2022

Annual Journal
Department of Economics
Lady Shri Ram College for Women

Ecolloquial 2022

Faculty's Note

This journal is a platform for our students to analyse important current economic issues, both national and international and express their views for wider dissemination. I would like to begin by congratulating the Editorial team for their dedication and hard work in the timely publication of our academic journal Ecolloquial 2022.

As always, the journal covers a wide spectrum of topics—from Green Finance to Instagram Infographics—which impact us in multifarious ways. A novel feature of this issue is the conversion of 'Schools of Thought' into an article writing competition. We received double the number of entries this year as compared to previous editions and this would not have been possible without the consolidated efforts of our students.

Many thanks to Dr Joyeeta Gupta, Miss Yamini Aiyar and Miss Lavanya Garg for sparing their valuable time for us. I hope the journal provides an enriching experience for the readers.

Himani Choudhary
Kapil Dev Yadav

Editor's Note

It is with determined effort and perseverance that the editorial board has put together this year's issue of the Annual Journal of Economics - Ecolloquial 2022. The Annual Journal is a reflective space for students to opine and juxtapose their myriad perspectives on a plethora of economic themes encompassing politics, cryptocurrency, finance, cybersecurity, gender equality, skill development and even niche territories like coalition governments and Feminist Economics.

We sincerely hope that the following pages help you deconstruct complex ideas that you may want to build upon in the years to come. This issue of the journal not only mirrors the research ventures that have been undertaken by students of the department but also attempts to cover a range of economic concepts that are relevant to the present day and age. The journal has attempted to capture the themes of the capricious global economic scenario with each paper's writing style being idiosyncratic to the author. While one paper emphasises statistical techniques, another is a compilation of various case studies and personal narratives.

The journal also features winning entries from the 'Schools of Thought' article writing competition, which further seeks to ameliorate quintessential economic quandaries from the vantage point of diverse social sciences. This year's journal features three different interviews since we believe that any kind of academic engagement that the students indulge in is incomplete without a perspective from economists who influence policy and intellectual discourse in a significant manner. The Editorial Board was overwhelmed at the response received this year, especially from the students beginning their journey in college.

Lastly and more importantly we hope that this journal serves as a springboard for young students to pursue further research and study in the multifaceted field of economics. Research at an undergraduate level is only a humble beginning and we hope that this journal proves to be an encouraging facilitator for future researchers and intellectuals.

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RESEARCH PAPERS

THE COST OF FARM SUPPORT- A CASE FOR LEGALIZING MSP IN INDIA

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ABSTRACT

As India slips down on the Global Hunger Index to the 106th position, we are reminded of the need for adequate food grains to feed the entire population, supported by sufficient production and a robust procurement mechanism. We cannot undermine the role MSP has played in defining the course of agricultural production in the country. This paper seeks to establish that MSP is not intended to maximize farm income but to encourage farmers to grow such designated crops while giving them reasonable profit to adequately invest in agriculture, which would increase productivity and boost crop diversification. Not all farm produce is sold at MSP; a significant quantity is sold at a price below it. Legalizing MSP would ensure that farmers are not exploited through unfair trade practices and their dependence on govt. procurement will also be lessened.

This paper provides an account of MSP, its estimation and impact on farm produce, and the need for legalizing it through an analysis of nationally representative agricultural data published by FCI, NSSO, and the Ministry of Agriculture and Farmers Welfare.

JEL Classification Codes: Q02, Q11, Q13, Q18, O13.

Keywords: Agricultural Commodity, MSP, Agricultural Marketing, Commodity prices, Farm Subsidy, Food Production.

I. INTRODUCTION

The entire episode of passing and subsequently repealing the three contentious farm laws has highlighted the issue of MSP and its relevance in Indian agriculture and economy. More than half of the Indian population ekes out a livelihood from agriculture. Attempts at minimizing government intervention in the purchase of marketable surplus, and a possible withdrawal of MSP in the long run, stoked massive protests by farmers who apprehended a fall in their incomes in the absence of a government-regulated price and procurement mechanism for their produce. Minimum Support Price, better known as MSP, is a sort of market intervention by the government that acts as a safety net for the farmers to ensure them against any plummet in agricultural/farm prices. It is a minimum guarantee price, introduced way back during the Green Revolution of the 1960s to incentivize and boost production, protect farm income from volatility in prices, to provide farmers such remuneration as to encourage investment in agriculture; to augment productivity, prevent and mitigate large-scale famines and maintain buffer stocks.

Agriculture is a state subject and the entire agricultural machinery is in the hands of states, which can advise farmers on the correct choice of crop rotation, the use of appropriate right input quantity, water supply for irrigation, and APMC (Agricultural Produce Market Committee) markets. In India, MSP is fixed on the recommendations of the Commission for Agricultural Costs and Prices (CACP), for a total of 23 crops- 14 Kharif crops, 6 Rabi crops and 2 commercial crops, along with Fair and Remunerative Price (FRP) for sugarcane- based on the pre-fixed formulae, taking into consideration the input costs and a fair remuneration above that to the farmers. The M.S. Swaminathan Report (2004-06) considers various factors in determining MSP, including: Production Cost, Inter-Output Price Parity, Inter-Crop Price Parity, International Price Situation, Market forces of Demand and Supply, Consumer and Environmental Implications, Inflation and so on.

II. OBJECTIVES

This paper seeks to analyze the need for a government-regulated procurement system, albeit with private participation, but assuring a minimum price for farm produce, to ensure that the crop-producers are not forced to sell their produce at an unreasonably low price due to price fluctuations that may not be necessarily bonafide.
Apprehension among farmers as regards price volatility is veritable and genuine, taking into consideration that except paddy and wheat, which are procured by the government in significant ratios, all other crops are riddled with price fluctuations, which raises questions over stable farm incomes. Hence the need for a robust protection mechanism for minimum farm-incomes. Legalizing MSP while encouraging private participation simultaneously is the way forward.

III. LITERATURE REVIEW

Dr. Sukhpal Singh, Principal Economist at PAU, Ludhiana, argues that MSP is the bare minimum for saving the peasantry from destitution and devastation, and not merely a government sop. It is an insurance against the anarchy of the future. This viewpoint has also been substantiated as-

- MSP is now viewed as a form of market intervention on the part of the State and also as one of the supportive measures to the agricultural producers. (Kamat and Kamat, 2007)
- Production of wheat and rice was multiplied because of a rise in MSP by the Government. (Iqbal and Merwe, 2010)

- Lack of an assured market value is one factor in the poor performance of pulses than food grains in India. (Reddy, 2004 and Kumbhar, 2010)

Few research papers in the past have argued that since MSP is not a blueprint for high farm income, and is availed of by a minuscule percentage of farmers, it is unreasonable to continue with, and worse, legalize it. However, this paper seeks to establish that MSP is not intended to maximise farm income, but as a remunerative price so as to encourage farmers to grow such designated crops while giving them reasonable profit to make adequate investments in agriculture, which, in turn, would increase productivity and boost crop diversification. Not all farm produce is sold at MSP; a significant quantity is sold at a price below it. Legalizing MSP would ensure that farmers are not exploited through unfair trade practices and their dependence on government. procurement for ensuring their own sustainability will also be lessened.

IV. ESTIMATION OF MSP AND PROCUREMENT OF PRODUCE

Announced at the beginning of each cropping season, MSP is determined by the CACP through projections on State-wise and Crop specific cost of production based on various factors including:

- Input costs, Market costs of products, and changes therein.
- Demand-Supply situation, both domestic and international
- Cultivation cost per hectare
- Cost of production (per quintal) and marketing agro-products
- General price levels and consumer price index
- Macro-economic variables reflective of monetary and fiscal factors.

Sugarcane pricing, however, is governed by statutory provisions of Sugarcane (Control) Order, 1966. CACP is thus directed to pay due regard to the statutory factors listed in this Order for the estimation of MSP for sugarcane.
Determination of Cost of Production, as per the aforementioned Swaminathan Committee, makes use of three variables

- A2: This includes all the direct expenses, cash or kind, incurred by the farmer on purchase of seeds, machinery, fertilizers and pesticides, hiring labour, irrigation, etc.

- A2 + FL: This adds the imputed value of unpaid family labour to A2.

- C2: The Comprehensive Cost of production, it adds up the value of interest and rent foregone on farmer owned land and machinery to A2+FL.

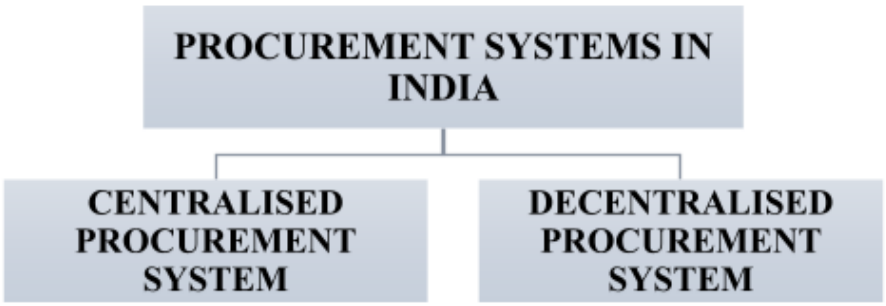
The ideal formula devised for calculation of MSP is:

MSP = C2 + (50% of C2)

The 2018-19 Budget announced that MSP would henceforth be fastened at 1½ times the crop-production costs as a "pre-determined principle". Thus, the CACP was now tasked with estimation of production costs for a season and recommend the MSP using the 1.5-times formula. There was no specific mention of the cost on which the 1.5-times formula had to be applied, i.e., A2, A2+FL or C2.
The Price Policy for Kharif Crops: The Marketing Season 2018-19 Report of CACP, however, stated that the 1.5-times formula had to be applied only on the A2+FL Costs. Thus, the new formula for calculation of MSP became:

MSP = (1.5). (A2+FL)

This call, however, didn't charm farmers, who have demanded the estimation of MSP on the basis of C2 costs rather than A2+FL costs. In response, the government expressed in its press release of March 2020 that, "From time to time, some farmers and farmers' organizations have been agitating and making certain demands like increase in MSP for agricultural crops on the idea of the C2 system. Cost of production is one in all the necessary factors in the determination of MSP. While recommending its price policy, the CACP considers all costs in a comprehensive manner that relies on the methodology suggested by Expert Committees from time to time."
There are two main Procurement Systems in India- Centralized and Decentralized.



1) CENTRALIZED PROCUREMENT SYSTEM:

Under this system, food grain procurement is handled directly by either FCI (Food Cooperation of India) or by SGAs (State Government Agency). The procurement done by SGAs is handed over to FCI for storage and subsequent issue against GOI allocations in the same State or movement of surplus stocks to other States.

2) DECENTRALIZED PROCUREMENT SYSTEM:

Under this system, the State Government or its Agencies are tasked with the procurement, storage and distribution of coarse grains, rice or wheat, against GOI allocations. The surplus is handed over to FCI, under the central pool. All expenses incurred by the State under DCP are reimbursed by the Central Government as per stated rules and principles. The Central Government, however, keeps a check on the quality of food grains being procured, and ensures smooth procurement operations.

V. METHODOLOGY

The paper attempts to give a concise view of the current level of procurement of various crops at MSP by the government, the effect of MSP on farm income, and the expenditure incurred by the government on procuring food grains at MSP, with the use of Quantitative data. The secondary data analyzed in the paper has been collected from government publications of various government agencies and ministries, particularly FCI, Ministry of Agriculture and Farmers Welfare, Ministry of Consumer Affairs, Food and Public Distribution, and Ministry of Statistics and Programme Implementation.

The absolute number of India's agricultural workforce increased to 263.1 million (118.8 million cultivators and 144.3 million agricultural labourers) in 2011 (Census, 2011). It has now become inevitable to protect the farm incomes of such a large share of population, which is in a precarious situation due to volatility in prices. The following table shows the changes in MSP for selected crops, from the year 2018-19 to 2021-22.

Table 1

	MSP (2018-19)	MSP (2019-20)	MSP (2020-21)	MSP (2021-22)
PADDY	1750	1815	1868	1940
WHEAT	1840	1925	1975	2015
JOWAR	2430	2550	2620	2738
BAJRA	1950	2000	2150	2250
MAISE	1700	1760	1850	1870
BARLEY	1440	1525	1600	1635
RAGI	2897	3150	3295	2277

*Source of data- Food Corporation of India. * MSP is Rupees per quintal.*

Table 2

Crop	Production (2020-21) (In Lakh Metric tonnes)	Procurement at MSP (2020-21) (In Lakh Metric tonnes)	Procurement %
SUGARCANE	3992.5	2984.24	74.75
RICE	1222.7	600.78	49.14
WHEAT	1095.2	389.92	39.58
CHANA	119.9	6.3	5.25
GROUNDNUT	102.1	2.84	2.78
SUNFLOWER	2.3	0.04	1.69
MUSTARD	101.2	0	0

*Source of data: FCI, Nafed, Ministry of Agriculture and Farmers Welfare, NFCSF. *Figures are for agricultural year 2020-21 (June-July)*

Table-1: Trends in MSP* for various crops, for the time period 2018-2022.

Tables 2 shows the production levels of selected crops for the year 2020-21 and quantity actually procured at MSP, both as an absolute number (Lakh Metric Tonnes) and as a percentage of total production.

Table 3

Rank	Top-7 States	Procurement at MSP (in Lakh tonnes)	Share in overall rice procurement* (%)
1	PUNJAB	135.89	23
2	TELANGANA	94.53	16
3	ANDHRA PRADESH	56.66	9
4	ODISHA	52.58	9
5	CHHATTISGARH	46.73	8
6	UP	44.78	7
7	HARYANA	37.89	6

*Source: FCI. * Overall rice procurement 2020-21 = 600.78 Lakh Tonnes, Percentage values are rounded off.*

Table 4

Rank	Top-7 States	Procurement at MSP (in Lakh tonnes)	Share in overall wheat procurement* (%)
1	MP	129.42	33%
2	PUNJAB	127.14	33%
3	HARYANA	74.00	19%
4	UP	35.77	9%
5	RAJASTHAN	22.25	6%

*Source: FCI. * Overall wheat procurement 2020-21 = 389.92 Lakh Tonnes, Percentage values are rounded off.*

Tables 3 and 4 show the major producers of rice and wheat for the agricultural year 2020-21, quantity procured at MSP by these states, and their share in the overall rice/wheat procurement of the nation.

The following table gives a straightforward account of the extent of crop sale at MSP, and the degree of awareness of procurement agencies among Agricultural Households.

Crop Name	Wheat (Rabi)	Paddy (Kharif)
% AHs producing the crop	41.2	53.2
%Crop-producing AHs reporting sale of their produce.	50.8	52.6
% AHs aware of MSP	37.1	40.7
% AHs reporting sale of produce at MSP	9.7	14.5
% Output sold at MSP	20.8	23.7

Table-5: The role played and popularity of MSP among Wheat/Rice producing AHs**

*Source- NSS REPORT NO. 587- Situation Assessment of Agricultural Households and Land and Livestock Holdings of Households in Rural India NSO 77th Round 2021, Ministry of Statistics and Programme Implementation, GOI. ** AHs- Agricultural Households*

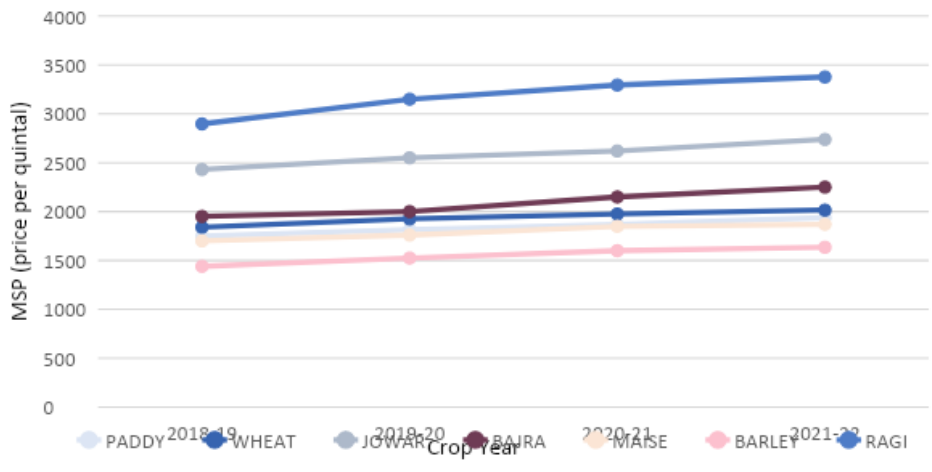
In addition to this data, the estimated Marketed Surplus Ratio for different crops is as follows:

Crop Name	Marketed Surplus Ratio (in %)
Cotton, Jute, Soyabean, Sunflower	>95
Pulses	90
Sugarcane	85
Paddy	80
Wheat	75
Bajra, Jowar	65-70
Ragi	<50

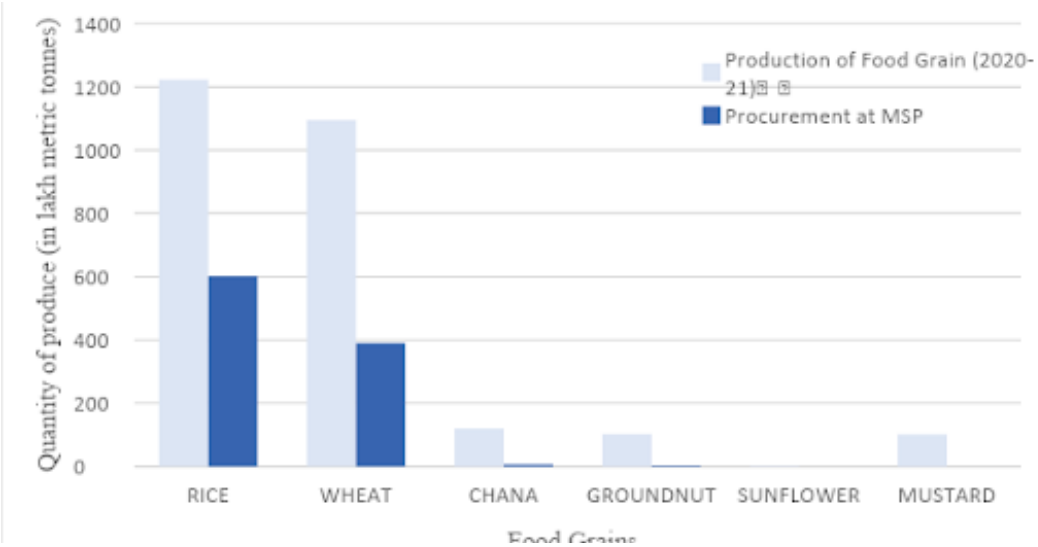
VI. ANALYSIS OF DATA

The data provided in this paper highlights key issues in the MSP mechanism in India. To begin with, the following graph depicts the trends in MSP over the years for selected few crops. Clearly, there has been an increase in MSP over the years for these crops.

Fig.1 Trends in MSP (rupees per quintal): 2018-2022

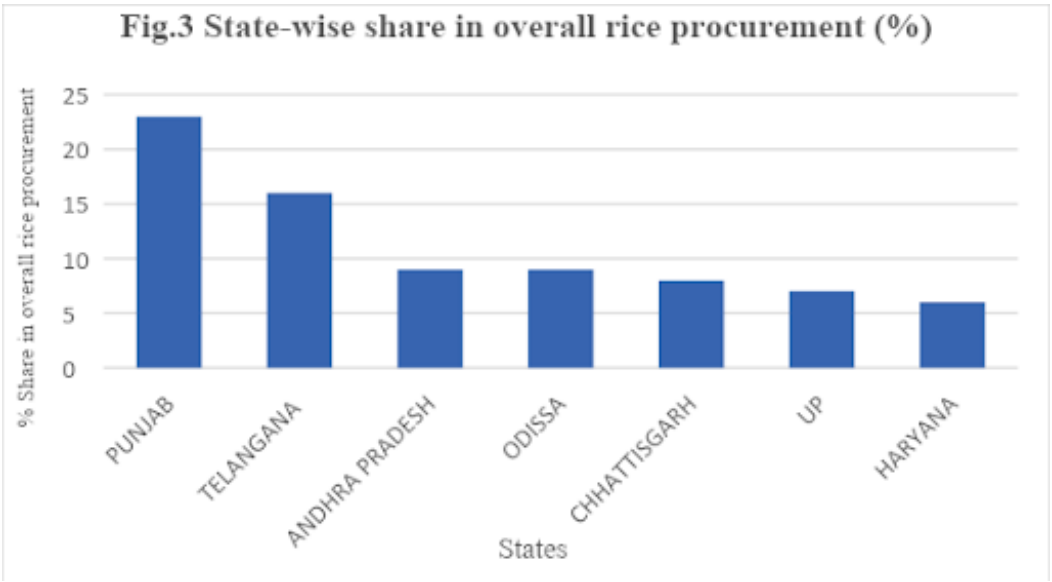


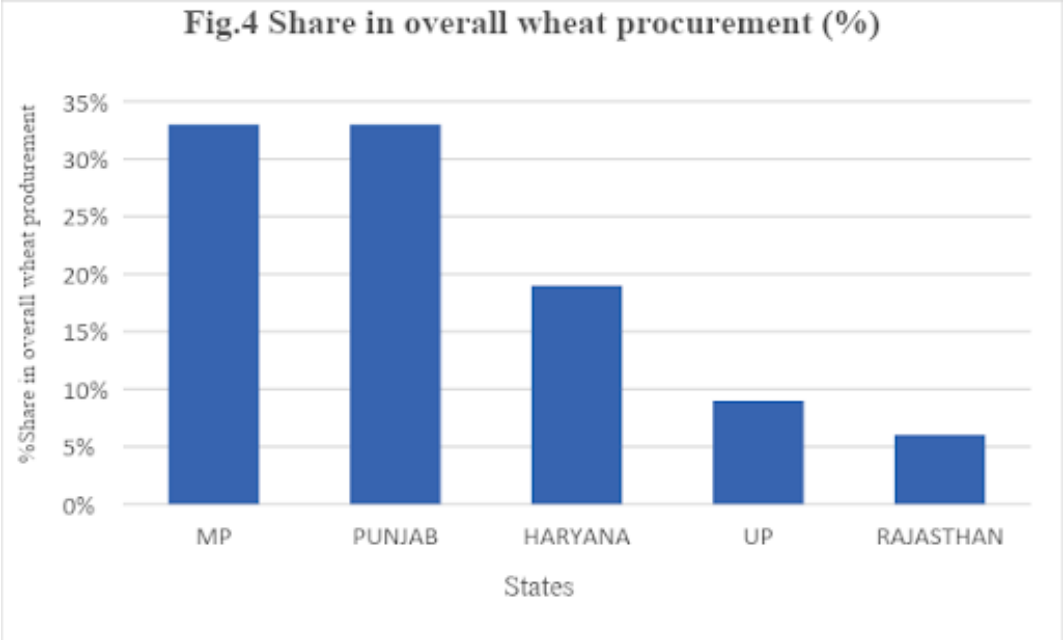
Next, Figure 2 sums up the production and procurement levels of various crops for the year 2020-21.



