORT:

Along with the credit guarantee and enhancement, there are many non-credit issues that are tackled by this scheme such as lack of financial knowledge, skill development, asymmetric information, and other such

aspects. These issues are tackled by adopting a credit-plus approach for offering supporting services to a target population. It will aid in building an environment that can efficiently and sustainably contribute towards the growth and development of the Indian society.

ENHANCING FINANCIAL / BUSINESS LITERACY:

Financial education is fundamentally related to making informed choices about finance and business which involves understanding products, calculating rewards and risks and more. Financial / business literacy and financial inclusion are dependent on each other and supporting it will drive the supply and demand balance to fulfil the national agenda of overall economic growth.

SUPPORT AND PROMOTION OF GRASS ROOT INSTITUTIONS

Formalizing and institutionalizing grass root institutions can aid in developing an environment of growth for small/micro businesses. It is a key area for intervention, by supporting innovation even at the rural level and providing quality education to the youth. This can give birth to a culture of sustainable growth of micro/small business enterprises.

Additionally, this scheme also synchronizes with many other government schemes such as Pradhan Mantri Jan Dhan Yojana, Make in India initiative and other such schemes thereby providing a support system to these schemes as well.

The "Make in India" movement is aimed at facilitating innovation, enhancing skill-development, promoting intellectual property in manufacturing Industry . Along with "Start-up and Stand-up India", this campaign fits in well with the Mudra scheme for creating a conducive environment micro/ small enterprises.

This scheme is also in sync with "Digital India" and "Swachh Bharat Abhiyan" initiatives undertaken by the ruling government. In addition to this, the Mudra scheme is also in synergy with many of the other government schemes such as National Rural Livelihoods Mission, which aims to promote skill development and self-employment at the grass-roots level of the country; Deendayal Antodaya Yojana which aims to reduce poverty in urban areas by promoting micro/small enterprises; National Skill Development Corporation for developing skills nation-wide and more (Chandrasekhar, 2015; MUDRA, 2018).

EVALUATION OF THE SCHEME- PROS AND CONS

As discussed in the previous section, the Mudra scheme is aimed at providing financial support and empowerment to micro/small businesses both present and potential. Previously, when applying for loans, individuals from the poorer sections of the society faced enormous hurdles due to lack of financial literacy as well as credibility and guarantor. To deal with this, the Mudra Scheme offers credit loan in an easy way and without much legalities and formalities binding small/micro entrepreneurs for supporting and expanding their business.

This scheme also targets populations living in remote places who were previously deprived of formal banking services (George & Nalini, 2018). This scheme targets women, minorities and the backward sections of society and strives to ensure financial inclusion. It was noted by Mammen, (2017) that around 70% of the applications for Mudra have been approved by the bank officials and credit officers. Out of the approved 12 crore applicants, around 6.5 crore beneficiaries belonged to backward communities of the country (MUDRA/PMMY, 2016)

India is a country that has only 27% of working female population above 15 years of age, which is the lowest in the spectrum when compared with the rest of the world. This scheme has been a big encouragement for present and potential women entrepreneurs who want to start a new business, or want to develop and expand their existing business.(SKOCH, 2017) . One of the testimonials by Padmini Meher, who lives in Attabira, Bargarh district, testifies the advantages of this scheme. Her family survived on the meagre income of her husband, a daily labourer. She used to work in a handloom factory with her fellow villagers. With the help of Annapurna Micro Finance under the PM's Mudra Yojana, she was able to buy a handloom machine for weaving sarees, which now provides them with extra income (MUDRA/PMMY, 2016). Another testimonial was by Susama Behera, who lives in the small village of Kumareswara, Odisha. She is differently-abled and with financial assistance through Mudra Yojana, she now owns a coir-making machine. She has received a very good response for the products she made and sold (MUDRA/PMMY, 2016).