Even though MSP is declared for a total of 23 crops, an increase in the production of a crop is witnessed only when it is substantially procured by the government. Had MSP been legalized, the cropping pattern would not have shifted in favour of wheat and rice, to the detriment of other essentials like oilseeds and pulses.

Furthermore, the following charts (Figure 3 and 4) reflect the state-wise share in the overall MSP procurement of two main crops- rice and wheat. In case of rice, Punjab leads the way, followed by Telangana, Andhra Pradesh, and others. As of wheat, Madhya Pradesh tops the list, followed by Punjab, Haryana, and the rest.





Most importantly, data showing the awareness about and utility of MSP in the Indian scenario is given in Table-5. For the main crops of wheat and rice, it is clear that out of the sample of agricultural households 53.2% produced rice and out of these, 52.6% actually sold their produce. For wheat, these values are 41.2% and 50.8% respectively. 37.1% of wheat and 40.7% of rice producing agricultural households were actually aware of the MSP procurement mechanisms. And out of those who sold their produce, the share of households reporting sale of produce at MSP was 9.7% and 14.5% for wheat and rice respectively.

VII. FINDINGS AND OBSERVATIONS

India's food-grain procurement mechanism is massive. The procurement process and overall stock management are primarily concerned with wheat and rice. The benefits accruing from MSP are also largely confined to the wheat and rice producing farmers, in states like Punjab, Madhya Pradesh, Haryana, Telangana, UP and Andhra Pradesh. MSP has helped in increasing the production of wheat and rice manifolds. Other crops like oilseeds, pulses have taken a backseat due to lack of assured procurement at remunerative prices. This reflects the significance of assured procurement at MSP. Those who undermine the importance of assured procurement at MSP need to reflect on the following: -

Although critics argue that only 6% of all farmers in India avail of MSP (NSO, 2013 Data), yet this is a misnomer. All farmers do not sell their produce, i.e., the entire food-grain output of the nation is not sold in the market, as is evident from the aforementioned Marketed Surplus Ratios of various crops. Thus, only marketed surplus can be actually procured at MSP. From the data provided in Table-5 we observe that while 53.2% of the sample agricultural households produced rice, 52.6% of this share actually sold their produce. For the wheat producing households, only 50.8% reported marketed surplus. Thus, in reality, a greater share of farmers benefit from MSP than what is actually reported.

The entire marketed surplus is not sold at MSP. As per Table-5, out of those agricultural households who sold their produce, the share of those reporting sale of produce at MSP was 9.7% and 14.5% for wheat and rice respectively. At a glance, one might misinterpret these figures and conjecture that MSP does not hold an important place in Agriculture. This, however, is a false notion. A study of the remaining 90.3% wheat producing and 85.5% rice producing agricultural households revealed that only a small proportion of them claimed to have got a free-market price better than MSP for their produce. This implies that the majority of them got a lower price for their produce. This is true for other crops as well. The reason why MSP appears to benefit only a small proportion of farmers is that either the crop produced does not come under MSP, or there is a lack of an effective government procurement infrastructure and mechanism for MSP. Both ways, farmers can't avail of MSP.

Presently the onus of assured remunerative returns to the farmers is primarily on the Government procurement infrastructure. However, if the MSP is legalized, the entire private procurement infrastructure would become available at par with that of the Govt. The government will no longer bear the burden of procuring the entire food grain output that comes to the market just to ensure that all farmers get the bare minimum for their crops. Farmers will no longer incur losses even if they have to sell their produce to private players. Dependence on the government for the sale of crops will also reduce substantially. This will also reduce the burden on the state storage infrastructures, prevent further piling up of tonnes of procured crops, and reduce the chances of rotting of surplus grains.

The claim of the critics is that legalizing MSP will entail a financial burden amounting to over Rs 17 lakh crore on the Govt. for all the 23 crops falling under it. However, this is a bogus claim, as has been reasoned out in the aforementioned points. As per Dr. Sukhpal Singh, Principal Economist at PAU, this procurement amount estimate is faulty, and that in reality the government does not require more than Rs 9 Lakh crore even to procure every grain of the 23 crops currently under the MSP regime.

This is because farmers do not sell their entire harvest; they retain a part of the output for their own personal consumption and for seed/cattle purposes. As per reports, the official procurement expenditure of the year 2020-21 was only Rs 2.41 lakh crores, as against the total value of production, which exceeded 10 lakh crores.

The onus of paying MSP for sugarcane lies not on the government, but on sugar mills, thus further cutting down costs for the government.

VIII. CONCLUSION

The government should legalize MSP so as to ensure remunerative income to farmers irrespective of who buys it- govt. or private trader. Since no trader would be able to procure it at a price less than MSP, it will hardly impact the profitability of private trade, which in any case operates on a cost-plus basis. It will also help in crop-diversification as it will reduce the dependence of farmers on crops substantially procured by the government merely for higher, more secure income, albeit under compulsion, at times. This in turn would help in conserving our natural resources, their better utilization, and therefore, sustainability of agriculture in the long run. It will cut down direct subsidy-bill of the government, as farmers will no longer be in distress to sell their produce to the government for fear of exploitation by unscrupulous traders. This will also encourage investments for modernisation of production and storage of agricultural produce for a broad spectrum of crops.
Thus, legalizing MSP will benefit the society as a whole. It will also bring about the much-needed balance among the various agricultural crops and oilseeds, pulses, etc., will get their due share in production for meeting the emergent needs of the nation. The impact of MSP on agriculture and food grain production is significant and far-reaching. While framing any policy that entails to restrict the scope of this remunerative price directly or indirectly, such ramifications also need to be evaluated. The government or any such decision-making body should have a broad outlook and perspective while formulating such policies.

APPENDIX

Table-1: Trends in MSP* for various crops, for the time period 2018-2022.

	MSP (2018-19)	MSP (2019-20)	MSP (2020-21)	MSP (2021-22)
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RAGI	2897	3150	3295	2277

*Source of data- Food Corporation of India. * MSP is Rupees per quintal.*

Table-2: Production and procurement of food-grains at MSP, 2020-21*

Crop	Production (2020-21) (In Lakh Metric tonnes)	Procurement at MSP (2020-21) (In Lakh Metric tonnes)	Procurement %
SUGARCANE	3992.5	2984.24	74.75
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SUNFLOWER	2.3	0.04	1.69
MUSTARD	101.2	0	0

*Source of data: FCI, Nafed, Ministry of Agriculture and Farmers Welfare, NFCSF. *Figures are for agricultural year 2020-21 (June-July)*

Table-3: Major Rice Procuring States, 2020-21

Rank	Top-7 States	Procurement at MSP (in Lakh tonnes)	Share in overall rice procurement* (%)
1	PUNJAB	135.89	23
2	TELANGANA	94.53	16
3	ANDHRA PRADESH	56.66	9
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6	UP	44.78	7
7	HARYANA	37.89	6

*Source: FCI. * Overall rice procurement 2020-21 = 600.78 Lakh Tonnes, Percentage values are rounded off.*

Table-4: Major Wheat Procuring States, 2020-21

Rank	Top-7 States	Procurement at MSP (in Lakh tonnes)	Share in overall wheat procurement* (%)
1	MP	129.42	33%
2	PUNJAB	127.14	33%
3	HARYANA	74.00	19%
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Table-5: The role played and popularity of MSP among Wheat/Rice producing AHs**

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*Source- NSS REPORT NO. 587- Situation Assessment of Agricultural Households and Land and Livestock Holdings of Households in Rural India NSO 77th Round 2021, Ministry of Statistics and Programme Implementation, GOI. ** AHs- Agricultural Households*

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BLOCKCHAIN, GOVERNANCE & DEVELOPMENT

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ABSTRACT

The interest in blockchain technology has increased significantly since 2014 [1]. However, much of the limelight has been taken by cryptocurrencies, obscuring the foundational general-purpose technology: blockchain. While there exists abundant literature on bitcoin and cryptocurrency, this paper recognises a need for research & awareness about its underlying technology- Blockchain or Digital Ledger Technologies (DLT) [2], of which, cryptocurrencies are but one of the numerous use cases. Owing to its attributes that increase transparency, traceability and accountability, it is proposed that blockchain has the potential to make governance mechanisms more efficient, more resilient and less corrupt. Instead of delving into the economics of money, or economics of technology and innovations, this paper studies blockchain from the lens of new institutional economics, thereby developing a case for blockchain adoption in economic development policies.

This paper is an attempt to consolidate standalone literature in blockchain, governance efficiency and economic development, to form a coherent study on their interlinkages. This research concludes with identifying the barriers to adoption of blockchain in the Indian public sector, and offers policy recommendations for countering the same.

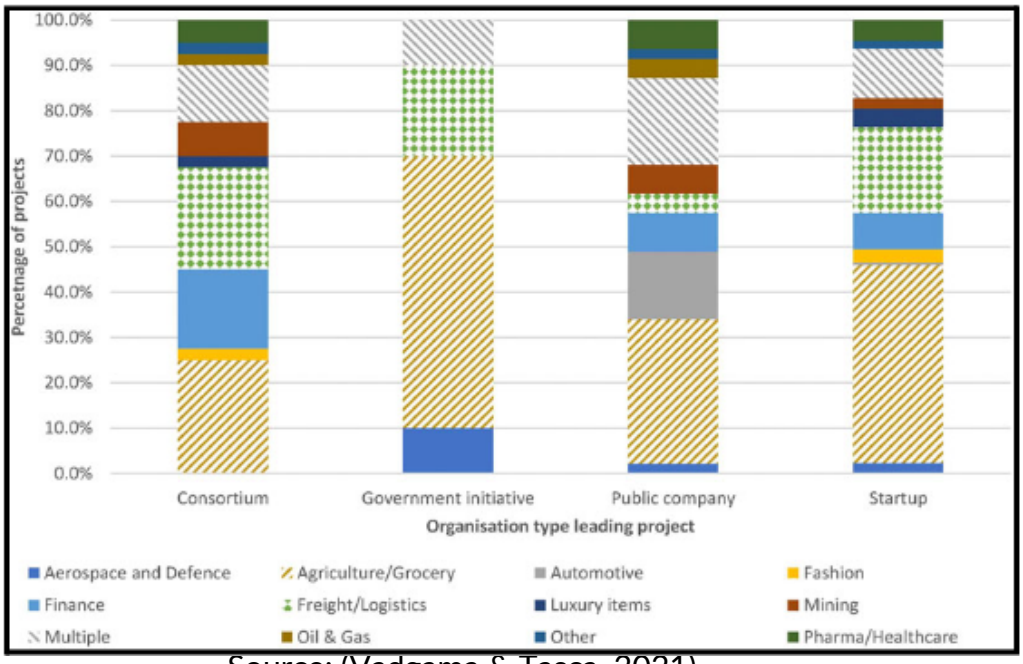
JEL Classification Codes: I38, P35, P31, P48, O0

Keywords: Blockchain, Governance, New Institutional Economics, Development

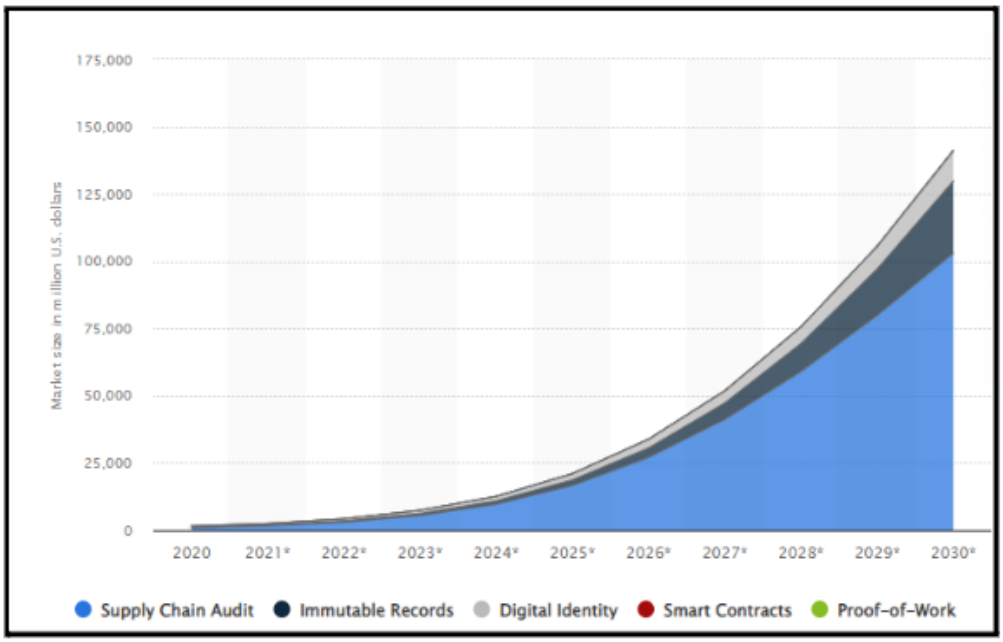
I. INTRODUCTION

What is Blockchain?

Blockchain is defined as a means of creating a secure, transparent and distributed ledger or a technology for public databases (*Blockchain Explained*, 2022). Since ledger is an accounting tool, and cryptocurrency is the most popular application, there tends to develop a rather narrow view of the technology, thereby linking it exclusively to money and monetary economics. However, other applications of blockchain in supply chain management, land registry, record keeping, identity verification, health care, etc. have been gaining traction.



Source: (Vadgama & Tasca, 2021)



Source: (Statista, 2022)

It would be superfluous to dive into the depths when there are robust resources which provide in-depth analysis of blockchain and its uses- (The Truth About Blockchain, 2019); (Davidson et al., 2016); (Javaid et al., 2021). Thus, we will confine ourselves to summarizing the key points.

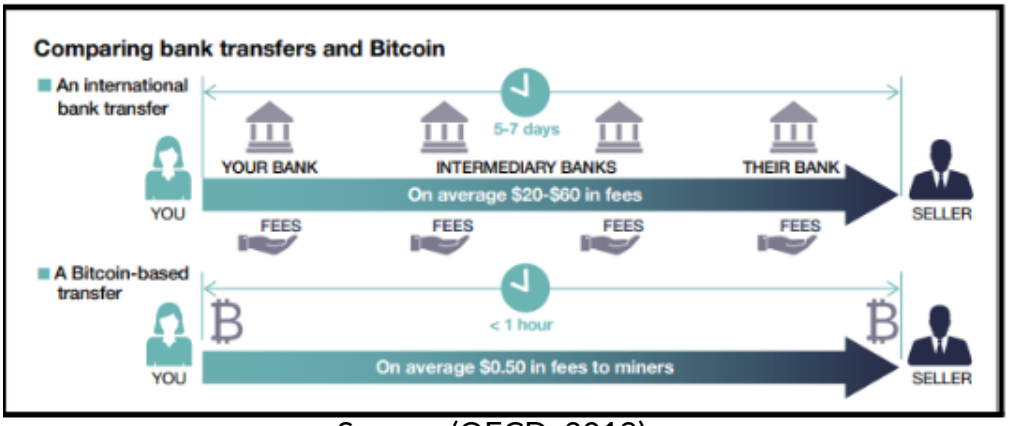
A blockchain is a decentralized, distributed, transparent and trust-less system of maintaining an immutable record of transactions in real time. This can be rather easily explained with an analogy of google documents. When a google doc. is shared with a group of people (distributive), everyone has access to it at the same time; changes can be made by anyone (decentralized) and are visible to the rest in real time (transparency). Owing to these characteristics, there is no need for a central trusted authority to oversee the transactions. This provides privacy and anonymity. Moreover, once a transaction is recorded in a chain, it can not be altered, thus safeguarding integrity of data and reducing the probability of a central-point of failure/ compromise

	P2P network	Cryptography	Consensus algorithms
P2P network	Resilience	Consensus/ Transparency	Consensus/ Transparency
Cryptography	Consensus/ Transparency	Pseudonymity	Security
Consensus algorithms	Consensus/ Transparency	Security	Immutability/ Incentives

Source: (Zambrano, 2020)

The key traits of blockchain which are at the forefront of bringing efficiency in governance are trust and reduced transaction cost.

Blockchain can be used to transfer anything of value most inexpensively. The transaction fee for transferring 849,999.99939168 Ether (which is equal to $1,129,879,499.19) is only $0.19.



Source: (OECD, 2019)

According to WEF, blockchain is expected to store around 10% of the global GDP by 2027. The blockchain market is expected to grow at a CAGR of 72.9% (2021-28), reaching a worth of $227.99Bn by 2028 (Partners, 2022). As per Blockdata, 81 of the top 100 public companies are using blockchain (as of September 2021) (Schweiger, 2021). 65 of these are actively developing blockchain solutions, while the rest are in the research phase. Blockchain can give the global economy a boost of US $1.76 trillion by 2030 (*Time for Trust: How Blockchain Will Transform Business and the Economy*, 2020).

Despite the positive sentiments on blockchain adoption, it is still a long way to completely realize the potential of this technology. Alluding to the Diffusion of Innovations theory, and in regards to the Schumpeterian Creative Disruption Theory, blockchain could be said to be at an early disruptive phase. The technology adoption model of the blockchain can be paralleled with that of TCP/IP (Transmission Control Protocol/Internet Protocol) introduced in 1972.

TCP/IP was first popularized with a single use case- email. This later transitioned to 'local private networks' being created by different companies internally, before a booming public adoption with the world wide web. It was only when the infrastructure (hardware) was in place, that disruption of traditional businesses began through substitution. For example- online news, online shopping, etc.

For blockchain, the first use-case was bitcoin which enabled bilateral financial transactions (just like email facilitated bilateral message transfer).The next step would be localisation i.e. businesses beginning to use blockchain for internal management (private ledgers), for records keeping and making transactions. DAOs and smart contracts, enabled by platforms like backfeed will be the third rung in the process-i.e. Transformation. And the final stage of this technological adoption will be substitution wherein roles of intermediaries (bankers, lawyers or regulatory authorities) for enforcing contracts will be minimized to a great extent.

The primary reason why blockchain has a lot of potential and is considered revolutionary is because it is making transactions, contracts and record keeping- a task that is at the core of all businesses, organizations and institutions in the economy- more seamless than ever.

II. LITERATURE REVIEW

To understand the economics of blockchain, we first begin by understanding the economy. An economy has two entities: organizations (firms) and institutions (market), the coordination between the two (through transactions or contracts) decides resource allocation. Adam Smith, when talking about the 'invisible hand', explained how without any (government) interventions, the market will by itself move to the most efficient allocation. This basis of classical and neoclassical economics raises the following questions- "If markets are so great with allocation, why do firms exist? Why not just organize every single transaction on the basis of the market? Why do some transactions take place in organizations while others take place in the market? (Coase, 1937)

These are precisely the same questions that Ronald Coase pondered upon as a student at the London

School of Economics. He later pioneered the field of new institutional economics built on these fundamental questions. The reason why firms exist is because organizing things on the market, engaging in contracts, finding trading partners, bargaining, negotiating and enforcing contracts is costly. Together, these costs are referred to as 'Transaction Costs'.

Today, a large part of the economic activity is based on minimizing these transaction costs. For example, a stock broker is an intermediary that reduces transaction cost of the otherwise expensive alternative which would involve the cost of finding a seller/buyer, deciding on the quantity and price of stocks to be exchanged, enforcing the deal, etc. In the same vein, the banks are cost-minimizing institutions facilitating transactions between lender and borrower, and so are courts, governments and other regulatory bodies of governance.

Transaction Costs are central to the story of blockchain. Blockchain takes the neoclassical assumption of "zero transaction cost" from blackboard economics and puts it as a possibility in the real world (at least in some domains). Coase, in his paper (Coase, 1960) explained that a zero transaction cost world will erode the existence of firms, as all possible transactions that can be made, will be made and in response, will prove the theory of externalities proposed by A.C. Pigou is unnecessary. A zero transaction cost economy will ensure efficient allocation of resources. For Coase, blockchain is the missing piece of the story of new institutional economics- where individuals, organizations and even machines are able to transact in a frictionless fashion.

Using cost and trust as two key tenets that support the proposition that there will be efficiency maximization in governance with the use of blockchain, (Zambrano, 2020) emphasizes on the role of state capacity (social, institutional and infrastructural) in developing countries for advancements in blockchain.

Further, (Berg et al., 2018) analyses blockchain as an institutional technology and develops the economics of government support to blockchain using the social welfare analysis.

(Kshetri, 2017a) and (Kshetri, 2017b) explains how blockchain can help in poverty alleviation in the Global South. This is relevant to our conceptualisation of blockchain in development as according to (Bardhan, 1996) "...poverty by any reasonable measurement is so pervasive that policies of poverty alleviation encompass practically the whole range of development policies..."

III. METHODOLOGY

The paper is built upon standalone research in blockchain, governance efficiency and economic development and analyzes these secondary sources to form a coherent study on the interlinkages of these three domains.

IV. BLOCKCHAIN & EFFICIENCY

A blockchain government is defined as the one which utilizes blockchain as a core governance instrument (Jun, 2018). Efficiency and impartiality are critical dimensions of governance. (Rothstein & Teorell, 2008). We have already seen how blockchain can increase efficiency in terms of reducing the costs associated with intermediaries. In the same vein, a blockchain government can also decrease human errors, speed up the processes and enable (automated) distribution and access of services.