One of the major challenges faced by the nation as a whole is unemployment. Thus, one of the main objectives of this scheme was to create more job opportunities by supporting the MSME sector. Another benefit of this scheme is that apart from promoting new businesses, it also provides support to already established and viable small/micro businesses

to expand their horizons (Kumar, 2017). A testimonial by Mr. Rajendra Singh, an ex-Armyman from Dehradun, confirms that he had received a loan of 5 Lakh rupees through this scheme for the inception of his business of manufacturing and supplying brooms to retailers. It not only become a viable business but also generated employment for others. Another beneficiary of this scheme was Mr. Viplav Singh, an aspiring entrepreneur who had worked in the pharmacy sector from Udham Singh Nagar in Uttrakhand. After receiving a loan of 5 lakh rupees, he started his business of trading in pesticides and fertilizers, which proved to be successful and has provided employment for several other people. Anwar Ali, another beneficiary of this scheme, was a self-employed jute craft artist who has provided employment to at least three other persons after receiving a loan within a month of filing the application. Mr. Shailendra Kumar from Varanasi was a small-scale detergent manufacturer earlier producing 15 to 20 kg of detergents per day. With a Mudra loan of 5 Lakh rupees, the capacity of production was increased to 1 tonne per day which in turn had generated direct/indirect employment for many (Economic Times, 2018; OpIndia, 2018; Press Information Bureau, 2018).

These testimonials of the beneficiaries of Mudra Scheme indicate that this scheme is fulfilling its objectives of promoting entrepreneurship, self-employment and job-creation. These testimonials also affirm that this scheme is the right step taken by the government for the holistic economic development of the nation.

As a coin has two sides, this scheme also has two aspects— a positive and a negative aspect. The section above discussed the positives of the scheme, now this section will throw light on the negatives as identified by the researcher. This scheme is regarded as a wastage of a huge sum of the taxpayer's money as it offers nothing new and is riddled with flaws as stated by many. Various criticisms and disadvantages associated with the scheme are discussed here.

Tiwari, (2018) in the criticism of this scheme has termed it the "Blackhole of Indian Economy". As per the author the scheme is a mediocratic scheme owing to rampant corruption in the formal banking sector. Particularly, in the Gramin public sector banks, there is a 15% cut prevailing by the manager of the bank branch for a loan under this scheme. As per the estimation of the author, 15% of 4 lakh crore rupees i.e. 60 thousand crores had been deposited in the pockets of the bank employees. Another primary reason for criticism of this scheme is the mounting level of NPA, as this scheme does not require guarantor for taking the loan, borrowers take it casually, despite the higher rates of interest present than other loans.

In the year 2016, as a response to an RTI filed for asking for NPA under Mudra Yojana, the Ministry of Finance revealed that it does not maintain the NPA data at their level. This response points towards inefficiency and mismanagement under this scheme (Agarwal, 2017).

Another censure faced is that it is no different from the previous schemes launched by the previous governments; those schemes did not deliver on their promises and the researchers are expecting the same from this (Mahajan, 2018). Its objective of equitable fund distribution is similar to the objective behind the nationalization of banks under the government of Mrs. Indira Gandhi, the former Prime Minister of India, which have not been very successful in providing loans to small/micro businesses. Additionally, this scheme is criticised for its inability in providing reliable data on employment generation and is termed as a failure in generating employment by many (Dutta, 2018). Moreover, this scheme had led to a multi-body regulation over MFIs. They were previously regulated by the RBI, and are now being regulated by the Mudra Bank as well, which can lead to problems in future. In addition to this, instead of discouraging shadow banking (discussed previously), the Mudra scheme seems to be promoting it, as it is not under the regulations and administration of the RBI (Dutta, 2018; Tiwari, 2018).

CONTRIBUTION OF THE PMMY TO THE ECONOMIC DEVELOPMENT OF INDIA

The Prime Minister Mudra scheme targets small and medium scale entrepreneurs and the people belonging to the poor and backward sections of society. For many decades now, this section of Indian society has been the victim of a spend-and-forget mentality by government bodies. Most of these individuals are either unemployed or self-employed and run small/micro businesses which are termed as part of the informal sector. This informal sector significantly contributes towards the GDP of the Indian economy. Due to its informal nature, it is outside the tax net and is deprived of formal banking services. Thus, this scheme can be stated to be an attempt to include the informal sector in the mainstream economy of the nation. This structural defect of the Indian economy is being targeted under this scheme by providing easy loans at a lower interest rates to the eligible applicants (MUDRA/PMMY, 2016).