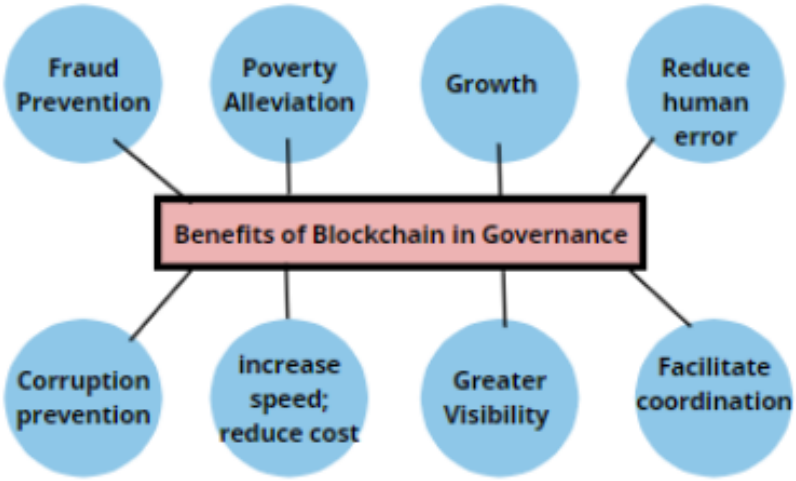
Blockchains ensure auditable, traceable and chronological data records. The confidentiality of different data can also be maintained by using a permissioned blockchain.

Table 1. The main types of blockchain segmented by permission model

			READ	WRITE	COMMIT	EXAMPLE
BLOCKCHAIN TYPES	OPEN	Public permissionless	Open to anyone	Anyone	Anyone	Bitcoin, Ethereum
		Public permissioned	Open to anyone	Authorised participants	All or subset of authorised participants	Supply chain ledger for retail brand viewable by public
	CLOSED	Consortium	Restricted to an authorised set of participants	Authorised participants	All or subset of authorised participants	Multiple banks operating a shared ledger
		Private permissioned "enterprise"	Fully private or restricted to a limited set of authorised nodes	Network operator only	Network operator only	External bank ledger shared between parent company and subsidiaries

Source: (OECD, 2019)

Given its distributive nature, blockchain allows for coordination across different levels/ departments of the government. This will ensure horizontal data and power sharing and make more coordinated and cooperative and integrated governance (Iansiti & Lakhani, 2019). The data and records can also be shared with all stakeholders, achieving greater transparency in government schemes and processes.



Source: (Own Work)

Blockchains, being a trust-less mechanism, can enhance public's trust in government processes and the guiding government institutions. The immutability and availability of records play an important role in verification and identification for targeted schemes. The same can also be employed to make voting more secure and maintain integrity of data.

V. PUBLIC SECTOR USE-CASES OF BLOCKCHAIN

Corruption and Fraud are major challenges of any government. Because of its ability to decentralize various markets and run on consensus mechanisms, various governments across the globe are experimenting with blockchain in various domains. Till 2018, there were more than 100 blockchain projects being conducted in more than 30 countries to transform government systems (Jun, 2018). In this section, we will take some examples of potential blockchain applications that can reduce corruption, increase visibility and lead to efficient governance. For each use-case, we will discuss (1) the vulnerabilities to be addressed, (2) How blockchain can be a solution, (3) examples of economies working on it.

1. GOVERNMENT CONTRACTING AND TENDERING

According to OECD and Transparency International, government contracting and tendering is most vulnerable to corruption.(WEF, 2020) Governments across the globe spend around $9.5 trillion on procuring contracts and the process is often opaque, complex and involves human discretion at various levels. 10-30% of the contract's value is said to be lost in corruption. (OECD, 2016)

Blockchains can reduce the vulnerability to corruption by

1. Tracking procurement workflows to prevent record tampering
2. Decentralizing bid evaluations to make decision making free of bias.
3. Achieving real-time transparency and auditability in contract progress.
4. Automating the processes using smart contracts.

Mexico was the first country to introduce blockchain based on Ethereum in a tender. (Rodrigo Riquelme 27 de julio de 2018, 06:53 et al., 2018) The platform uses a series of smart contracts for every phase of the contracting process, for example- registration of purchasing units, supplier registration, supplier verification, storage of information, assessing technical requirements of the proposal, etc.

Japan also adopted blockchain to secure e-government systems and process tenders. "The centralized servers behind much of today's IT systems require costly protection against cyberattacks, and the risk of data theft places limits on the types of information that can be shared with and within government" said one of the officials as per a news report. (Writer, 2017)

More recently, in 2019, Yeongdeungpo-gu district of Seoul, South Korea, successfully implemented a blockchain based proposal evaluation system which also won the Grand Prize in the "Contest for Anti-

Corruption Best Practices" (Ledger Insights, 2019).

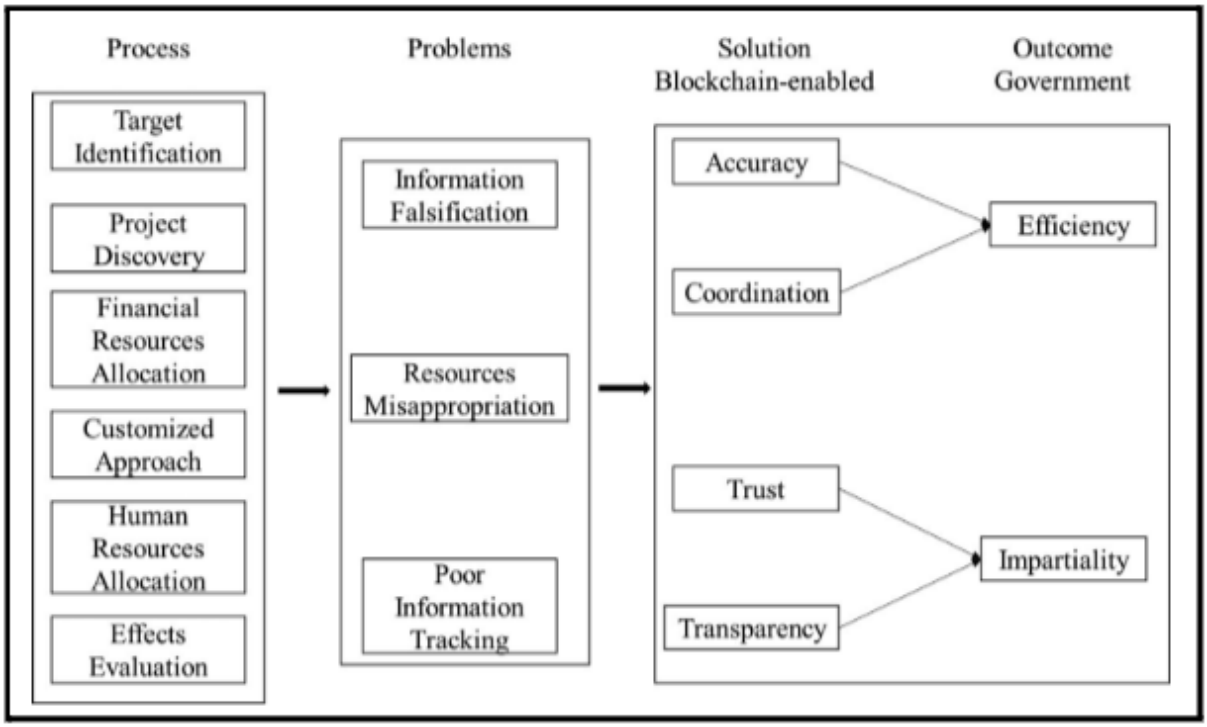
2. TARGETED POVERTY ALLEVIATION SCHEMES

The main problems with target identification and verification of potential beneficiaries in targeted poverty alleviation schemes are submission of fake reports, false data, manipulation of real income and asset transfer to avail benefits. Targeted approaches will only work efficiently when there is complete and accurate information of who the poor are. (Lavallee et al., 2010)

Blockchain can be used to store identification information of beneficiaries, their income-expenditure information and transactions, to monitor the standard of living. Blockchains can also ensure that the funds appropriated for the poor reach them in totality and the transfer of services or cash from government to the poor has no leakages.

Chinese conglomerate Alibaba's financial affiliate Ant Financials is using blockchain to track the charity and donations. Other companies like LUXARITY partnered with ConsenSys Social Impact for tracking of donations and witnessed high donor trust and transparency record. (Ventura, 2020)

The Chinese city of Guiyang was the first local government to establish implementation guidelines for targeted poverty alleviation with the use of blockchain and received positive results.



Source: (Ning et al., 2021)

3. FINANCIAL INCLUSION, BIOMETRICS, IDENTITY

There is a huge chunk of population in many countries which are unbanked i.e. they don't own bank

accounts and hence are excluded from financial services and credit. Even in countries where the number of unbanked as compared to the total population is low or decreasing, the number of inactive accounts are evident of lack of financial penetration.

Banks do not view microcredit as a profitable venture, and there are many without any address proof or identity record. According to the United Nations, about 1.5 billion people lack any proof of identity. Since these poor do not use their bank accounts frequently, nor own a credit card, it is difficult to ascertain their creditworthiness. Manual and individual evaluation of credit worthiness is an expensive and unscalable model to follow.

Countries like Ethiopia are solving these bottlenecks using blockchain. Based on Cardano blockchain, the first phase of the Ethiopian government is to provide decentralized digital IDs to 5million students across 3,500 schools. These IDs will serve as identity verification for financial services, proof of citizenship and also as a storage of academic credentials of the students. The second phase will aim at developing a trackable record of peer-to-peer transactions, so that daily transactions can be used to gain information on the credit repaying capacity of individuals.

Many startups like Humaniq are using Ethereum based blockchain platforms to create user profiles based on biometric data for people with low literacy in emerging economies. The platform uses facial and voice recognition to complete user identification within 20 seconds. Other startups like BanQu, Credits,vision, OneName, etc. are also working in the same domain to solve the problem of lack of identity proofs.

4. OTHER APPLICATIONS

Ghana, Georgia and Honduras have pioneered in applying blockchain to make land registry systems more transparent and less corrupt. Clear property rights are fundamental to the development of a country, however, in countries like Ghana, 80% of land titles lack proper documentation. (EDER, 2019)

Supply Chain management is another application area with huge blockchain potential. Companies like Walmart and Starbucks are already incorporating blockchain to introduce transparency in food chains. Under the Starbucks “bean to cup” program, a customer can track the origins of the coffee bean and even the information on where it is packaged and stored instantly using blockchain. The advantages of blockchain are also harnessed in ensuring no pilferages or thefts in pharmaceuticals. Since all medicines will be given a unique hash code, any adulteration or replacement will also be easily detectable.

Governments are exploring the use of blockchain in the defense sector for strengthening resilience, tracing parts, improving communications and increasing the efficiency of critical weapons. The USA, China and Russia are ahead in the race of blockchain in defense and intelligence.

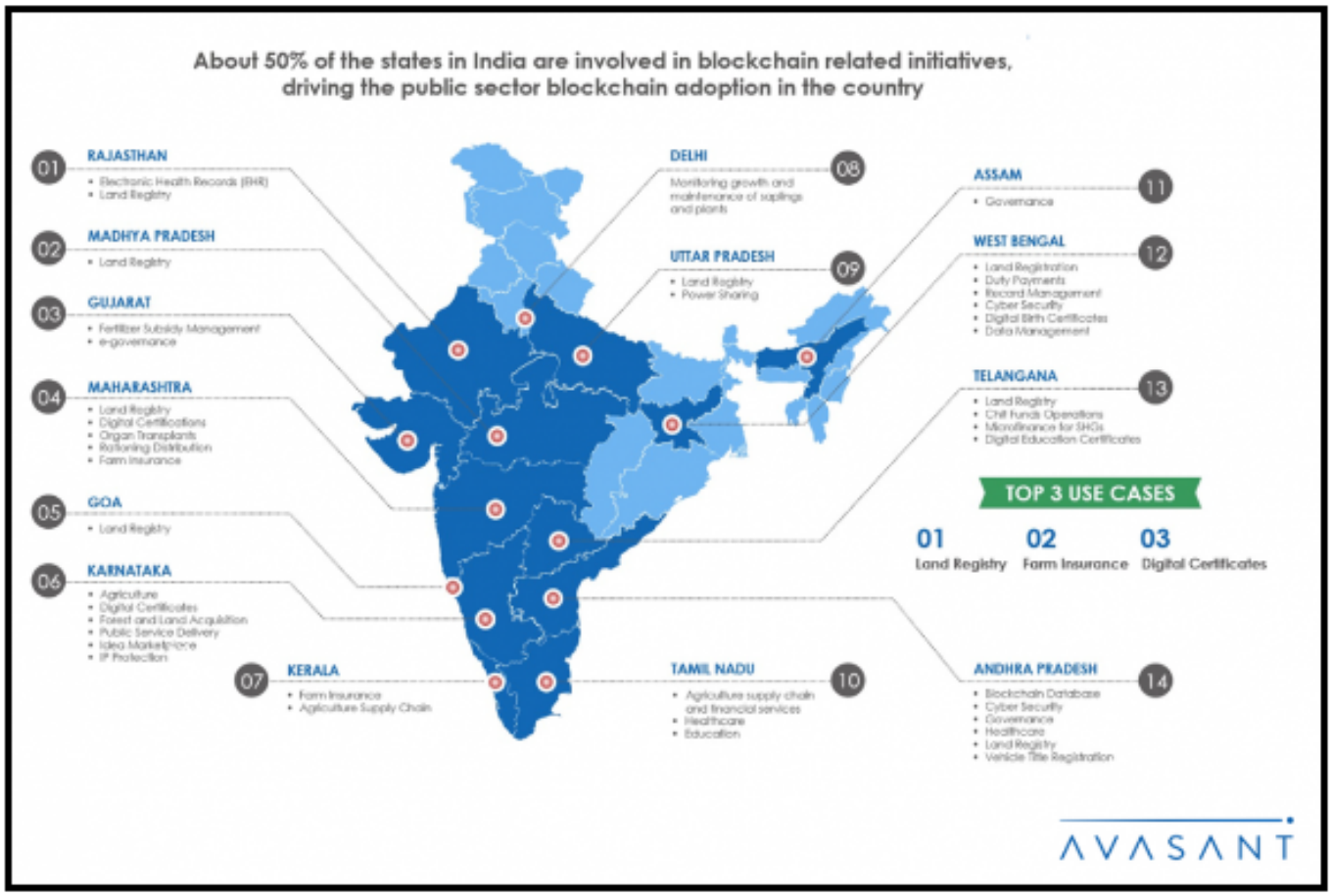
Pilots have also surfaced in e-voting using blockchain, which provides voter anonymity and prevents manipulation of results. Tsukuba, Japan has introduced blockchain digital voting, and so has Utah

county in US 2020 elections, using a voting app 'Voatz'.

VI. INDIA ON BLOCKCHAIN

India is one of the first few countries to formulate a national strategy on blockchain. About 50% of the states in India are in some stage of blockchain adoption. The most prominent use cases are land registry, farm insurance and digital certificates. However, there is still a long way to go.

India constitutes only 2% of startups working on blockchain in the world. Countries like Japan, USA, China and Russia are way ahead on research in blockchain. In 2018, a representative of FSB boasted "the Internet belongs to the Americans — but blockchain will belong to us." (Popper, 2018). Chinese president Xi Jinping is also one of the first world leaders to proclaim support for blockchain. India's investment in blockchain still lag behind a lot of countries, and India doesn't feature in the top 10 hotspots for blockchain investment.



Souce: (NASSCOM Avasant, 2019)

Source: (NASSCOM Avasant, 2019)

VII. CHALLENGES & RECOMMENDATIONS

Blockchain is still a nascent technology. Some suggest that its most revolutionary application might not even be known yet. There are some challenges that need to be considered which can slow the blockchain adoption and integration in the economy.

The first caveat is that blockchain isn't immune to the GIGO (Garbage in, Garbage Out) principle. While it is transparent, resilient and secure in recording transactions and storing data, the data entry on blockchain platforms still remains prone to error. Thus, we still need trusted institutions overseeing the entry of data. Countries where trust in government and its institutions is weak will find it difficult to mainstream blockchain. This is also a shortfall for various use cases. For example, in countries where registration of vital statistics (eg, birth, death) are weak, the blockchain might not be a panacea. Another thwarting factor is that blockchain will not remedy in cases of past disputes. For example, let's take the case of India. India has running court cases on disputes over 2.5million hectares, involving 7.7 million people. So a use-case of land registry, if implemented, will not be complete.

The second challenge is to make blockchain interoperable so that there can be integration of data across different institutions. The state must also develop its absorptive capacity to fully embrace blockchain which translates into developing robust buttressing digital infrastructure and addressing the lack of knowledge and awareness about this novel technology among the stakeholders. Ironically, stakeholders' trust plays a key role in the rate of technology adoption, even if it is for a trust-less technology like blockchain. Due to apprehensions and concerns about cryptocurrencies being linked to illegal trade, dark web, etc., the clouds of suspicion linger on blockchain as well. Thus, educating the stakeholders on the potential benefits of blockchain in governance as a separate subject than

Energy and environmental concerns are also important, thus investment in sustainable blockchains is vital. For example, Cardano, the blockchain used by Ethiopia, is 1.6 million times more energy efficient than bitcoin, making it a more feasible option for poor economies.

To end, there is also the conflict of interest problem for the government. It is important to note the distinction between government and governance. While blockchain can make strides to debilitate corruption and bring efficiency to the governance mechanisms in various domains, the corrupt politicians forming the government will not adopt blockchain with open arms. Thus, while blockchain easily has the edge in terms of cost, it would still have to compete with the centralized institutions.

After analyzing the landscape for this new age technology, this paper would conclude by offering some recommendations on blockchain strategy to India. The three prime sectors on blockchain adoption in India would be-

- Application in public distribution systems for supply chain management - As per a resort by FSI, there was a wastage of 4.11 lakh tons of food grains i.e. monetary loss of ₹1,109.82 crore in the last 4 years due to inefficient procurement and supply chain inefficiency of PDS (hindustantimes.com, 2021);
- Application in credit record and identity verification to make microfinance and insurance accessible to the poor- In India, 11.7% adults are without a bank account, moreover, 85% of the bank accounts remain inactive. India's Financial Inclusion Index is 53.9. and insurance penetration is 3.42 % & mutual funds is 1.2% which is below the global average of 6.2% and 7% respectively. (Prem, 2022)
- Application in Healthcare, as an extension of the Ayushman Bharat Digital Mission, to strengthen the digital infrastructure of India.

Some other recommendations proposed for India are-

- Encourage Public-Private Partnership projects for blockchain adoption.
- Encourage the start-up ecosystem for blockchain solutions.
- Increase research and development on discovering different use cases of blockchain
- Introduce courses on blockchain technology and train professionals in blockchain 3.0
- Assess National Strategy on Blockchain- more time-bound goals
- Developing a State-wise Blockchain strategy to ensure equal footing of all states so that a blockchain based digital divide doesn't arise in future.

VIII. CONCLUSION

Contracts and transactions are at the core of an economy; and blockchain can revolutionize how contracts are entered into and transactions are made. Blockchain is a decentralizing technology which offers a ubiquitous, secure network infrastructure, resilience, transparency and immutability. It is imperative to employ an institutional economics angle to the technology because blockchain can not only make these institutions efficient and without corruption, but also question the existence of these institutions or restructure the nature and importance of these institutions in the long run. This paper looks at government as one of the institutions and the blockchain use-cases in the public sector which underscore the socio-economic development strides. We conclude that blockchain can be an instrumental tool to make governance efficient and corruption-free, which will help in poverty alleviation and development as an outcome. The paper gives a brief of progress of blockchain adoption across the globe and also identifies the major roadblocks in the same.

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ENDNOTES

1. (Google Trends, 2004)
2. While Blockchain and DLT are often used synonymously, there exist technical points of differentiation between the two (Singh, 2022) Since the nature of this paper follows an economic and policy direction, it is sufficient to know that blockchain is a type of DLT, but not all DLTs are blockchains. For other basic terms related to blockchain refer (Blockchain Explained, 2022).

IS THE FIRST ECONOMIC ORDER TRUE? THE RELATIONSHIP BETWEEN GENDER AND ECONOMICS IN SOUTH ASIAN COUNTRIES

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ABSTRACT

The book "The first political order: How Sex Shapes Governance and National Security Worldwide" claimed that a country's politics and security is based on the first political order set between men and women within the nation-"what you do to your women, you do to your country". This paper attempts to understand whether the concept of the "first economic order" is true, that is "what you do to your women, you do to your economy". This is done by analysing the resources as well as decision-making powers allocated to the women in four South Asian countries. To achieve the objective, trends of the past 15 years have been observed between the economic equality indicator of "Per Capita Gross Domestic Product" and the gender equality indicators of "Proportion of seats held by women in parliament" and "Maternal Mortality Rate" using Linear Regression, correlation and scatter plots. The results show that three out of the four countries show a relationship between economic growth and women's political participation, and all four countries show a strong negative relationship between economic growth and a decrease in maternal mortality.

JEL Classification Codes: D63, J16, F63, C01

Keywords: Gender, South Asia, Maternal Mortality Rate, Political Participation, Linear Regression

I. INTRODUCTION

Eastin and Prakash (2013), applying the concept of the Kuznets curve to the link between Gender and Economics found that in low-income countries, rising economic growth would positively influence the arenas of gender equality and equity. This was in line with the thinking that if a country was socio-economically backward, one of the vulnerable groups within it would be its women. Several debates and arguments regarding this understanding rose, citing the gender divide existing in developed economies and how economic growth cannot be a sufficient condition for gender equality. This gave birth to several research papers and questions showing to what extent economic growth can explain gender equality (Ahang, 2014).

However, research done regarding the reverse, that is gender equality's effect on Economic growth and stability, was not so vast. Repeatedly the variables used were similar to that of women's labour force participation or literacy rates. Meaning, only variables that could directly make a tangible difference in economic growth were studied for relationships.

The renowned book "The First Political Order: How Sex Shapes Governance and National Security Worldwide" authored by Valerie M. Hudson, Donna Lee Bowen, and Perpetua Lynne Nielsen, however, flipped this narrative. Using 122 different variables, the authors demonstrated how practices of gender inequality in a country give shape to the wider stance and political order of the nation itself. Hudson explains that the "first political order" in any nation is a result of the gender-based political order, or power dynamics between genders, set in the country. The book claims that whether there is a hierarchical relationship or an equal one and even how resources are shared within a group, all ultimately demarcate the path a country chooses in terms of its politics and economy. The book carefully examined the patrilineal or fraternity syndrome which they described as the formation of a "fraternity between men " as a consequence of the "systemic subordination of women". According to their findings, "what you do to your women" or how you treat the women of the country, is how you end up treating the nation-state as well. Meaning if there is entrenched gender inequality and subordination of women in a nation, there will be outcomes like economic inequality and autocracy that the nation will have to suffer as well.