The main aim of the Prime Minister Mudra scheme is not just meeting the credit requirement and financial needs of micro/small enterprises, rather it is based on a credit-plus approach that includes technological awareness, financial knowledge and other welfare services. The overall

performance of the scheme is discussed below as presenting the overall achievements made by the Public-Sector Banks under the scheme. The table below indicates substantial growth in the micro-finance/credit sector. In the fiscal year 2014-15, the credit disbursement was 33,000 crores and was noted to increase by around 70% in the next fiscal year. This lending initiative under the Mudra scheme is expected to boost the overall GDP of the country, promote the micro/small business sector, and create more job opportunities (MUDRA/PMMY, 2016). The table below depicts the loans sanctioned, amount and disbursement for past three financial years.

Table 4: Lending Statistics under the Prime Minister Mudra scheme

Financial Year	**No. of Sanctions**	**Amount Sanctioned**	**Amount Disbursed**
2015-16	34880924	137449.27 Crores	132954.73 Crores
2016-17	39701047	**180528.5** Crores	116820.58 Crores
2017-18	**36903984**	**181901.12 Crores**	-

Source: (Press Information Bureau, 2017)

In the past three years, around 11,14,85,955 applicants were provided with Mudra loans of around 499878.89 crore rupees. This scheme's achievement with regards to the vulnerable sections of the society such as minorities, backward classes, and women have been distinctive in terms of promoting entrepreneurship. The motto of this scheme is 'funding the unfunded', new and aspiring entrepreneurs are supported under this scheme. In the year 2015-16, there were 1,24,74,668 new entrepreneur accounts, which was nearly 36% of all the accounts and the amount loaned to them was around 58908.08 crore rupees (Chandrasekhar, 2015; MUDRA Bank, 2016).

Another objective of this scheme is providing financial support or credit to women entrepreneurs. In the year 2015-16, 79% of the total applications funded belonged to women entrepreneurs. The total number of women applicants —27628265—were provided with the combined loan of 63190.43 crores rupees, a majority of the applications were financed by NBFC - MFI's. As per a 2013 NSSO survey, over 60% of the small/micro enterprises belonged to weaker sections, which include people belonging to SC/ST/OBC category. Under this scheme, in the year 2015-16, 53% of the total applications financed belonged to applicants of SC/ST/OBC categories. The total number of 6114737 SC- applicants were loaned

14691.79 crores rupees; 1678346 ST- applicants were loaned 4742.03 crores rupees and 10608416 OBC- applicants were loaned 29762.51 crores rupees (Mudra, 2017; SKOCH, 2017).

Achievements of the banks (public and private sector) and the MFI have been very encouraging, under this scheme. The vigorous growth in providing loans to unfunded or underfunded sections of the society is an indication of the financial inclusion of the borrowers in the formal banking sector. To further promote this growth, the Union Budget of 2017-18 had announced a target of 2.44 lakh crore rupees in loans under the Mudra Scheme (Godha & Nama, 2017). Owing to these achievements, in the opinion of George and Nalini (2018) this expansion of the financial ecosystem had been a boon for domestic cash-starved small/micro businesses. This transformational scheme is expected to expand tax-GDP ratio, which in turn will increase the number of taxpayers and thereby will increase government revenues.

Despite the slowdown of the Indian economy due to demonetization and implementation of GST, the economic growth had picked up pace. The enhanced liquidity had enabled banks to lower rate of interests and had increased lending capacity under the Mudra scheme. This increased capacity had aided in optimizing the resource capacity of small entrepreneurs and thus had increased their business productivity. In terms of lending, Public Sector Banks (PSB) have had the largest share followed by NBFC-MFIs; Private sector banks and Regional Rural Bank (RRB) were at the third and fourth places respectively. Small/Micro enterprises benefitted from this scheme which is expected to generate around 11 crore jobs nationwide (Shahid & Irshad, 2016). According to the report by Mudra, (2017), owing to Mudra loans, around 5.5 crore jobs were generated in the period of just over two years.