The First Political Order also used parameters that do not have immediate links to economy or politics including variables like "whether women had the power to decide who they wish to marry" or whether dowry or "bride prices" were a common practice in the country. With a p-value of 0.01, the results of the study found that among countries that encode high levels of the patrilinear syndrome, there are almost 4 times the chances of having an "autocratic, less effective and corrupt government" and 1.5 times the chance of having a lower Gross Domestic Product.

The book studied the effect of gender across governance, security as well as economics. In this paper we'll be focusing just on Gender and Economic indicators. The paper will be analysing how variables of gender equality (that seemingly do not have economic linkages) relate to the Per Capita Gross Domestic Product of the Country. A narrow focus on four South Asian Countries has been chosen that include Bangladesh, Bhutan, Pakistan, and India. These countries are especially chosen because three out of four of them highly encode the "patrilinear syndrome".

The objective of the paper is to understand whether there is "first economic order" in place as well, that is, whether the allocation of resources accorded to women or women's broader decision-making powers in the nation have any effect on the economic output of the country. The paper will also dive into how Gender and Economics have been interconnected and related in the current and past scenarios of these countries.

II. LITERATURE REVIEW

Overview of the 4 South Asian Economies and their attempts at Gender Equality with respect to the factors of Women's Political Participation as well as Maternal Health

Bangladesh:

Nearly a decade ago, Bangladesh was recognised as an economic "puzzle" because despite struggling economically with a massive population, the country was still managing to perform better than many of its competitors in development and health indexes. This condition was even more confusing considering that Bangladesh's expenditure on health and development (as a percentage of their GDP) was still significantly lower than what other countries had. The paper authored by Mahmud et al., (2013), explained that this was a result of innovative and low-cost solutions provided by the Government as well as Non-Governmental Organisations. These bodies made grassroots-level changes specifically targeting areas with socioeconomic and gender-centric inequalities.

However, the country was still a "paradox", (Chowdhury et al., 2013), because these phenomenal advances in ground-up "equity and coverage", were still balanced on the scale by cases of child and maternal malnutrition. Bangladesh currently stands at 65 in the Gender Gap Index. The Gender Gap Index given by the World Economic Forum, which utilises multiple factors including but not limited to parameters of health, education, and labour force participation, is much above the other countries in this analysis and is predicted to have an annual GDP growth rate of 6.9% in FY2023.

Bhutan:

Bhutan has significantly developed since the 1960s when it originally opened up its economy to the world and has climbed the ladder of human development steadily through the years (Asian Development Bank, 2014). Bhutan does enjoy gender equality to some extent and has equal laws for men and women. It also shows signs of both matrilinear and patrilinear societies. However, there still exists gender inequality in the country that is affecting their economic problems such as shortages of skilled labour and unemployment. One clear example of this is that girls in Bhutan are less likely to be enrolled in school according to Choden & Sarkar's study (2012). The Gross National Happiness survey administered in Bhutan also revealed some stark differences between men's and women's well-being across several domains. The widest gaps were found in the arenas of workplace, literacy, and political participation (Ura & Verma, 2022). The survey also ascertained that women in the country were at a disadvantage because of gender barriers in the form of social stigmas.

Bhutan has made considerable progress since the 1960s in terms of women's health. Through its streamlined programs, the country became one out of five in 2015 to reduce the Maternal Mortality Rate by three quarters since the 1990s, and was successful in fulfilling the Millenium Development Goal 5 through this.

Pakistan:

In the year 2021, the country's real GDP growth rebounded to 5.6% after facing contractions during the period of COVID-19. However, the economy is again facing a slight slowdown and is forecasted to have a GDP Growth rate of 4% in the Fiscal Year 2021 (Asian Development Bank). Although Pakistan holds a rank of 153 in the Gender Gap Index, it has made concentrated efforts in providing and maintaining women's participation at 33% in the political institutions and government bodies at the local level. A major interfering factor, according to Jabin and Jadoon (2009), are the country's "cultural values" that continue to discriminate between men and women. This often leads to societal norms "ascribing women to domestic roles and accord them a lower status as compared to men" (Jabin & Jadoon, 2009). Kingdon and Aslam (2011) found that there exists a clear bias for spending on male students, especially in secondary and tertiary education sectors, when household expenditure in the country was studied.

A low literacy rate and high fertility rate in the scenario of Pakistan's rural economy, have resulted in women and children being the most vulnerable in the health sector (Safdar et al., 2014). Pakistan holds one of the highest Maternal Mortality Rates among the South Asian countries taken in this study and several economists have observed socioeconomic conditions as the cause of high Maternal Mortality in the country.

India:

In 2018, the World Bank published a report praising India for its steady economic growth since the 1980s and especially post-liberalisation of its economy (Gupta & Plum, 2018). The country however faced significant economic blows in the recent past, with the annual GDP growth rate of India dropping to a negative 7.252% for the first time in nearly four decades (World Bank National Accounts Data). Currently, the country is forecasted to bounce back in the Fiscal Year 2023 with a growth rate of 8% but is still grappling with issues of inflation. In the realm of Gender, India has seen some shortcomings as well. In the year 2021, India stood at place 140, much below 2018's ranking of 108. Batra et al., (2016) suggested that the entrenched gender inequality in India had massive spillover effects across organisational, political and social contexts.

Sharma et al. (2015) found growth elasticity in the relationship between economic growth and the Maternal Mortality Rate across Indian states. They observed a "1-per-cent increase in per capita net state domestic product (PCNSDP) is associated with a 0.5-per-cent decline in Maternal Mortality Rate". In terms of politics, Fadia (2015) found that women's active participation in politics, in the urban as well as rural settings, could be key to the sought-after gender "empowerment" that the nation is after.

III. **METHODOLOGY**

Research Objective: To see if Proportion of Women's seats in the National Parliment and Maternal Mortality Rate have an effect on a country's Per Capita GDP. A relation would confirm that their is a possibility of the "first economic order" existing as well.

The paper will be analysing the effect gender equality can have on economic equality using the methods of **linear regression, correlation and scatter plot graphs** in Bangladesh, Bhutan, Pakistan and India across 15 years between 2004-2018.

For the economic equality indicator, the paper will be using Per Capita Gross Domestic Product so as to relate the gender indicators with the distribution of output within a country rather than merely the total output. The indicator was also chosen as the Human Development Index utilises the same for judging economic equality within a country.

The analysis will also be using two indicators that are related to gender equality that, however, do not directly result in the economic growth of a country. These dependent variables are:

1. The proportion of seats held by women in National Parliaments

This indicator was chosen to analyse whether having women in the decision-making bodies of the nation has any relation with economic growth in the countries. A positive relationship between these two could indicate that if more decision-making powers were allocated to women, that is the economic order of decision making is equity-based between men and women, then there would be a more equitable distribution of wealth within the country.

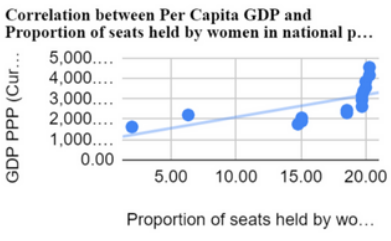
1. Maternal mortality Rate (per 100,000 live births)

World Health Organisation (WHO) explains maternal mortality as the "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any causes related to or aggravated by the pregnancy or its management but not from accidental or incidental causes".

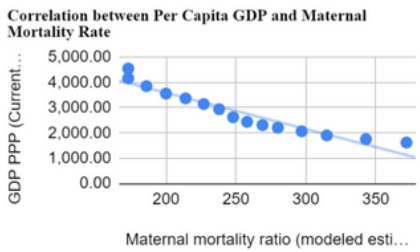
The indicator of Maternal Mortality Rate was chosen specifically because it is one of the only women's health-based indicators that has data widely available. A negative relationship between Maternal Mortality Rate and Per Capita Gross Domestic Product would indicate that if more economic resources were allocated to women's health, then there would be a more equitable distribution of wealth within the country. Meaning, that a low MMR resulting from a sufficient allocation of resources for an important aspect like health would allude to the equal economic allocations within a country.

IV. RESULTS AND DISCUSSION

1. **Bangladesh**



Scatter plot graph for correlation between Per Capita GDP and Proportion of seats held by women in national parliaments



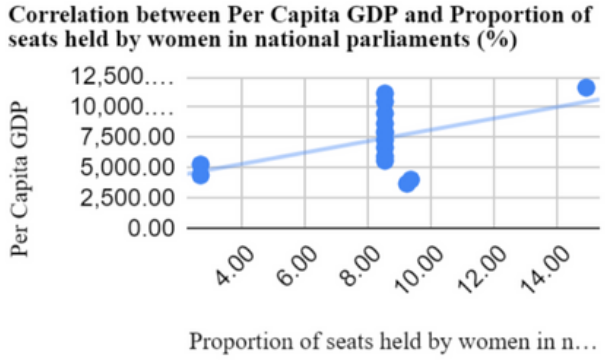
Scatter plot graph for correlation between Per Capita GDP and Maternal Mortality Rate

There exists a positive correlation of 0.661 between proportion of women's seats in parliament and Per Capita GDP as well as a negative correlation of 0.955 between the latter and Maternal Mortality Ratio. This is in line with what was observed in research regarding Bangladesh, that the economic growth has been in tandem with innovations and policies for gender equality.

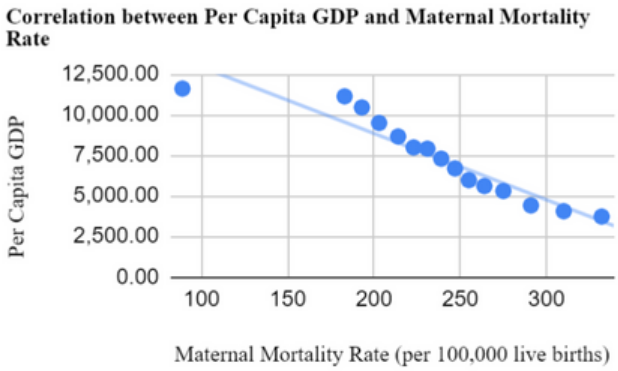
Linear regression between Per Capita GDP and Women's Political Participation-
According to the coefficients, 1% change in women's political participation led to $109.4 change in the Per Capita GDP. The R2 value shows that 43% of the variation in Per Capita GDP can be explained by Proportion of seats held by women in National Parliments (%).

Linear regression between Per Capita GDP and Maternal Mortality Rate-
According to the independent variable coefficient, 1 unit change in Maternal Mortality Rate would lead to -14.33 dollars change in the Per Capita GDP. The R2 value shows that 91% of the variation in Per Capita GDP can be explained by Proportion of seats held by women in National Parliments (%).

2. Bhutan
There exists a positive correlation of 0.511 between proportion of women's seats in parliament and Per Capita GDP as well as a negative correlation of 0.943 between the latter and Maternal Mortality Ratio. It can also be observed that allthough slowly, Bhutan has nearly doubled the seats held by women in parliament.



Scatter plot graph for correlation between Per Capita GDP and Proportion of seats held by women in national parliaments

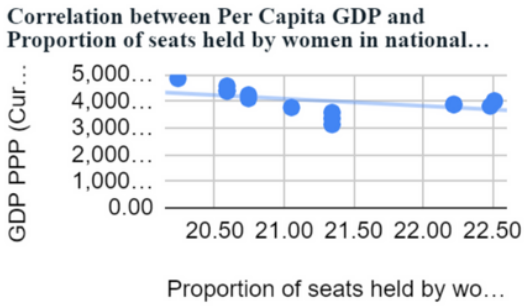


Scatter plot graph for correlation between Per Capita GDP and Maternal Mortality Rate

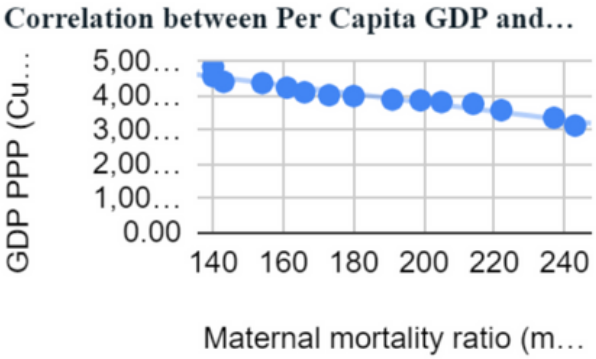
Linear regression between Per Capita GDP and Women's Political Participation-
According to the coefficients, 1% change in women's political participation led to $468.6 change in the Per Capita GDP. The R2 value shows that 26% of the variation in Per Capita GDP can be explained by Proportion of seats held by women in National Parliments (%).

Linear regression between Per Capita GDP and Maternal Mortality Rate-
According to the independent variable coefficient, 1 unit change in Maternal Mortality Rate would lead to -40.97 dollars change in the Per Capita GDP. The R2 value shows that 89% of the variation in Per Capita GDP can be explained by the Maternal Mortality Rate of the countr

3. Pakistan
There exists a negative correlation of 0.483 between proportion of women's seats in parliament and Per Capita GDP as well as a negative correlation of 0.966 between the latter and Maternal Mortality Ratio. The negative correlation between the proportion of women's seats in parliament and Per Capita GDP can to some extent be explained by the near-constant proportion of women's political participation (approximately 20%).



Scatter plot graph for correlation between Per Capita GDP and Proportion of seats held by women in national parliaments



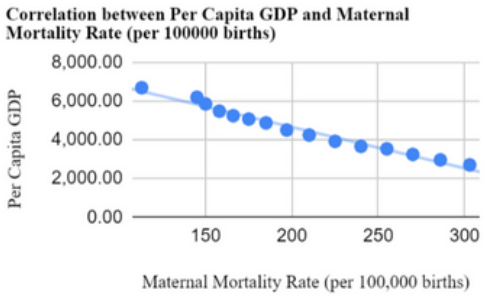
Scatter plot graph for correlation between Per Capita GDP and Maternal Mortality Rate

Linear regression between Per Capita GDP and Women's Political Participation
While the R2 dictates that 17% change in the independent variable is because of the dependent variable, the coefficient is negative. As previously states, this could be because of the near constant rate of proportion of women's seats in the national parliament (around 20%).

Linear regression between Per Capita GDP and Maternal Mortality Rate-
According to the independent variable coefficient, 1 unit change in Maternal Mortality Rate would lead to -12.701 dollars change in the Per Capita GDP. The R2 value shows that 93% of the variation in Per Capita GDP can be explained by the Maternal Mortality Rate of the country.

4. India
There exists a positive correlation of 0.887 between the proportion of women's seats in parliament and Per Capita GDP as well as a negative correlation of 0.9886 between the latter and Maternal Mortality Ratio.

Scatter plot graph for correlation between Per Capita GDP and Proportion of seats held by women in national parliaments



Scatter plot graph for correlation between Per Capita GDP and Maternal Mortality Rate

Linear regression between Per Capita GDP and Women's Political Participation-
According to the coefficients, 1% change in women's political participation led to $817.1 change in the Per Capita GDP. The R2 value shows that 78% of the variation in Per Capita GDP can be explained by Proportion of seats held by women in National Parliments (%).

Linear regression between Per Capita GDP and Maternal Mortality Rate-
According to the independent variable coefficient, 1 unit change in Maternal Mortality Rate would lead to -21.207 dollars change in the Per Capita GDP. The R2 value shows that 97% of the variation in Per Capita GDP can be explained by the Maternal Mortality Rate of the country.

The scenario of gender equality and economic equality within India-
This correlation between gender equality and economic growth also exists within Indian states. Within Niti Aayog's Sustainable Development Goals Index of 2021, administered across Indian states and union territories, there was a correlation of 0.474 between the scores given for SDG 8 (Decent Work and Economic Growth) and SDG 5 (Gender Equality).

V. LIMITATIONS AND FURTHER SCOPE OF RESEARCH

1. Recent years of 2019, 2020, and 2021 could not be studied because the countries did not have data available on the chosen parameters for these years.
2. Although the paper attempts to understand the "Economic Order" through the definition of gender order and equality used by the book "The First Political Order", the analysis has not used variables regarding equality, equity, or justice accorded to genders other than the two binary ones of men and women. This paper aims to start the discourse around the gender spectrum and further open it to a broader discussion.
3. Only one variable each with respect to decision-making powers and gender based health equality have been studied. Further researchers are encouraged to study more variables and their impact on economic progress.

VI. CONCLUSION

Carrying the discussion forward from the book "The first political order", this paper aimed to understand the relationship between Gender and Economics. Through this study, we examined how the allocation of resources accorded to women or women's broader decision-making powers in the nation affects the economic output of the country. In the case of all the countries chosen- India, Pakistan, Bangladesh, and Bhutan the findings have reiterated the fact that how a nation treats its women determines the extent of its economic progress. For all the chosen countries there existed a negative relationship between maternal mortality rate and per capita GDP. This implies how a better allocation of resources to maternal care can actually lead to economic growth and prosperity. For all the chosen countries except Pakistan, there exists a positive relationship between women's political participation (measured in terms of seats held in the parliament) and per capita GDP. This points to the fact that greater and equitable involvement of women in decision-making and politics can help form better policies and make better decisions with regards to economic equality.

It is also interesting to note that the **"first economic order" hold true even within India**, with states showing a positive correlation between gender equality and economic equality.

Overall, a strong link between gender equality and economic equality could be established which prompts further research, investigation and investment into the means of uplifting women through better allocation of resources and decision making powers.

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ANALYZING GREEN FINANCE THROUGH A MICROECONOMIC LENS

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ABSTRACT

With global warming and climate change threatening the world economy, several nations have turned to 'green finance' - an environmentally conscious alternative to traditional investment avenues.
This paper analyses an important Green Finance instrument - Climate Bonds from an industry level perspective.
A multiple linear regression model has been used to predict the financial returns of climate bonds using inputs like interest rate, inflation, and GDP growth. Correlation analysis was used to empirically prove that increasing investment in green finance has brought down the prices of renewable sources of energy, thus promoting sustainable development.

JEL Classification Codes: D00, Q54, E44, G12, C3

Keywords: Green Finance, Sustainable Investing, Climate Bonds, Multiple Regression

I. INTRODUCTION

Around the world, most people believe that global climate change is a pressing concern. According to a survey conducted across 40 countries by the Pew Research Center, 85% of the people say it is at least a somewhat serious problem. In 22 of the 40 countries surveyed, half or more believe that global warming is a very serious challenge.
In the recently concluded Glasgow Climate Change Conference (COP 26), several key issues regarding the future of our plant were raised. An alarming trend observed was the exponential level at which carbon emissions were rising.

Failure to Achieve Emission Target by Nations

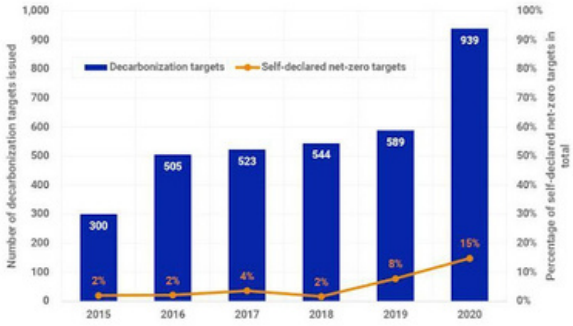


Exhibit 1 (Source: Morgan Stanley Capital International)

As a result, global policymakers are in consensus for introducing effective green legislation through fiscal and monetary policies. In this context, the growing popularity of green and sustainable financing is vindicated.

What Exactly is 'Green'?

To define green, we look at the definition given by a Professor of Political Science –
"Green refers to small incremental improvements in social practices, modern technology, and human habitats, while sustainability implies a revolution in organizing our personal and collective lives and inhabiting the planet." (Yanarella 2009)

Defining Green Finance

According to The European Union, green finance is finance which supports economic growth while simultaneously reducing pressure on the environment, keeping in mind social and corporate governance aspects.

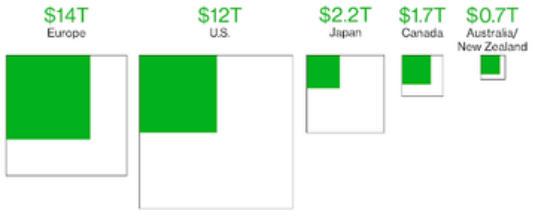


Exhibit 2 (Source: Bloomberg International)

According to research by Global Sustainable Investment Alliance, $30.7 Trillion of funds is held in green or sustainable investment avenues. Multinational corporations are also expressing interest in the space.

Investment giant Blackrock has also announced its plans to reach “net-zero emission” by 2050. Keeping in mind the $9 trillion in assets under management by the firm, this might just be the beginning of a new era of sustainable finance that will reshape the world.

Popular Green Finance Instruments

1.Climate or Green Bonds
2.Sustainability Linked Loans
3.Green Banking

CLIMATE BONDS

A. What are Climate Bonds?

Climate bonds (also called green bonds) are fixed-income financial instruments which are used to fund projects that have positive environmental or climate benefits.
They adhere to the ICMA’s Green Bond Principles, and the revenue from their issue is to be used for pre-specified sorts of projects.

B. Who Issues them?

The first climate bond was issued in 2007 by the European Investment Bank, the EU’s lending arm. A year later, the World Bank followed suit. Since then, a slew of governments and corporations have jumped into the green project financing industry.

The USA is the largest source of green bonds, led by the government-backed mortgage company Fannie Mae. State and local governments are using green bonds to pay for infrastructure projects. Corporations ranging from Apple to Pepsi and Verizon too have got in on the act.
With plans to issue over $300 billion in total over the next five years to finance sustainable developments, the EU is poised to become the largest force in the green bond market.

C. Why do Corporates Issue Climate Bonds?

- Acquire a new and alternate source of capital
- Highlights their commitment to the environment and makes for a positive marketing story
- Attracts an investor clientele that values the long-term and is mindful of the ecosystem
- Reap direct financial benefits by reducing operating costs. For e.g. – reducing energy bills through green practices
- Stock prices respond positively to the issuance of green bonds

D. Why do People Invest in Climate Bonds?

In addition to the green aspect, climate bonds also offer some financial incentives. Green bonds should be included in an investor's portfolio because they are less risky than other types of bonds. Although proceeds are raised for a declared green project, repayment is tied to the issuing company and not the success or failure of the projects. As a result, the onus of paying interest and principal rests with the issuing company and is not contingent on the project's success.

II. MULTIPLE REGRESSION MODEL

Methodology

Multiple regression is a statistical technique that can be used to analyze the relationship between a single dependent variable and several independent variables. The objective of multiple regression analysis is to use the independent variables whose values are known to predict the value of the single dependent value

Rationale for Preparing the Model

Climate Bonds, being a financial product will attract investors only if they provide a commensurate rate of return on capital.

However, bond yields are constantly changing due to their dependence on economic factors like interest rate, inflation, GDP growth and performance of the debt markets.

In this paper, we have tried to establish the relationship between the returns of climate bonds and the above-mentioned economic variables using multiple linear regression.

Dependent Variable (Y)

In our model the dependent variable is Return of Climate Bonds, which is measured by the S&P Green Bond Index. It is designed by Standard and Poor's - a reputed global credit rating agency to track the global green debt market

Independent Variables (Xi)

The dependent variable is regressed on 4 factors –

1. **S&P 500 Bond Index:** It is a market value-weighted index which seeks to measure the performance of corporate debt issued by top 500 U.S. companies by market capitalisation. It acts as a proxy for the debt market, which influences the yield of climate bonds

2. **Real Interest Rate:** It is an interest rate that has been adjusted to remove the effects of inflation to reflect the actual cost of funds to the borrower and the real yield to the lender or to an investor.

3**. Inflation (CPI**): The Consumer Price Index is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transport, food, and medical care. Changes in the CPI are used to assess price changes associated with the cost of living.

4. **Global GDP Change**: Gross domestic product is the standard measure of the value-added created through the production of goods and services. It is a good indicator of the level of growth in the world economy

Data Collection

- **Standard and Poor's (S&P)** is a creator of financial market indices.
- S&P Green Bond Index has been used to measure returns of climate bonds, while S&P 500 Bond Index acts as a representative of non-green bond instrument returns.
- Data regarding Real Interest Rate, Global CPI Inflation and Economic Growth (GDP) has been sourced from the website of the **World Bank.**
- All Figures are expressed in Percentage terms (%)

Year	S&P Green Bond Index	S&P 500 Bond Index	Real Interest Rate	Global Inflation (CPI)	World GDP Growth
2011	1.14	7.77	1.137	4.822	3.334
2012	9.15	9.17	1.307	3.725	2.698
2013	-2.23	-1.02	1.466	2.621	2.871
2014	-2.31	7.47	1.375	2.346	3.128
2015	-7.10	-0.38	2.186	1.464	3.165
2016	1.78	5.98	2.437	1.55	2.804
2017	10.30	6.05	2.176	2.192	3.387
2018	-1.82	-1.01	2.444	2.421	3.242
2019	5.84	13.62	3.436	2.187	2.562
2020	11.39	10.23	2.305	1.987	-3.405

MULTIPLE REGRESSION EQUATION

$$Y = -2.628 + 0.656\ X_1 + 0.736\ X_2 + 0.967\ X_3 - 1.055\ X_4$$

Y = S&P Green Bond Index Returns

X1 = S&P 500 Bond Index
X2 = Real Interest Rate
X3 = Global CPI Inflation
X4 = GDP Growth Rate

Interpreting the Negative Coefficient for GDP Growth

During periods of boom in the business cycle or economic development, equity markets tend to outperform the benchmarks. This in turn makes debt instruments less attractive for investors. Hence, an inverse relationship is observed between GDP growth and returns of Climate Bonds.

Green vs Non-Green (Vanilla) Bonds

Now we evaluate the difference in returns between climate and normal bonds.

Exhibit 5: Time Series Graph

An interesting point to note is that the average yield of Green Bonds is lower than that of normal bonds. This is due to higher issuance costs of climate bonds Thus, there is a premium on green bonds which investors must pay for promoting sustainable development and ESG goals.

On the flip side, the difference in returns of these two asset classes is not statistically significant. Karl Pearson's Coefficient of Correlation of 0.7085 indicates a very strong positive relationship.

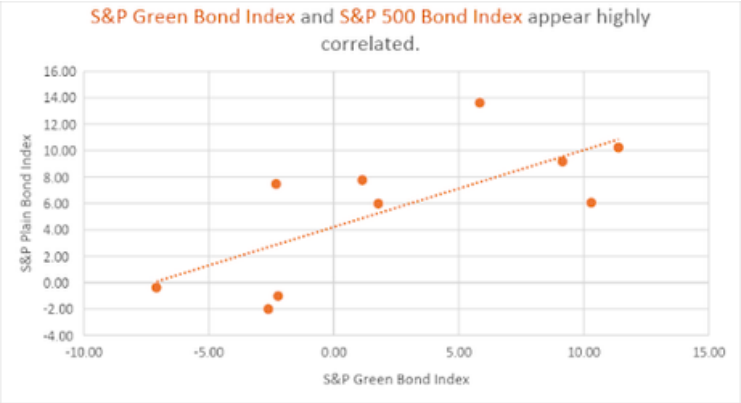


Exhibit 6: Correlation Coefficient

GREEN FINANCE AND RENEWABLE ENERGY

1. Solar Energy: It refers to the energy which is derived from the radiation from the Sun which is capable of producing heat energy, causing a variety of chemical reactions, and even generating electricity. If this energy is properly harnessed, the highly diffused source of energy has the capability to satisfy all our future energy needs.

2. Wind Energy: Wind energy or wind power is one of the fastest growing renewable sources of energy. It is generated on the simple concept of conversion of wind's kinetic energy to mechanical and electrical energy through windmills.

Over the years, a variety of reasons like technological advancements, environmental awareness, and increased investment in green finance have increased the supply of these non-conventional sources of energy.

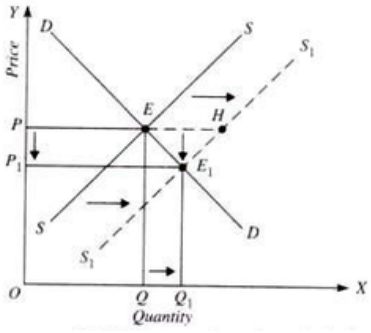


Exhibit 14: Effect of Shift in Supply on Price Level

- An increase in supply will cause a decrease in the equilibrium price and an increase in the equilibrium quantity of a good
- The increase in supply creates a deficient demand at the initial price
- This deficient demand then causes a decrease in the price level

As a result, the prices of non-conventional energy sources have been consistently declining throughout the past decade.

III. CORRELATION ANALYSIS

Objective

To show that the increase in the issuance of sustainable bonds (used to finance renewable power projects) has led to a decrease in costs of solar and wind energy, thus making them more affordable and popular.

Methodology

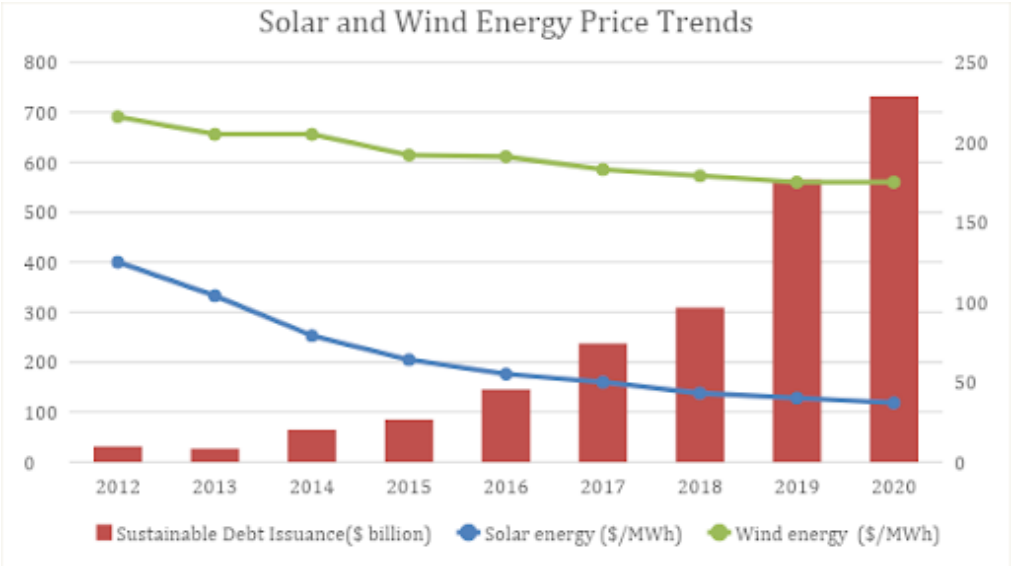
- Data for sustainable debt is sourced from Bloomberg New Energy Finance.
- Levelized Cost of Energy (LCOE) is an economic measure which is used to compare the lifetime costs of generating electricity across various technologies.
- Karl Pearson's Correlation Coefficient (r) is used to show the intensity of the linear relationship between any two variables X, Y. It lies between -1 and 1.

Year	Sustainable Debt Issuance ($ billion)	Solar energy LCOE ($/MWh)	Wind energy LCOE ($/MWh)
2012	31.4	125	216
2013	26.6	104	205
2014	64.5	79	205
2015	85.1	64	192
2016	145.8	55	191
2017	237.9	50	183
2018	309.3	43	179
2019	565.5	40	175
2020	732.1	37	175

R (Sustainable Debt, Solar Energy) = **- 0.7406**

R (Sustainable Debt, Wind Energy) = **- 0.8341**

Exhibit 15: Rising Green Investment vs Declining Solar & Wind Prices



IV. CONCLUSION

The R values from correlation analysis indicate a strong negative correlation. Hence, we can decisively say that increased investment in Green Finance instruments has caused a decrease in prices of non-conventional energy sources. This underscores its importance and the role it is going to play in environmental protection in the coming years.

In 2020, Climate bonds hit a record high of $1trillion. Despite this encouraging growth, the lack of standardized, transparent, and comprehensive ESG benchmarks to guide investment decisions remains one of the key obstacles among investors. The Covid-19 crisis has heightened the focus on sustainable investing. People today have also become increasingly aware and climate-conscious.

In conclusion, we can say that Green Finance has made an irreversible leap into the mainstream, and there is greater awareness that robust practices can help companies unlock new opportunities and attract new sources of capital in a post-pandemic environment.

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QUANTILE REGRESSION TO UNDERSTAND INTERRELATIONSHIP AMONGST STOCK EXCHANGES GLOBALLY

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ABSTRACT

Investments and Stock markets are popular sources of growing money. People have become more conscious and are looking for ways to invest and reduce the risk associated with stocks. Any knowledge of how the stock indices move makes for informed decisions. This paper studies the claim that stock markets worldwide have a mathematical effect on each other and seeks to validate the same by incorporating Quantile Regression. Its scope and use have been discussed and the trends of NSE, when compared to 5 global stock indices, has been explored.

JEL Classification Codes: C310

Keywords: Cross-sectional, Heteroscedasticity, Heteroscadastic, Quantile Regression, Error-Component Models.

1.Mentored by Dr. Hemant Kulkarni (Professor and ISI, Kolkata Alumnus) and assisted by Abhay Kansal (Second Year Undergraduate Statistics student, St. Xaviers, Kolkata)

I. INTRODUCTION

Studies and various researchers have hypothesized that the stock market is not completely news-driven. The preconceived notions and irrational biases also affect stock prices. This phenomenon is termed investor sentiment.

A strong financial market with broad participation is pivotal for an economy. India is a developing economy with high growth potential. Capital markets act as a barometer which is used to measure the performance of the Indian economy with its development. The Reform of the Indian stock market began with the founding of the Securities and Exchange Board of India (SEBI), following the global pattern, though it became more effective after the stock market scandal in 1991.
The Indian stock market mainly functions on two major stock exchanges, the BSE (Bombay Stock Exchange) and NSE (National Stock Exchange). In terms of market capitalization, BSE and NSE have a place in the top five stock exchanges of developing economies of the world. The Bombay Stock Exchange is one of the oldest exchanges across the world, while the National Stock Exchange is among the best in terms of sophistication and advancement of technology.

After the process of economic liberalization, Privatization and Globalization, the Indian capital market has been assigned a very dominating place in the financing and loaning industry. The strategy of industrialization, which protected domestic industries from foreign competition, was also responsible for high costs and low growth in the economy. This rate has now been stunted due to low corporate and government plugins. The socio-economic disparity can be undone by trickling the monetary benefits of the economy to everyone. This can be achieved by ensuring a constant and steady stream of flow in the capital markets. Since Secondary and Tertiary sectors are what almost the majority of the economy is composed of, a fund route via these markets ensures harmony amongst the producers of goods in the economy with the consumers, who in short, supply the deficit funds.

Another phenomenon worth noticing is the dilemma of investors blurring in context to choosing traditional low return routes. Investors have begun a journey of educating themselves about the way a stock market operates in order to hedge risks and dodge low return banks and other related institutional incomes.
So as to apprehend the actions in inventory markets in India it would be good if the trends in this marketplace are compared to the trends in the different global markets and study the connection among numerous markets.

2.Financial Integration for Indian Stock Market Sadhan Kumar Chattopadhyay & Samir Ranjan Behera

3.Comparative Analysis of Indian Stock Market with international MarketsRetrieved from https://www.scribd.com/doc/38036457/CComparative-Analysis-of-Indian-Stock-Market-With

II. STATISTICAL CONCEPTS

Regression Analysis:

Regression analysis is used to establish the relationship between two kinds of variables – the dependent or response variables and the independent variables or regressors. Using the regressors, a relationship is developed which enables the estimation of the dependent variable which is why the said variate is also known as the response variable. It is a very powerful statistical tool with increasing complexity across far-ranging applications in different disciplines.

A Brief Introduction to Linear Regression:

- Model

$$Response\ Variable = Model\ F + Random\ Error$$

- Linear Regression Model

$$Y = \beta_0 + \beta_1 X + \epsilon$$

- $\beta = (\beta_0, \beta_1)$: Model parameters

$E(\epsilon) = 0, V(\epsilon) = \sigma^2$

Least Squares Estimation

- Objective function:

$$\hat{\beta} = argmin_{\beta \in R^p} \sum_{i=1}^{N} (y_i - \beta_0 + \beta_1 x)^2$$

- Predicted value of the response

$$\hat{Y} = \hat{E}(Y|X = x) = \hat{\beta_0} + \hat{\beta_1} x$$

Drawbacks of Linear Regression and the case for Quantile Regression:

If either of the assumptions of linear regression (Linearity, Homoscedasticity, Normality and Independence) are not met, the linear model is not suitable.

One alternative to combat the issue would be to estimate the median value of the response variable using the Least Absolute Deviation, which is similar to the least square procedure. Median regression may seem like a fitting solution but even that is not useful if extremities in variables are to be studied. And that is where the significance of Quantile Regression is realized.

Quantile: The tau–th quant $Q_\tau(Y) = y_\tau = F_Y^{-1}(\tau),$ below which proportion of the population is tau:

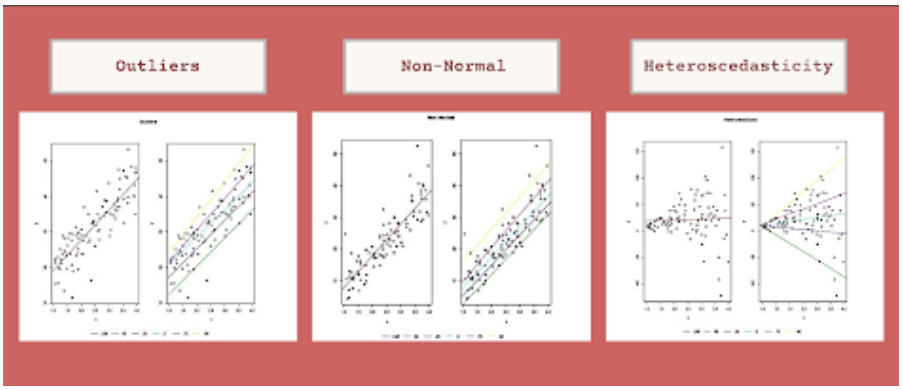
where $F_Y(y_\tau) = P(Y \leq y_\tau) = \tau$

Quantile regression enables the estimation of the non-central summary statistics of the response variables, which is so much powerful and useful than one may realize. It is a method that models quantiles instead of mean for a given set of regressors upon which the model is built.

Quantile Regression can serve as an efficient choice over simple linear regression in the following instances:

- In the presence of a large number of Outliers

- When the data being modeled is non-normal
- When the data does not follow the pattern of homoscedasticity (constant variance in response for all regressors)



Model and Definition of Quantile Regression:

- Model(Koenker and Bassett, 1978) for (x_i, y_i) is

$$Q_\tau(Y|X = x) = \beta_{0\tau} + \beta_{1\tau}X + \epsilon$$

- $Q_\tau(\epsilon) = 0$
- Parameters are estimated using simplex algorithm.

$$\hat{\beta_\tau} = argmin_{\beta \in R^p} \sum_{i=1}^{N} \rho_\tau(y_i - \beta_{0\tau} + \beta_{1\tau}x_i)$$

- The fitted conditional quantile is:

$$\hat{Q_\tau}(Y|X) = \hat{\beta_{0\tau}} + \hat{\beta_{1\tau}}X$$

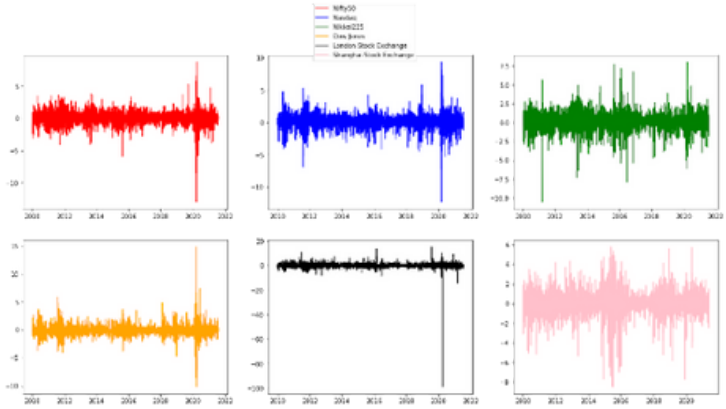
III. LITERATURE REVIEW

In recent times, Stock Market and monetary trends have seen considerable attention.
Debijan Mukherjee observed in his research paper that the Indian Stock Exchanges, BSE and NSE, show similarities in trends with their international counterparts. The stock markets chosen were analyzed both quantitatively and qualitatively. Especially after 2003, there has been a high correlation among the stock exchanges and they are found to be more integrated with each other. It is also found that socio, economic and political trends affect the stock markets.

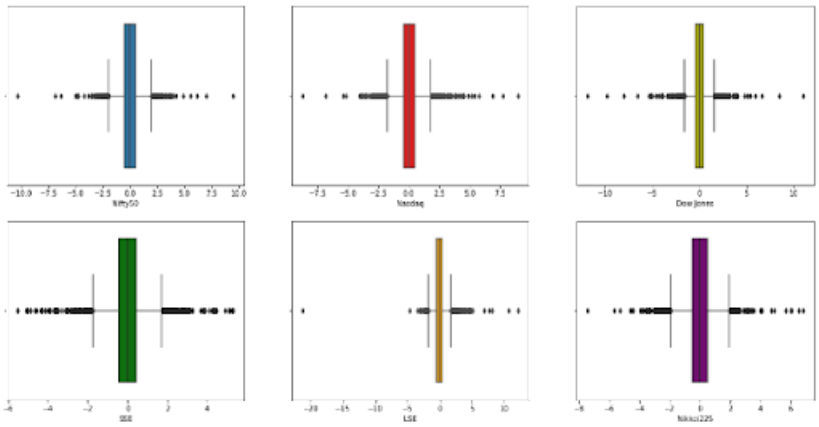
Manjula K A and Karthikeyan found that NSE and Asian Stock Exchanges draw an integrated relationship among each other and that data from other stock exchanges can be used to predict the future trends of NSE. They concluded the correlation and regression of Nifty with other Asian Stock indices. They also predicted that the linear regression model failed to show the correct trends and that the gradient boosting regression model showed better results and were useful to predict future prices.

Fredrik Bergling used quantile regression to effectively study portfolio management. He divided the value into various quantiles and tried to get a more exact value of the predicted return. He concluded that quantile regression is more advantageous and gave better predictions. They concluded that two out of three times the quantile regression does outperform the Mean-Variance and OLS while calculating risk management.

IV. METHODOLOGY - EXPLORATORY DATA ANALYSIS

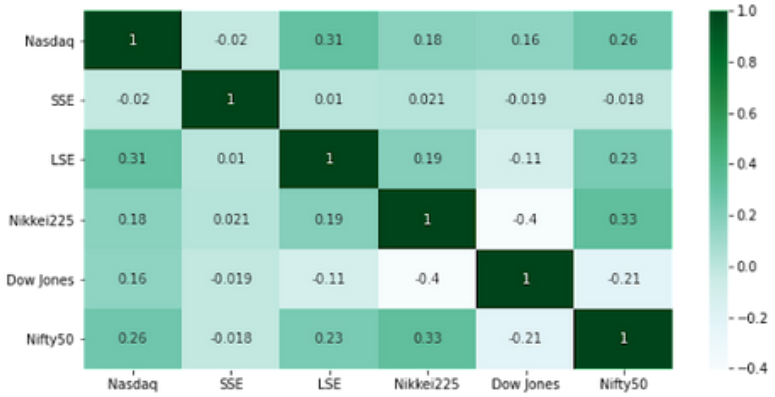


The line chart for each index displays the yearly change in the index. The 2020 pandemic effect can be observed in the line chart of all indices.



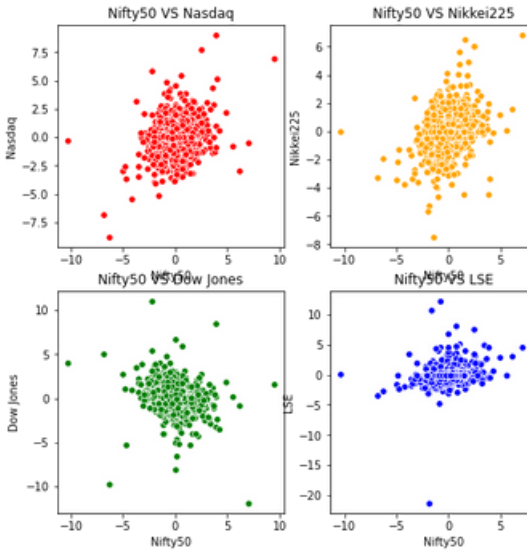
Boxplot for each global Index:

The boxplot of each index shows that there are too many outliers in the indices data and therefore it is not favourable to apply the linear regression model on the data.