The MSME sector in particular had hailed the MUDRA scheme and the initial corpus of loans provided to a small section of small/micro businesses was of Rs.20000 crore and the credit guarantee corpus was of Rs.3000 crore. In the second year of the scheme, the focus shifted towards the backward districts of the nation for mainstreaming the unreachable sections of the nation and more agriculture related enterprises were involved in this scheme. This much needed financial assistance had been a game changer for the sector in terms of creating employment opportunities. One direct job created under the Shishu scheme had created 0.25 indirect jobs, one direct job created under the Kishore scheme had led to the creation of one indirect job, and one direct job under the Tarun Scheme had created 2 indirect jobs, around 1.67 crore indirect jobs were created in the first two

years of the scheme's implementation (Mahajan, 2018; Mudra, 2017).

CONCLUSIONS

The Prime Minister Mudra scheme is a flagship scheme of present Indian Government, aimed at promoting the MSME sector. It focuses on generating employment and overall welfare of the backward classes in India. This study has aided in gaining a better understanding of the MUDRA scheme, which was launched by the Central government of India. The study discussed the manner of the scheme's contribution in lessening the challenges faced by the various Non-Corporate micro/small businesses. This study found the benefits of the scheme that includes support to new-entrepreneurs, financial services in remote areas, nominal interest rates minimum risk facility credit guarantee. Further, the challenges that were found to be emerging that are to be tackled by the government in terms of the implementation of the scheme have been discussed. These identified challenges are creating awareness, poor grievance redressal, high NPA level, bureaucratic hurdles, discouraging shadow banking and other such financial challenges.

The Mudra scheme is launched with the purpose of providing better financial services for the small/micro business in the country, in order to promote self-employment, entrepreneurship, increase job-opportunity as well as add to the GDP of the nation. The main strength of this scheme is that it provides loans at nominal interest rates, which are lower than the rates at which banks provides loans. The loan application is hassle free, does not require any guarantee or collateral, and the government makes a credit guarantee for the undertaken loan. By bearing the risks associated with the loan, the borrower goes debt-free in case of failure. Another strength of this scheme found in the present study is that it facilitates in providing much-needed financial assistance for empowering underprivileged sections of the society— it provides technological assistance, financial education, business analysis, skill development, filling knowledge gaps, policy advocacy, infrastructure, information mismatch, market development and such. In addition to this, the Mudra scheme has made noteworthy incorporation and inclusion of various financial institutions to help and empower small/micro businesses.

The government is facing a lot of criticism on its inability to provide statistical data on job availability and unemployment in the country as well as on creation of jobs on a larger scale under the Prime Minister Mudra scheme. Another criticism faced is the escalating problem of NPA faced by numerous banks in the present time, as are the loans provided under the

Mudra scheme. The corruption levels associated with this scheme and the failure of the government to rein it in is another criticism.

Though all these challenges and criticisms are associated with the scheme, yet the contributions of this scheme in the development of the Indian economy have been noteworthy. This scheme has provided loans to nearly 12 crore applicants and a majority of the loans were provided to minorities, backward sections of the society, women entrepreneurs, and people residing in remote areas across the country. This scheme has enhanced financial inclusion that had widened the tax-net and has also improved revenues for the government. Additionally, in the past three years, around 5.5 crores of formal/informal jobs have been created by the MSME sector as an outcome of this scheme. Thus, it can be concluded that as the nation stands on the threshold of becoming the world's largest growing economy, the small and micro enterprise sectors can act as game changers. The Prime Minister Mudra scheme is a promising step undertaken by the government in the direction of promoting entrepreneurship and self-employment in the country, which is more likely to produce more jobs and contribute to the overall economic development of the nation.

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