Analyzing the relationship of different stock indices:

- The image represents the correlation between the dependent and independent variables.
- We can observe that Dow Jones has a negative correlation of (-0.21) with Nifty50.
- Whereas Nikkei225 and LSE have a positive correlation of 0.33 and 0.23 with Nifty50, respectively.
- NASDAQ have a positive relation of 0.26 with Nifty50.
- SSE has a negligible correlation with Nifty50



- The image is a scatterplot of Nifty50 which is the dependent variable with the independent variables like Dow Jones, Nasdaq, LSE and Nikkei
- We can see that the data is not following a linear relationship.

V. CONCLUSION

1]Quantile Regression Fit - Results and Analysis

- The Quantile Regression model has been fitted on the data set for tau values. (Ranging from 0.05 to 0.95).
- Here, for each quantile, we get a table of estimated coefficients with a 95% Confidence Interval. These are the parameter values, which are based on the following assumptions:

1. It is the same as ordinary regression.
2. Marginal effect is also
3. interpreted similarly.

Index	Major Composition
Nasdaq	IT-based
SSE	State-run companies [commercial banks, insurance sectors etc.]
LSE	IT companies, financials, communication services etc.
Nikkei225	Food, Pharmaceuticals, Automotive, Ship and machinery etc.
DJI	Industrial Sector

The equation:

$$Y = \beta_0 + \beta_1 X + \beta_2 X + \beta_3 X + \beta_4 X + \epsilon$$

- has Nasdaq, SSE, LSE, Nikei225 & DJI as its variables. The intercepts give us 0 .
- For the row depicting linear relationship, a difference of 0.22 occurs with the presence and absence of Nasdaq. Similarly, for SSE, LSE, Nikei225 and DJI we notice the linear coefficients of parameters taking values of -0.02, 0.11, 0.200 and -0.12 respectively.
- For understanding each quantile (tau value), the following relationship should be considered:-

1. When linear parameter > Quantile parameter – Underestimation takes place.
2. When Linear Parameter < Quantile Parameter – Overestimation takes place.

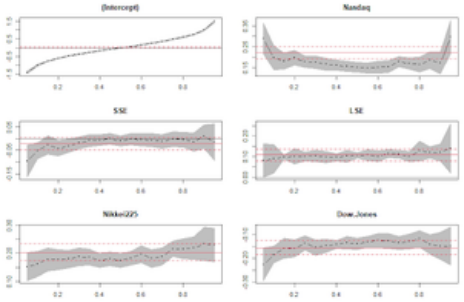
P-Values:

Tau Values	Nasdaq	SSE	LSE	Nikkei225	Dow Jones
0.05	0.00000	0.02055	0.10750	0.00000	0.00000
0.10	0.00000	0.01147	0.09652	0.00000	0.00000
0.15	0.00000	0.24971	0.00000	0.00000	0.00000
0.20	0.00000	0.03700	0.00001	0.00000	0.00000
0.25	0.00000	0.06487	0.00000	0.00000	0.00000
0.30	0.00000	0.24757	0.00000	0.00000	0.00000
0.35	0.00000	0.57808	0.00000	0.00000	0.00000
0.40	0.00000	0.62753	0.00000	0.00000	0.00000
0.45	0.00000	0.93643	0.00000	0.00000	0.00000
0.50	0.00000	0.43655	0.00000	0.00000	0.00000
0.55	0.00000	0.65391	0.00000	0.00000	0.00000
0.60	0.00000	0.74130	0.00000	0.00000	0.00000
0.65	0.00000	0.67611	0.00000	0.00000	0.00000
0.70	0.00000	0.48437	0.00000	0.00000	0.00000
0.75	0.00000	0.92247	0.00000	0.00000	0.00000
0.80	0.00000	0.80769	0.00000	0.00000	0.00000
0.85	0.00000	0.54197	0.00000	0.00000	0.00000
0.90	0.00000	0.76188	0.00000	0.00000	0.00003
0.95	0.00000	0.75476	0.05784	0.00000	0.00233

- H0: Indices have no significant effect on Nifty 50
- H1: Indices have a significant effect on Nifty 50
- SSE: The p-value > 0.05, hence we accept the H0.
- To understand this phenomenon, we need to look into the basket of major portfolios that have high correlation impact on the behaviour of these indices.
- Nifty50 is dependent on IT companies listed in the US exchanges.
- Dow Jones Industrial Average is a major container for the secondary sector than the tertiary sector.
- The analysis of QR plots hence after holds these relations into consideration.

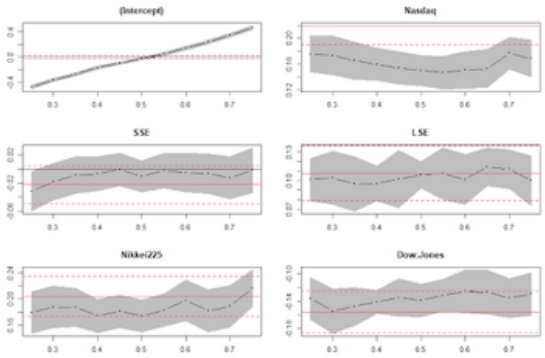
The QR plots:

- This Graph is a function of Quantiles.
- The Grey region highlights the confidence interval of 95%.
- The Horizontal Line is the Ordinary Least Squares estimate with 95% limits as horizontal lines.



Mid-50% Analysis:

This is used to build analysis on the bandwidth of Q1 to Q3.

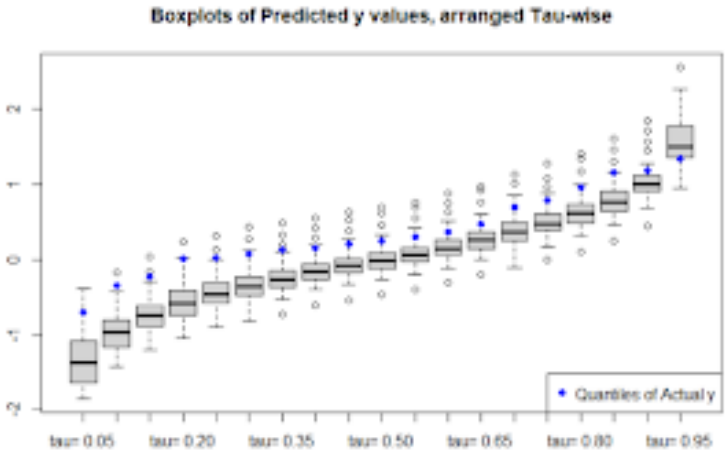


Key Insights:

- Nasdaq tends to have a larger impact on net change in Nifty 50 at the extreme 5% of the changes.
- Overall, Shanghai seems to be irrelevant in its impact on Nifty 50.
- Nasdaq and DJI Paradox.
- LSE seems consistent and fits well within the linear model's fit in its impact on Nifty 50
- The middle 50% of the net changes seem consistent around the linear model fit, except Nasdaq

In general, stock exchange fluctuations affect top and bottom 10% changes of Nifty50 for a major part. Hence, a linear model would have not solved the problem, and hence justifies the suitability of a Quantile Regression model.

Box Plots:



The box plot has been built upon predicted values for each tau value .
The blue dots are the actual values. They lie in the range of the box-plots bandwidth.
Therefore, we can establish accuracy in the interpretation of the data.

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IMPACT OF CRYPTOCURRENCY BILL 2021 ON THE INDIAN ECONOMY

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ABSTRACT

Cryptocurrencies are the digital currencies of the next generation that are expected to be strong players in the coming future. They are decentralized currencies that work on cryptography and blockchain technology. In recent years many economies around the world have cleared their stand over cryptocurrencies, some have banned them, some have regulated them while some are still sceptical of them. Cryptocurrencies like any other currency have their advantages and threats, hence a proper analysis of every aspect of it is necessary to reach any conclusion. The Indian government has been sceptical of cryptocurrencies in the past few years and has given warnings for the same. This study tries to focus and analyze the impact of the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 announced by the Indian government and various ways in which its implementation may impact the economy of India.The study aims at learning about the bill in detail and how various factors of this bill can impact major stakeholders of cryptocurrencies in India. A part of this study also includes a brief review of the status of cryptocurrencies in major economies worldwide. The study is concluded with a survey to know insights from some industry experts and scholars to analyze what future cryptocurrencies hold in India.

JEL Classification Codes: E58, F61, G28

Keywords: Cryptocurrency, Cryptocurrency Bill 2021, Bitcoin, the economic impact of the cryptocurrency bill, Indian Economy

I. INTRODUCTION

“A cryptocurrency is a digital or virtual currency secured by cryptography, making it nearly impossible to counterfeit or double-spend. Many cryptocurrencies are decentralized networks based on blockchain technology—a distributed ledger enforced by a disparate network of computers. A defining feature of cryptocurrencies is that they are generally not issued by any central authority, rendering them theoretically immune to government interference or manipulation.” (Frankenfield, 2021)

Cryptocurrency became quite a stir with the advent of bitcoin, the first blockchain-based cryptocurrency in the world developed by Satoshi Nakamoto in 2008. The first sale using bitcoin traces back to 2010 which attached a cash value to the industry for the first time. Further in 2011, other cryptocurrencies like Litecoin, Namecoin and Swiftcoin emerged. The period from 2012 to 2017 saw a steep rise in the value of bitcoin from $5 to $1,000. This period of crypto boom saw the emergence of cryptocurrency mushrooms in India including Zebpay, Coinsecure, Koinex and Pocket BIts.

The great emphasis on digital payments during the 2016 demonetization can be attributed as one of the reasons for the crypto boom in India, it drove the tech-savvy customers to the cryptocurrency market. This rise was followed by various statements by the RBI and the Ministry of Finance, however, the 2018 issue changed a lot of things. The RBI issued a notice preventing all commercial and co-operative banks, payments banks, small finance banks, NBFCs and payment system providers from dealing in virtual currencies and entertaining all entities which deal in them. The cryptocurrency exchanges business was crippled overnight as the trading volumes fell by 99% and 95% of the jobs vanished by August 2018.

The cryptocurrency market jolted to life on March 4, 2020, when the situation took a 360-degree turn. The Supreme Court struck down the ban on cryptocurrency making cryptocurrency unregulated but not illegal in India. The price of bitcoin flourished by almost 700% between April 2020 and February 2021. (“Cryptocurrency in India: The Past, Present and Uncertain Future,” 2021)

On Jan 29, 2021, the government said that it is working on a new bill to create a sovereign digital currency and simultaneously ban all private cryptocurrencies. The bill stated that it sought to "create a facilitative framework for the creation of the digital currency to be issued by the Reserve Bank of India". This is a huge step and will have a lot of consequences. This paper aims to dissect the impact of this new bill on the Indian economy and analyze the consequences of its implementation and scrapping.

II. LITERATURE REVIEW

The research from James and Parashar (2018) focused on the impact of cryptocurrency on the economy of India, the present status of cryptocurrency in India and the future it may have. As mentioned in the paper, currently there is no regulation in India for cryptocurrency and "the government does not consider cryptocurrencies legal tender or coin and will take all measures to eliminate the use of these crypto-assets in financing in legitimate activities or as part of the payment system" as stated by the union finance minister in union budget 2018. The study suggested that the Indian government should take legal steps to regulate cryptocurrency as its users are rapidly increasing in India.

The purpose of the paper by Harit (2020) was to explore cryptocurrency and the prevailing regulatory structure. This study is centred around analyzing schemes of existing domestic laws that relate to cryptocurrency, domestic laws affecting taxation of cryptocurrency and major economies' response to cryptocurrency. The paper also studies other countries including Australia, China, European Union, Japan, Russia and the United States and how they are dealing with cryptocurrency. From the findings of this paper, it can be concluded that most economies in the world are regulating cryptocurrency but India is still sceptical of it and is dealing with a resilient approach towards its regulation.

The paper by Jani (n.d) aims at analyzing the behaviour of users of cryptocurrency when it is not legalized. The impact of demonetization in India is analysed on the growth of cryptocurrency. One of the key findings of the survey conducted was that more than 48% of the participants believed that virtual currency is trustworthy. In the end authors of the paper ranked 21 countries as "friendly", "hostile" and "neutral" according to their cryptocurrency regulations. Out of 21 countries, 15 were relatively friendly, 4 were relatively neutral and 2 were relatively hostile. The key findings of this paper imply that cryptocurrency is likely to be the next currency platform due to the heavy volume of cryptocurrency which is transacted in different systems.

The paper by Yadav (2021) aims to analyze India's stance on cryptocurrency and how cryptocurrency is regulated in various jurisdictions. The most important judgment mentioned in this paper is by the Supreme Court observing that “cryptocurrency is not banned in India and poses no discernible risk, the deprivation of cryptocurrency exchanges from accessing banking and payment channels would be disproportionate”.

Further analysis is done about the decisions of countries that have not banned virtual currency versus countries that have banned cryptocurrency. The facilitation of criminality including money laundering and terrorist financing were the primary concerns of nations regarding cryptocurrency.

The study also states that the introduction of the bill to ban private cryptocurrencies such as Bitcoin and introduce its digital currency which is often termed as 'Central Bank Digital Currency' will leave cryptocurrency traders in dire straits resulting in uneasiness in the sector which is destined to accelerate the greater heights in India.

Conclusively, the available literature focuses more on the behavior of people around cryptocurrencies and if they will be banned in the future in India. It lacks a depth analysis of the economic impact of the Crypto-currency Bill 2021 on the Indian Economy. Hence, this study is relevant for studying the aforementioned economic impact and has a wide scope.

III. THE CRYPTOCURRENCY AND REGULATION OF OFFICIAL DIGITAL CURRENCY BILL, 2021

The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021, is under review and likely to be tabled in Parliament shortly. The government introduced the bill in the budget session but is still deliberating on it with the stakeholders. However, statements by officials suggest that the bill is intended to create a facilitative framework for an official digital currency issued by the RBI and "prohibit all private cryptocurrencies in India." The sovereign digital currency is likely to be introduced in the financial year 2022-23.

According to the RBI, central banks are exploring Distributed Ledger Technology (DLT) to improve the financial market infrastructure and create a strong foundation base for implementing central bank digital currency (CBDC). A recent survey of central banks further confirmed this. It found that some 80% of the 66 responding central banks have started to explore the use of CBDC in some form and are actively studying its potential benefits and implications (Mathew & Verma, 2021).

In contrast to its 2018 approach (which sought a complete ban on all cryptocurrencies), recent comments by the finance minister indicate that rather than an absolute ban, there may be experimentation, exploration and encouragement of blockchain technology. A recent Reserve Bank of India (RBI) report on currency and finance for 2020-21 rightfully recognizes the potential of CBDCs for financial inclusion and improving aggregate demand in emerging markets, as also for enhancing the speed of monetary policy transmission. RBI did indicate that a CBDC is a "mixed blessing", as it would risk disintermediation of the banking system.

In the light of cryptocurrency's role as a fiat currency, RBI has expressed concerns over the lack of financial stability, illegal activities, hacking vulnerability and volatility of prices. Experts have said that this volatility would ebb over time with greater acceptance. As more people would trust, the value would appreciate just like it happened in the case of gold over time. These concerns are valid, while some of these are unique to crypto, other risks apply to other financial products too (for example, consider the case of fake notes). Therefore the potential of cryptocurrency should not be dismissed solely on these grounds. This calls for a regulatory framework that should be oriented towards mitigating these specific risks.

We need a well-conceived regulatory framework that facilitates transparency, and the responsible democratization of market participants could guard against digital invasion and coercive behaviour. Pre-emptive regulation can monitor and prevent such undesirable outcomes.

A report of the Financial Action Task Force (FATF) underlined cryptocurrency's anonymity and layering as intensifying the risks of money laundering, but the FATF also provides risk-based guidance to mitigate such risks through a combination of traditional and non-traditional methods, including customer identification, verification and transaction-monitoring prerequisites. (Mehta & Viswanathanare, 2021)

RBI's contentions stem from a multitude of reasons. Among these, it is peculiar to note that RBI is currently looking at cryptocurrency as a legal tender and not as an investment asset. Cryptocurrency's status as a legal tender is possible in the foreseeable future but right now its potential as an investment tool is expanding and this change of approach is something that the government should take into consideration, given how rapidly the world is moving to cryptocurrencies.

IV, SURVEY STUDY AND ANALYSIS

Methodology

Our paper is an exploratory study based on secondary research and supported through a questionnaire method based on a purposive sampling technique that collected responses from corporate respondents, scholars and students since they are highly aware of the scenario of the cryptocurrency. The sample size for this study was 100 people who have direct or indirect exposure to the cryptocurrency market.

The questions in the survey were formulated in a logical progression commencing with basic questions to judge the awareness of the sample on the topic of cryptocurrency and further moving on to complex and bigger issues involving their personal opinions on the implications of the government's move.

Data Collection and Discussion

A brief overview of the sample

Most of the participants were aged between 17-25 years old and they represented 82 per cent of the total participants. Participants aged above 25 years represented 18 percent of the total participants. More than half of the participants were students whereas the remaining participants were employed.

The following sections highlight the main findings and provide indications as to how the main research questions might be answered based on the survey results and the analysis done by this study.
"digital currency" and around 13% of people saw it as a "financial asset".

General awareness about cryptocurrency

To assess the cryptocurrency acumen of the masses, this survey asked them to rate their knowledge of cryptocurrency on a scale of 1-5. Almost half of the people had an average idea about cryptocurrency and its working. 49% of people rated their knowledge of cryptocurrency as 3 on a scale of 1-5. Around 30% of people had little to no idea about cryptocurrencies, and around 21% of people were well read about it. Among these respondents, around 29% of people were active traders while the remaining 71% had not directly dealt with cryptocurrencies. However, a whopping majority of 51% of people said that they were interested in knowing more about cryptocurrencies. When asked what exactly was their understanding of cryptocurrencies, 74% of the people correctly identified it as a “digital currency” and around 13% of people saw it as a “financial asset”.

Opinions on cryptocurrency bill

From the statistics of the survey, it was clear that 57% of respondents were aware of The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 while the remaining 47% of respondents had no idea of the bill.

When respondents were asked about their take on India planning to introduce its digital currency and banning all other private cryptocurrencies a mixed response could be observed, most common response was that this is a very powerful step that will greatly strengthen India's global position while some other common responses were that due to this step blockchain innovation might come to a halt and will lead to an exodus of both talent and business from India, also the purpose of cryptocurrencies to be decentralized will be defeated by this decision.

Another interesting insight of the survey was that 74% of respondents feel cryptocurrencies are not safe and risk-free and yet 88% of respondents said that cryptocurrencies should not be banned in India.

The major reason for this difference between the two answers was that maximum respondents felt it is lack of regulation by the government which is making cryptocurrencies risky, some respondents also said that an outright ban of cryptocurrencies might create other problems whereas a proper regulation will provide security to its users and will curb many of the risks such as volatility associated with cryptocurrencies.

Answers by respondents in a question about the impact of successful implementation of the bill on Indian economy can be summarised as:- Indian economy might be able to fill its long term goal of having a powerful position among major economies but short term goals such as increased international trade, increased foreign investment, boosting GDP may face neglection under the implementation of this bill.

Potential advantages and threats of cryptocurrency

Coming to the advantages of the cryptocurrency, the most common advantages reported by the respondents included: decentralised and secure(58%), completely digital(57%) and alternative to banking systems (53%). The least common advantages included: protection from inflation (29%), immunity to government-led retribution (30%) and privacy protection (34%).

Coming to the threats of the cryptocurrency, the most common threats reported by the respondents included: rise in cybercrime (72%), lack of regulatory framework (63%) and fluctuation in value (55%). The least common threats included: energy consumption (27%). Around 50% of respondents also reported terror financing, tax evasion and growth of black markets as potential threats.

V. STAKEHOLDER-WISE IMPACT ANALYSIS

Government

If the government works out a regulatory framework that mitigates the potential risks of cryptocurrency and combines it with an experimental approach where both private and public money co-exist in complementary rather than contradictory roles then it can serve as a huge potential to our financial markets. The regulation and acceptance of cryptos can be done in two stages. A CBDC can mark the start of India's journey into the world of digital currencies, but must not be an end in itself. Private cryptos may well be sustainable under regulation and could also help the government and central bank meet key policy objectives. CBDCs have the potential for improving financial inclusion and aggregate demand in emerging markets along with enhancing the speed of monetary policy transmission. Therefore, it would make the system more transparent, inclusive and efficient.

There is adequate empirical research on how decentralized, peer-to-peer finance through blockchain-based cryptos can make financial services more accessible, cost-effective, efficient and interoperable. The FATF had as far back as 2014 highlighted the potential for financial inclusion through appropriately-regulated virtual currencies. India could use them to deepen its financial markets. (Mehta & Viswanathanare, 2021)

Environment

When we talk about this shift to a digital currency, the environment also plays an important role. Paper money costs us billions of dollars. In this year 2016-17 (demonetization year) alone Rs 7965 crores were spent on printing notes. The process of bitcoin mining consumes far less energy than our current financial system. Currently, the most efficient way of generating the highest hashes/k is through the use of solar energy and hydroelectricity. For example- some cryptocurrency miners are based in countries such as Iceland and Norway, where most energy production is almost 100% renewable.

Cryptomarket

India has a highly untapped potential for digital currencies and a decentralized financial system. The bill is likely to promote cryptocurrencies in India by giving them legal and recognized status. If the government works out a regulatory approach, not only will it serve as a great investment option (given the surge), this will improve credit access as the blockchain technology does not distinguish individuals, unlike commercial banks who serve high-value customers since it is an algorithm after all.

Banks

Cryptocurrencies are built on public blockchains that can be used by anyone for sending and receiving money. Blockchain technology offers a safer and low cost way of making payments that reduce the need for verification from third parties and win over the processing time for traditional bank transfers. The process of lending using blockchains offers a more secure way of offering personal loans to people and at the same time makes the loan process low cost, more efficient, and safer. Hence, this way the rise of cryptocurrencies can completely disrupt the current banking system we have. (CB Insights, 2021) Conversely, if cryptocurrencies are regulated by the government and blockchain technology is adopted efficiently, it will upgrade financial services which in turn will improve the current banking system. Banks have a key role in the cryptocurrency industry regulation, they can add assurance and security to the mostly unregulated environment. The adoption of cryptocurrencies and blockchain technology can synchronise the processes and take the current banking system to another level of efficiency. (Scicchitano, n.d.)

Investors

Indian investors: Considering the decentralized nature of cryptocurrencies a complete ban cannot be ensured on them in any way which has also been seen in the case of China, domestic investors of cryptocurrencies will find their ways to transact and invest in the cryptocurrency market. (Azfar, n.d.)

Foreign investors: If cryptocurrencies are banned in India many investors might not invest in Indian startups and might even pull out their current investment. Such a case can give a real shock to the rising startup culture of India as many startups are funded by international investment.
Conversely, if cryptocurrencies are regulated properly, it will provide a sense of security to both Indian and foreign investors, motivating them to invest in global markets and domestic startups as well.

VI. LEGAL STATUS OF CRYPTOCURRENCY IN THE REST OF THE WORLD

Cryptocurrencies are not possessions of one single country, they exist globally. Decisions taken by one country affect the cryptocurrency market as a whole, which has been seen in the case of China as well. This is why it becomes important to study the legal status of cryptocurrency in the world while analysing the impact of the Cryptocurrency Bill 2021 in India.

Table 1-This table shows the current status of cryptocurrency in 18 countries around the world.

S.no.	Country	Status/Key Points
1.	United States	• Permissive • Bitcoins are classified as Money Services Business which is regulated under Bank Secrecy Act. • For taxation purposes, Bitcoins are categorized as property by Internal Revenue Services. (Global Legal Insights, 2021)
2.	Japan	• Permissive • Cryptocurrency exchange businesses operating in Japan are regulated by the Payment Services Act. • The National Tax Agency has classified profit earned by sales of Cryptocurrency as miscellaneous income and not capital gains. (Umeda, 2018)
3.	Russia	• Partly Legal • Using cryptocurrencies for payments is not allowed. • Exchange of cryptocurrency is allowed only through licensed operators.
4.	China	• Illegal • China does not recognize cryptocurrencies as legal tender therefore the banking system is not accepting cryptocurrencies or providing relevant services. (Zhang, 2018) • Initial coin offerings (ICO) were banned in China in September 2017. (Wenhao, 2020)
5.	Australia	• Permissive • The government introduced a bill in Parliament in August 2017 to put digital currency exchange providers under the Anti Money Laundering Counterterrorism Financing Legislation regulatory regime. (Buchanan, 2018) • The Australian Tax Authority considers cryptocurrencies as capital gains for taxation purposes. (Global Legal Insights, n.d.)
6.	Switzerland	• Permissive • Cryptocurrency exchanges in Switzerland are licensed and regulated by the Swiss Financial Market Supervisory Authority. • The Swiss Federal Tax Administration regards cryptocurrencies to be classed as *assets* and is therefore covered by Switzerland's Wealth Tax.
7.	Canada	• Permissive • Cryptocurrency was identified as a commodity by The Canada Revenue Agency. It declared that it can be used to buy goods or services. It will essentially be considered as a barter transaction. • Canada's tax laws and rules, including the Income Tax Act, apply to cryptocurrency transactions.
8.	Italy	• Permissive • Italy so far has had no specific regulations for cryptocurrencies. • The status of cryptocurrencies as taxable assets is not clear in Italy.
9.	South Korea	• Permissive • A trader must open a real-name account at the same bank as their cryptocurrencies dealer to make a deposit or extract funds. • Since cryptocurrencies are considered neither currency nor financial assets, their transactions are currently tax-free. (ComplyAdvantage, n.d.)
10.	Singapore	• Permissive • The Monetary Authority of Singapore does not directly regulate cryptocurrency. • Fraudulent financial activities by the Monetary Authority nevertheless. • Businesses and individuals who buy and take advantage from the rise in the value of their cryptocurrency holdings in Singapore do not pay tax on their sales.
11.	Bangladesh	• Illegal • The Central Bank of Bangladesh declared cryptocurrencies illegal in 2017. • Online cryptocurrency transactions are not sanctioned by any central payment system and legal action can be taken in such cases. (Freeman Law, n.d.)
12.	Saudi Arabia	• Illegal • The Saudi Arabian Monetary Authority has cautioned people against using bitcoin as it is high risk and its dealers will not be provided with any security or rights.
13.	South Africa	• Permissive • Currently, in South Africa, there are no particular laws or regulations regarding the use of cryptocurrencies. • A bill was introduced by the South African Minister of Finance called the Taxation Law Amendment Bill. if it is enacted in its present form, it will have taxation implications for crypto assets. (Goitom, 2019)
14.	Brazil	• Illegal • There are no restrictions on individuals buying, selling, or using cryptocurrencies for non-criminal purposes. • The Brazilian authorities have cautioned users that cryptocurrency is an "at your own risk" type of game. (Revoredo, 2017)
15.	Mexico	• Permissive • The use of virtual assets is regulated by Fintech law and by anti-money laundering regulations. (Global Legal Insights, 2021a) • Mexican law did not appear to provide for clear statutory rules on taxation on virtual assets. (Guerra, 2018)
16.	Nigeria	• Permissive • The financial institution did not place any restrictions on cryptocurrencies generally and is not discouraging people from trading them. • Transactions on cryptocurrencies are prohibited in the banking sector. (Shome, 2021)
17.	United Kingdom	• Illegal • UK cryptocurrencies regulations allow users to buy and sell cryptocurrencies. • However, according to the UK's financial regulator, the Financial Conduct Authority, the trading of cryptocurrency derivatives is banned. (Osborne, 2021)
18.	France	• Permissive • Cryptocurrencies remain largely unregulated in France. • French authorities have issued some limited guidance about the tax treatment of cryptocurrencies, instructing that any profits from their sale are taxable. (Boring, 2018)

VII. FUTURE AND SCOPE OF CRYPTOCURRENCY IN INDIA

After the initiation of the ban, India will become one of the major economies to make cryptocurrency illegal. There will be an exodus of both talent and business firms from India just like in 2018. VCs like Draper, Ayon and Sequoia which are investing in Indian blockchain startups would be forced to pull their money out thereby minimizing the scale of innovation and funding required for the growth of entrepreneurship.

Blockchain innovation which has uses in governance, data economy and energy will also come to a halt in India after the outright ban. ("Cryptocurrency in India: The Past, Present and Uncertain Future," 2021; Pagidipati, 2021)

Furthermore, the Indian government will also be investing in the research and development of blockchain technology once the ban is implemented. Money will also be spent to explore its applications. It is also expected that the government will bring out its own heavily regulated cryptocurrency. (Kumar, 2021)

There is also a possibility of the growth of unregulated and unmonitored transactions of cryptocurrency because of the ban. The government's worst fears of terror financing and money laundering may surface since it can lead to a creation of an underground market.

It is also argued that the ban is unfeasible since it will create a parallel market for illegitimate use and after all, anyone can buy cryptocurrency over the internet.

Furthermore, the previous legal bills including Draft National Strategy on Blockchain, 2021 of the Ministry of Electronics and IT (MEITY) concluded blockchain technology to be transparent and efficient thereby rendering the bill inconsistent. (Ramesh, 2021)

The way forward to pragmatically deal with the issue is by not banning cryptocurrency outrightly but to have regulated trading of cryptocurrencies by bringing supporting regulations including strict KYC norms, reporting and taxability. Similar initiatives have been proposed by the Budget 2022.

VIII. CONCLUSION

From the era of demonetization to the post-pandemic scenario, cryptocurrencies have experienced booms and contractions in India arising because of statements of RBI, GoI, demonization, etc. The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 aims to further impact the Indian markets drastically.

The impact of the Cryptocurrency Bill on the Indian economy is surely going to be huge. The government's fears surrounding cryptocurrency including rising in cybercrime, lack of regulatory framework, energy consumption, terror financing, tax evasion and growth of black markets find a reflection in the survey conducted during research implying that the fears are shared by the Indians as well.

However, the general population is still against banning cryptocurrencies outrightly contrary to what is being proposed by the government. Banning cryptocurrencies will negate all the benefits which cryptocurrencies offer ranging from decentralisation, digitalisation, an alternative to banking systems, protection from inflation, immunity to government-led retribution and privacy protection. Furthermore, the Indian economy will suffer because of an exodus of talent and business from India to other nations which allow cryptocurrencies.

To gain the maximum benefits from cryptocurrencies and the advantages they offer, more regulation and accountability must be enforced. A complete ban may have many unanticipated consequences apart from being against the public interest.

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CREATING GENDER-INCLUSIVE CIRCULAR ECONOMY IN INDIAN CITIES

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ABSTRACT

The paper attempts to study the linear economic model in the Indian urban planning system currently in place that has traditionally been patriarchal and gender-exclusive. It studies the possibility of discovering an intersection between gender-inclusive urban planning and modelling a sustainable and circular economy in Indian cities, in the specific context of solid waste management and air pollution. The paper also analyses certain structures in the global south countries that may be emulated in India.

JEL Classification Codes: Q53, R0, D630

Keywords: urban planning, gender-inclusive, circular economy, solid waste management, air pollution

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India has the world's second-largest urban system, with cities housing nearly 11 per cent of the total urban population. The country has reached a tipping point in its economic transformation, with half of the country predicted to be 'urban' within a few decades. Urbanization is expected to account for 73% of the total increase in population over the next decade.

Cities have grown over the years, becoming plagued by the stresses and strains of unplanned and linear urbanization, the brunt of which falls on the poor and minorities, biodiversity, and the economy. Issues such as a lack of serviced land, traffic congestion, pressure on basic infrastructure, extreme air pollution, and increased solid waste generation are all too common in these cities, with air quality indexes reaching new highs every day and landfills overflowing with waste and filth. This has an adverse effect not only on the quality of life but also on the efficiency and health of the people who live in these cities.

The issues mentioned above highlight only a small chunk of the shortcomings of these cities. Evidence suggests that city development favours men because it is planned and designed by men and reflects traditional gender roles and gendered divisions of labour. Cities function better for cisgender men than for women, girls, sexual and gender minorities, and people with disabilities making them increasingly unsafe and vulnerable to a variety of hazards and illnesses. These shortcomings only highlight the inefficiency of the linear economic system and infrastructure and reinforce the fact that there is an urgent need to adopt more gender-inclusive and sustainable systems and practices in order to efficiently manage waste and control pollution in Indian cities. The need for an economy that reduces reuses and recycles – in short, a circular economy – is paramount in these congested Indian urban systems.

The first half of the paper discusses the challenges of solid waste management and air pollution in Indian cities, which are a result of the linear economic framework, and talks about how it adversely affects women. The second half puts forward the strategies for a reformed agenda that is more circular and gender-inclusive.

I. METHODOLOGY

The paper utilizes secondary data sources from renowned research papers, journal articles, reports, etc. to put forth its arguments. Error is minimised as the data used has previously been reviewed by experts in the fields of gender, economics, and sustainability.

III. CHALLENGES OF TRANSITIONING TO A CIRCULAR ECONOMY

The rapid increase in urbanization, population, and development in India in the past few decades has led to severe environmental degradation. The economics of air pollution, degradation of resources, and sustainability have been rather neglected as compared to the issues of growth and expansion. Although this trend is quite common in countries around the world, the effects of this are far more prominent in India, in comparison to the other countries in the global south. This is mainly because of the substantial increase in its population.

India, which currently follows a linear economic system, can recycle only 20% of its consumption, which is insignificant in comparison to the amount of waste generated. This linear “take-make-dispose” mentality has a variety of negative effects on the ecosystem and is harmful to the economy, individual efficiency, and development. A linear economy’s growth trends and urban planning mechanisms, in addition to being unsustainable, increase the vulnerability of economically disadvantaged groups and social minorities, particularly women. Using the able-bodied, working male as the "impartial" user of the city, male planners and designers, whether intentionally or unintentionally, created urban spaces that catered to their needs while reflecting and reinforcing their society's patriarchal gender norms: one that assigns men as breadwinners, with full access to the public realm, land, and housing, and women as caregivers who are relegated to the private realm of the household. This phenomenon is prevalent in many parts of the country, especially in Tier 2 and Tier 3 cities.

While the linear economy does generate economic value through rapid production of materials and resources, and follows practices that yield faster results, it is largely unsustainable especially when it comes to the development and planning of Indian cities. This rapid linear expansion of cities has brought to the fore acute problems of air pollution and unwise solid waste management, aggravated by ingrained by gender exclusion, that has resulted in the deterioration of the quality of life.

Air pollution in India has been exacerbated over time by developments that are typical of emerging economies: growing cities, increased traffic, rapid economic development and industrial growth, and higher levels of energy consumption. In an air quality report published by Qari, a Swiss organization, it was reported that twenty-two of the thirty most polluted cities in the world are in India, including fourteen out of the top fifteen cities.

Figure 1: Deaths attributed to air pollution in India in 2019

	Number of deaths, millions*	Percentage of total deaths*
Air pollution	1.67	17.8%
Ambient particulate matter pollution	0.98	10.4%
Household Air pollution	0.61	6.5%
Ambient Ozone pollution	0.17	1.8%

Source: AQI India,2019

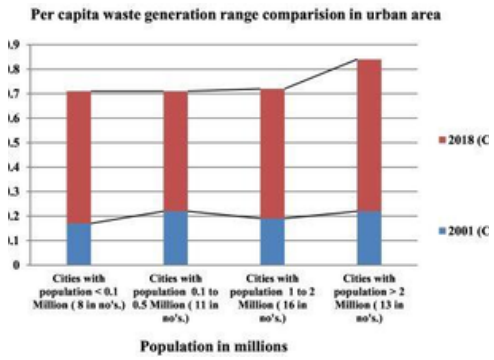
Gender inequalities frequently shape women’s and men’s mobility and use of transportation in India, according to evidence. If a family owns a car, the male head of the household is more likely to use it, leaving women to rely on alternative modes of transportation, primarily walking and public transportation. Low-income women, in particular, are “no-choice walkers,” according to a gendered comparison of five large cities in India, where 37 percent of women walked to work on average, compared to 27 percent of men.
Fine particulate matter pollution (PM2.5) exposures in microenvironments near and far from roadways were measured, and walking near roadways resulted in a 40% higher exposure than walking farther away from roadways. Thus, due to the prevalent social constructs and gender inequalities in Indian

cities, women are more likely to bear the brunt of air pollution.

According to the India State-Level Disease Burden Initiative, air pollution was responsible for 1.7 million deaths in India in 2021, accounting for 18% of total deaths. Air pollution has been linked to an increase in the number of miscarriages and complications. In addition to being harmful to citizens' health and livelihoods, air pollution has been shown to have a negative impact on the efficiency and productivity of the country's services, as well as its economic growth. According to an analysis of air pollution in India, India could have gained 1.4 billion working days in 2019 by reducing air pollution-related sick leaves, translating into $6 billion more revenue for businesses. The cognitive and physical performance of employees could also be boosted by cleaner air, adding $24 billion per year to Indian business revenues. Solving air pollution would therefore reduce cases of burn-out and potentially lower the rates of attrition, culminating in improved recruitment prospects for employers in formerly polluted Indian cities.

After China and the United States, India is the third-largest producer of solid waste. It faces substantial difficulties in waste collection, transportation, treatment, and disposal. The local governments in charge of waste collection and management are ill-equipped to handle the increasing amount of waste, which is a direct result of India's ever-increasing urban population and average income, resulting in significant changes in urban consumption patterns. Local governments lack appropriate resources and infrastructure. As a result, they are unable to incorporate innovative and appropriate waste treatment and disposal technologies. Some of the major issues for the solid waste management system include a lack of waste segregation and doorstep collection, the deployment of ineffective treatment technology, and indiscriminate garbage disposal. In recent years, the surge in solid waste creation in India has surpassed the increase in population. In India, the daily per capita generation of municipal solid waste ranges from approximately 100 grams in small towns to 500 grams in large towns. According to a Central Pollution Control Board survey, total municipal waste output from Tier 1 and 2 cities will be over 20 million tonnes in 2019.

Figure 2: Per capita waste generation comparison in Indian cities



Source: CPCB India,2018

When it comes to municipal waste management, especially in cities, women are again at the receiving end. In the waste management system, men and women have different responsibilities. Women's engagement is typically limited to lower-level activities such as sweeping streets, apartments, markets, offices, and health facilities; collecting mixed waste and assisting their male partners in carrying and disposing of waste in bins/transfer stations. As a result, women in the sector earn half as much as men. While heterosexual men are in charge of the more labour-intensive operations of loading and unloading, women are in charge of the more monotonous and time-consuming tasks of sorting and separating. The weight of this task, combined with the burden of domestic responsibilities, is very mentally and physically exhausting for women. The nature of some of the tasks involved, as well as health and safety concerns, add an additional layer of concern for women working in waste management.

Local authorities lack the means to acquire new land or acquire the technologies required for social waste management because they are mainly reliant on state governments for support. Furthermore, waste pickers, who are essential workers in the industry, lack legal status and protection, making them ineffective or incapable of enforcing waste collection and segregation procedures.

The deterioration of quality of life and the health of citizens due to pollution, in addition to the existing inequalities and inefficiencies in city planning and waste generation in the cities, further strengthens the argument that the linear economic system in India is failing, and that a more circular, sustainable and inclusive approach for urban planning needs to be adopted.

III. A FEW SOLUTIONS

Transitioning to a circular economy has to be executed by following a bottom-up approach. Evidence points to the power of local government in managing waste in cities. A clear example of this is Indonesia's waste bank system. It was first started by Unilever Foundation in the Surabaya sub district of Jambangan in 2004 as a collaboration with the city government and the Jawapos newspaper, as part of their Green and Clean Program. The foundation utilized neighbourly competition and public prestige among subdistricts to achieve community interest in recycling. After a fixed period of time, these savings can be withdrawn in the form of cash.

The foundation utilized neighbourly competition and public prestige among subdistricts to achieve community interest in recycling. Waste banks are institutions where segregated waste can be deposited. These eco-financial institutions have found popularity in the country as international organizations such as ASEAN, UNDP, etc. recognised and awarded this people-based approach. The first official waste bank was established by Bambang Suwerda, called Bank Sampah Gemah Ripah, in the district of Bantul in 2008. After it was established, the bank has been responsible for diverting more than 1,000 lbs. of inorganic waste each month as well as earning extra revenue by selling finished waste handicrafts (Maeda et al, 2011). This concept has also found a loyal consumer base for women in the country since they are the primary waste collectors in the household as well as in the informal waste sector. The male population is slowly adjusting to this system by helping segregate the household waste as their income increases.

The women 'waste bank activists' have enabled community residents to gradually reimagine their traditional gender attitudes towards cleaning and household waste segregation. This model has been somewhat emulated by HDFC Bank in partnership with UNDP India in Indian cities such as Dehradun, Hrishikesh, etc. These structures collect solid waste, segregate and recover it before sending it to recyclers.

Air pollution in cities has some obvious solutions which are in place by the local governments. However, for a more gender-inclusive approach to create a circular economy, attention should be given to the smoke produced in kitchens, both in households and commercial kitchens. Use of charcoal and other fossil fuels in cooking is a linear model which negatively impacts the local environment. Agnisumukh, an Indian firm, has created energy efficient cooking stoves that use radiant heat at a low gas pressure without generating carbon soot. The firm is currently attempting to introduce automation is kitchen gas technology. This is an attempt to remove waste generation at source, thereby assisting in the creation of a circular economy.

IV DISCUSSION

As previously outlined, creating a circular economy is not without its challenges. While the urgency of planning an environmentally sustainable city in India is acute, the paper contextualised two of the major obstacles – solid waste management and air pollution – in achieving this goal in India. These areas are also subject to gender discrimination, which can be removed by mainstreaming gender into policy decisions and urban planning.

It is hoped that two of the world's biggest goals of climate preservation and gender equality can be achieved by an intersectional approach towards the same. There is immense scope for future research in this field, as the world sits up and takes note of rapid alterations in urban systems and gender dynamics.

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INDIAN CSR POLICY EXPEDITING SDG FRUITION: A FISH TALE OR REALITY?

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ABSTRACT

Rising emissions, depleting resources, and increasing consumerism has created a need for a structure that facilitates harmonious living. Corporate Social Responsibility (CSR) was introduced to make businesses socially responsible. In India, CSR was made mandatory through the Companies Act, 2013. This was followed by the adoption of Sustainable Development Goals (SDGs) in 2015. This paper aims to explore the link between CSR and SDGs. Companies engage in CSR activities, but do they really create an impact? Through this study, we attempt to review the existing system and find areas that require greater attention. Industries play a major role in driving a country's resources, both - natural and human. The ongoing pandemic poses unprecedented challenges added to the existing issues of unemployment, poverty, and gender inequality; from the data collected, we make an attempt to analyse what has been done and what should be done to make our planet more habitable, with the help of case studies. Through this research, we bring to light the seldom discussed challenges faced by the marginalised communities. We also examine areas of lacunae and sift ways to bridge the gap prevalent in order to ensure greater inclusivity.

JEL Classification Codes: M29, I00, R520

Keywords: Corporate Social Responsibility, Inclusivity, Industries, Sustainable Development Goals, Covid-19 Pandemic

I. INTRODUCTION

The 17 Sustainable Development Goals (SDGs) formulated by the United Nations (UN) aim to foster development, prosperity and harmony among the nations of the world. In 2015, all UN Member States adopted the 2030 Agenda for Sustainable Development - a blueprint for promoting equality, education, climate action and other goals aimed at the upliftment of the society and the world at large.

In India, NITI Aayog, the government's public policy think tank, is responsible for conducting surveys and reporting the progress of the different states under the various heads including poverty, sanitation and clean energy and other sustainable development goals.

As per 2020 statistics, India scored an average of 66, which is 6 points more than that of the previous year. The collective efforts of the government, citizens, businesses, social workers and others have been successful in bringing about sustainable changes to society.

As one of the economic players, businesses greatly influence a nation's direction, whether in terms of technological development, employment opportunities or even the ecological environment of a place. The impact is multi-faceted, often involving an opportunity cost. It is, therefore, necessary to ensure that organisational activities reap greater yields but not at the cost of social and ecological harm.

On these lines, Corporate Social Responsibility (CSR) was introduced. CSR is a concept that promotes socially responsible business practices. Such practices aim to facilitate goals of global and national importance in terms of gender equality, employment opportunities, eco friendly products, sustainable production methods and the likes.

CSR has been made mandatory for every company that, during the year -

a. Has a net worth of Rs.500 crore or more or
b. Has a turnover of Rs.1,000 crore or more or
c. Has a net profit of Rs.5 crore or more

Such a company is required to formulate a CSR policy and ensure that at least 2% of the company's net profits shall be directed towards CSR activities.
If a company doesn't fall under any of the above or is not in a position to spend the required amount on CSR activities, the directors will have to make a disclosure and give suitable reasons in the company's annual report.

These mandates have been successful in promoting engagement in CSR activities. As per the National CSR Portal (set up by the Ministry of Corporate Affairs), FY 2019-20 saw 22,155 companies falling in the above bracket undertaking a total of 34,291 projects - compared to 16,548 companies undertaking 9,365 projects in FY 2014-15. The number of CSR projects in 2020 has increased by 266% (approx.) as against those undertaken in 2014.

As the projects increase, so do the impact areas. It is imperative that studies be undertaken to measure the effectiveness of such initiatives. This paper titled 'Indian CSR Policy expediting SDG Fruition: A Fish Tale or Reality?' aims to find parallels between CSR initiatives of corporates and SDGs taking examples of two companies – Tata Group and Ola. Facilitating this study is a primary research undertaken to understand the general perception of CSR and SDG from the sample and draw inference from it.

As the world inches closer to 2030, a quick look at our surroundings tells us that there is still much to be done before we are able to achieve the 17 SDGs.
On the bright side, we also notice the coming together of organisations, not-for profits, governments and communities taking accountability of their actions and working towards a sustainable system of living.

II.LITERATURE REVIEW

(ElAlfy, Palaschuk, El-Bassiouny, Wilsen, & Weber, 2020) talk about how the pursuit of Sustainable Development Goals (SDGs) by the United Nations has impacted Corporate Social Responsibility (CSR) research. The theme of the paper revolves around researching and putting forward the changed perception of stakeholders for companies. It establishes the SDGs that are prioritised over others and the probable reasons for the same. Moreover, the study elaborates on measures that can improve financial performance, alongside CSR performance in the future.

(Lu, Ren, Lin, He, & Streimikis, 2019) The study seeks to explore policies to promote the voluntary pursuit of Corporate Social Responsibility (CSR) and ways to measure the impact of the initiatives. It also talks about the success of the companies of European Union member states with respect to their active involvement in CSR activities. It also highlights the need for constant monitoring of the impact CSR initiatives of various companies have on the society in general. The paper proves the need for collaborative efforts between policy makers and scientists for successful eradication of hunger and poverty. Precisely, it advocates the need for businesses to intervene and adopt a new approach for faster attainment of Sustainable Development Goals (SDGs).

(Poddar & Narula, 2019)talk about the coverage of Corporate Social Responsibility (CSR) initiatives of various corporations in different parts of India. It describes the division of the country into various states and Union Territories (UTs) and further classifies them into different zones based on factors like geography and demography. It establishes that the CSR spending of various companies is highly skewed in favour of the west zone. The lowest spending for the achievement of Sustainable Development Goals (SDGs) is in the northeast zone. The study also puts forth suggestions to reduce inequality and possible opportunities for the future.

(Sarkar & Singh, 2019) talk about the 'Balanced Scorecard' approach to integrate Corporate Social Responsibility (CSR) with Sustainable Development Goals (SDGs). It elucidates on how companies can improve their internal operations to manipulate external responses in a more strategic way taking into account the importance attached to SDGs. The study elaborates on the importance of engaging in CSR activities to help the business sustain in the long run. It also explains a roadmap to facilitate the implementation of CSR using this approach.

III. CASE STUDIES

Tata group, a global enterprise headquartered in India, was founded by Jamsetji Tata in 1868. The mission of the group is to 'improve the quality of life by returning wealth to the society and environment'. It has always committed to strong ethics and values to serve the society. The group has consistently been engaging in philanthropy as accentuated by the fact that sixty-six percent of the equity of Tata Sons, the promoter holding company, is held by philanthropic trusts.
In FY-19, the group claimed to have impacted the lives of around 11.7 million people with a CSR expenditure of over $157 million. Being one of the major contributors to CSR in India, the group covers a multitude of areas including education, skill development, healthcare, water and sanitation with a special focus on marginalised communities especially in the rural areas of India.

CSR in Quality Education (SDG 4)

Tata group has undertaken many initiatives in order to help the Government achieve the Sustainable Development Goal of Quality Education (SDG 4). Here is a brief outline of some of the initiatives:

Adult Literacy Programme- This programme, by Tata Consultancy Services, aims at achieving functional literacy among illiterate adults in a relatively lesser time as compared to traditional methods of teaching by using Computer Based Functional Literacy (CBFL) technology. Having about 1,000,000 beneficiaries, the initiative has spread in 17 states of India covering not only basic elementary education but also the knowledge of banking and Government policies. It is available in 9 Indian languages including Bengali, Gujarati, Hindi, Kannada, Marathi, Odia, Tamil, Telugu and Urdu.

School on Wheels Project (SoW)- The project was launched by Tata Consulting Engineers Limited to impart education to children of migrant workers engaged in the informal sector of Pune, Maharashtra. Currently, 162 School on Wheels are functional.

Dhangyan- It is an online course launched by Tata Capital to help make underprivileged villagers financially literate. The digital platform has conducted a total of 12 workshops in FY20. It has a total user base of 76,696 users.

A New Education Worldview (ANEW)- It is a project of Tata Communications which aims at filling up the digital divide by integrating technology into the curriculum with a focus on 110 Government schools in Gurugram, Haryana. With Tab-Based Adaptive Learning Systems, it provides enhanced digital enablement for teachers to pass on the same to the future generation.

Digital Divide- In India, rural penetration of broadband services is 29 percent. The worst affected group is women who are 33 percent less likely to have internet services. The worst affected group is women who are 33 percent less likely to have internet services8. The major reasons responsible for the same are the patriarchal mindset which believes that a woman using the internet could be a threat to her reputation. Rural women still fear availing such services in many places in India. While initiatives like the Adult Literacy Programme and Dhangyan are great steps, the existing gender digital gap can be a caveat.

Need for Diversification- School on Wheels is a very constructive initiative to aid migrant workers. The scheme should, however, be expanded to other states where the majority of migrant labourers work. Preliminary reports by the Chief Labour Commission suggest that the maximum most number of migrants 10.58 lakh are in Chhattisgarh followed by Kerala 2.87 lakh, Maharashtra 2.01 lakh, Tamil Nadu 1.93 lakh, Telangana 1.84 lakh and Andhra Pradesh 1 lakh. Diversifying the programme to states like Chhattisgarh and Kerala could help reach a larger number of targeted beneficiaries.

Revitalising Government Schools- Even if Government-owned schools arrange the necessary infrastructure, especially with support from CSR initiatives like ANEW, the inherent problem lies in the motivation that teachers have. While boosts like digital enhancement in pedagogy could interest the students, Government school teachers who earn a fixed salary, might not have an incentive to impart the same. To make the initiative a true success, the Government needs to address such issues and build a robust teaching-learning environment.

CSR in Good Health and Well-Being (SDG 3)

Maternal and Newborn Survival Initiative Project (MANSI)- This project was initiated by Tata Steel in the areas of Jharkhand and Odisha. It aims at providing capacity-building training to ASHA (Accredited Social Health Activists) workers through classroom sessions. By providing the right training to ASHA workers (called Sahiyyas in Jharkhand), the ultimate aim of the scheme is to reduce neonate and infant mortality in the country. It was initially started as a pilot project in 167 villages and has now been scaled up to 1,686 villages.

Digital Nerve Center- An initiative by Tata Community Services works towards connecting and coordinating healthcare at all levels- primary, secondary, tertiary to a central medical hub through toll-free numbers. It has opened new avenues of coordination at Cancer Institute, Chennai and Tata Medical Center, Kolkata. It is a pan India initiative to augment the healthcare services through collaboration, with a major focus on rural and underprivileged citizens.

Lack of Awareness about ASHA Workers As per research conducted in a village of Jharkhand in 2007-08, only around 24.2 percent (87 out of 360)10 of women who were interviewed had heard about Sahiyya. The level of awareness is no better in many backward areas of India even at this hour. While training and capacity building of ASHA workers is very crucial to achieving the goal, in order to truly benefit from the activity, families should also be made aware of them so that there is trust-building between the two.

CSR in Water and Sanitation (SDG 6)

JalAadhar- To help mitigate water scarcity in drought-prone regions of Maharashtra and Tamil Nadu, JalAadhar was launched as a project by Tata Capital. Its major focus is to improve the incomes of farmers of the two states by ensuring effective and judicious use of water resources. It also aims at increasing the groundwater levels through these mechanisms.

This is ensured by activities like promoting crop diversification, creation of trenches and new farm ponds, distilling old water structures to name a few.

Amrutdhara- An initiative by Tata Power which aims at providing water for drinking as well as agricultural purposes to low income and marginalised households. It does so by harvesting rainwater and ensuring better groundwater utilization and preservation. The project covers areas of Maharashtra, Delhi, Odisha, Gujarat and Jharkhand. It has also initiated several commercial RO plants in Delhi providing safe and clean drinking water to households.

State of Availability of Drinking Water- Availability of safe and clean drinking water is what precedes all other goals included under SDG 6 (Clean Water and Sanitation). In states of Maharashtra and Tamil Nadu, the percentage of rural population getting clean drinking water at premises is 64.39 and 73.05 respectively, in contrast to states like Telangana and Goa with 100 percent availability. To attain parity with more advanced areas, ensuring supply of clean drinking water is a prerequisite.
Unchecked Groundwater Exploitation- The safe level of groundwater utilisation stands at 70 percent or less. While both JalAadhar and Amrutdhara are great initiatives in the same direction, the ground situation still needs more efforts. States of Maharashtra, Odisha, Gujarat and Jharkhand lie in the safe zone with groundwater withdrawal percentage of 54.62, 42.20,10.08 and 1.15 respectively. The situation in Tamil Nadu, however, needs more attention with a groundwater withdrawal percentage of 80.93. Delhi is still the worst affected UT having performed exceptionally dismally with a groundwater withdrawal rate of 1209.

CSR in Clean and Affordable Energy (SDG 7)

The Green Switch- Tata Capital's project to light unelectrified homes and spaces in tribal hamlets of Maharashtra is another step to help the underprivileged. This involves using clean means of energy, i.e., decentralised solar panels. While the installation charges are borne by Tata Capital, the maintenance charges are borne by the community members by paying for a one-time entrance fee and monthly electricity bills. Other employment opportunities like establishing small businesses like flour mills and others have also been given an impetus.

Affordability Issue- In Maharashtra, 17.35 percent of people still continue to live below the poverty line as per Tendulkar Committee estimates9. According to this committee, a person who is spending Rs. 33 a day in urban areas and only Rs. 27 a day in rural areas live below the poverty line. Even if they manage to pay a one-time entrance fee, discharging monthly electricity bills can lead to increasing inequalities. The worst affected would be socio-economically weaker sections of the area as affordability continues to be an impediment.

Difficulty in Availing Loans for Businesses- While the initiative does give an incentive for people to start up small businesses and boost income, it might not be able to achieve the same without institutionalised loans. Only 11.39 functioning commercial banks per 1,00,000 populations are there in Maharashtra, with the most concentration in urban areas9. Economically weaker populations, especially women, might not find it easy to avail a loan despite various schemes of the Government. An overwhelming majority of people, thus, resort to informal moneylenders who in turn charge high rates of interest. Easy collateral-free institutional loans are a must so that everyone is able to reap benefits.

CSR in Gender Equality (SDG 5)

MPowered- Tata Communications in collaboration with Trickle Up, a non-profit organisation, works towards empowering women living below USD 1.25 per day in the backward areas of Odisha and Jharkhand by enhancing the efficiency of the work they do for a living. This is done by providing access to government schemes and initiatives through a mobile app. A PoP (Package of Practices) has also been initiated under it to provide step by step guide to organic farming and crop cultivation. The guide has also been made available in vernacular languages.

OKHAI and Cluster Development- Okhai is an online fashion brand launched by Tata Chemicals. It trains rural women artisans in accordance with the needs of the target consumers. It covers a wide range of products including apparel, home decor and other daily use items. The primary focus of the scheme remains on improving the incomes of women artisans in rural areas of Maharashtra, Gujarat and Uttar Pradesh.

Digital Illiteracy- According to the Mobile Gender Gap Report, 2019, Indian females are 56% less likely to use mobile internet than males. While 43% of Indian men own a cell phone, women lag behind with only 28% mobile ownership12. Mobile apps cannot be useful unless women have access to smartphones and internet services.

Widening Gaps- The comparison between earnings of males and females gives unintended but not surprising results. In the states of Maharashtra, Gujarat and Uttar Pradesh, the ratio of average wage earned by females to males stands at 0.75, 0.81 and 0.94. The aim is to achieve an equal pay ratio for both and initiatives like OKHAI are a step in the right direction. As per data from International Labour Organisation, the percentage of women in the labour force has reduced from 26.43 in 2005 to 20.3 2 in 201913, again worsened by COVID-19.

OLA

Indian multinational company, Ola Cabs is a ridesharing platform that offers its services in 250+ cities and in India, Australia, New Zealand and the United Kingdom. Founded by IIT Bombay Graduates, Ankit Bhati and Bhavish Aggarwal in 2010, Ola (ANI Technologies) has since expanded its operations beyond just ride-hailing services to fleet management and electric vehicles (EVs). Ola Foundation14 is the CSR wing of Ola. The CSR committee is chaired by CEO Bhavish Aggarwal and is responsible for formulating, recommending and monitoring the CSR initiatives of the company. The activities are carried either under Ola Foundation itself or through NGOs and trusts recognised by the Government of India. The activities undertaken by the CSR wing of Ola aim to reduce the disparities between commercial activities and sustainable development. From catering to social causes like women empowerment to environmental concerns, Ola has a wide array of CSR initiatives.

Skill Training (SDG 3 and SDG 8)

Through partnerships with NGOs like EduJobs, Buzz India, and Gram Tarang, the company provides women with opportunities to hone the skills necessary to find suitable jobs to support their families. They also encourage financial literacy and entrepreneurship among women by providing doorstep training. In their venture with Gram Tarang, Ola Foundation conducts a 60-hour program that helps women increase their self-worth, and build confidence. In 2017, Ola partnered with Apollo Hospitals16 to provide training to their drivers. This program equipped drivers to provide on-road emergency medical response including first-aid in case of shortness of breath, trauma or arresting sudden chest pain. Apart from this, the drivers were also trained to provide CPR. The drivers were required to take a complete health check-up which bore no cost to them. The ones who qualified the training were given a certificate and a sticker for their vehicles. Through such initiatives, Ola has helped promote SDG 3 (Good Health and Well Being), and SDG 8 (Decent Work and Economic Growth).

Drive the Driver (SDG 3)

The pandemic hit many businesses and families alike. During such trying times, despite making a loss of ₹610.18 crores in FY2018, Ola started the 'Drive the Driver' Fund to support cab, taxi and auto-drivers. This fund was started with an aim to encourage partner organisations, customers and investors to contribute funds for providing essential supplies and emergency support to the ones affected. It provided INR 20 crore funds for its employees and drivers. The 'Drive the Driver' fund promotes SDG 3 (Good Health and Well-Being) by ensuring the welfare of drivers and their families.

Ola Emergency

Ola launched the 'Ola Emergency' feature, in collaboration with Ministry of Health and Family Welfare (Government of Karnataka), on its app during April 2020. This feature allowed users to book cabs or autos for essential medical trips. The service was available across Bengaluru, enabling access to 200 hospitals. Ola Emergency can be used for trips between hospitals and homes for emergencies that do not require ambulances like scheduled check-ups and dialysis. The company used this opportunity to serve the senior citizens and those affected by acute diseases and other non-covid related emergencies. This initiative aligns with SDG 3 (Good Health and Well-Being).

Ola Electric

Ola Electric was established in 2017 and is a wholly-owned subsidiary of the parent company ANI Technologies. In May 2020, they acquired Amsterdam-based EV manufacturer Etergo. The following year in September 2021, the electric-scooter maker, at a valuation of $3 billion raised $200 million. The Bangalore-based private company has a manufacturing plant in Krishnagiri district of Tamil Nadu. Termed the 'Ola FutureFactory'20, this plant is spread across 500 acres and has an annual production capacity of 10 million units, making it the world's single-largest two-wheeler factory. The operations of Ola Electric are sustainable to a large extent. The new electric model will help reduce dependency on the traditional petrol and diesel-run vehicles in the years to come and promote use of green vehicles with net-zero emissions.

The company envisions to set up the 'World's Most Sustainable electric two wheeler factory'. The production facility is spread across 500 acres and has manufacturing, battery and supplier parks in close proximity, ensuring that over 90% of the parts are localised. This helps in eliminating the carbon footprint caused due to transportation of materials from one place to another.

The FutureFactory will run carbon negative with the help of sustainable construction that includes a vast solar array attached to the roof, 2 acres of forest inside the plant, and 100 acres of forest surrounding it. When it is completed, the factory is expected to create 10,000 jobs. In a first, the company will be fully operated by women. The all-female workforce will be assisted by 3,000 robots in the substantially automated plant. Through Ola Electric, Ola has ventured into promoting SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 10 (Reduced Inequalities), SDG 11 (Sustainable Cities and Communities), and SDG 12 (Responsible Consumption and Production).

V. RESEARCH METHODOLOGY RESEARCH DESIGN:

Descriptive research design was used to conduct the study.
Sampling Method: Convenience sampling technique was used as the sampling method.
Sample/Population of Study: There was no restriction or bias in deciding the sample. There were respondents from all age groups including below 18, 18 to 60 and above 60. Sample size of the study was 105. The study was conducted within India.

Method of Data Collection

A well structured and self-explanatory questionnaire was circulated online through Google Forms for collection of data from the respondents all across the country.

Type of data: Primary and Secondary data

- Primary data was collected using a questionnaire comprising 10 questions. The questionnaire has two main parts; the first part focuses on collecting specific information pertaining to the respondent's place of work, and the second part studies the respondent's view of a company as an investor.
- Secondary data was sourced from existing research papers, relevant laws and regulations and the current happenings of the world.

VI. RESULTS

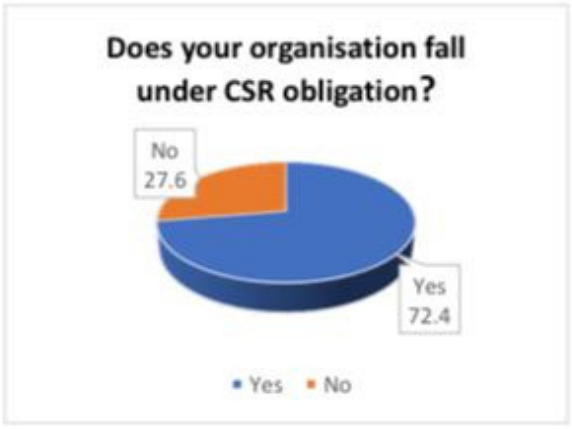

Figure 1: Does your organization fall under CSR obligation?

As per the Companies Act, 2013, businesses satisfying the given criteria are required to direct a percentage of their funds towards CSR activities and disclose it in their reports. This question enables the determination of corporates in this sample falling under such obligations.

Figure 2: Has your organisation undertaken initiatives towards CSR?

This question lays the foundation for the succeeding questions. It also throws light onto the general motivation of companies (whether or not they're required to conduct CSR activities as per the law) to undertake sustainable initiatives.

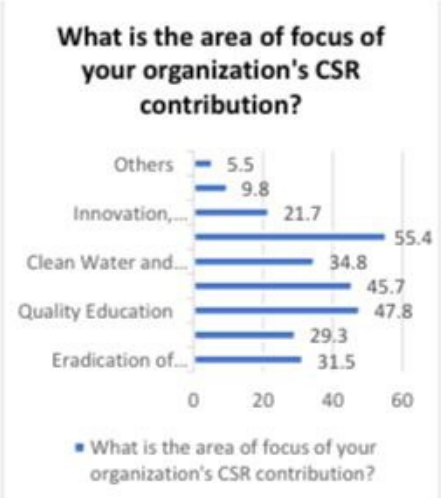

Figure 3: What is the area of focus of your organisation's CSR contribution?

In a general trend, most CSR activities are undertaken in the fields of education, gender equality and environment protection. Other areas like healthcare and eradication of poverty also have CSR programmes. Such initiatives directly facilitate the achievement of SDGs. Here we examine the areas of action for the given sample.

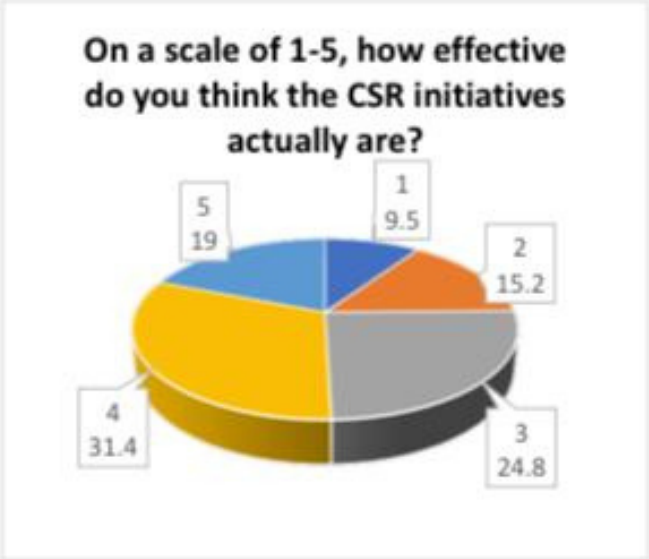

Figure 4: On a scale of 1-5, how effective do you think CSR initiatives actually are?

While numerous initiatives are undertaken under CSR policies, the general view of the public on the effectiveness of such projects remains divided. The above question aims to gauge the opinion of the population and determine their perception on the success of CSR initiatives.
obligation. It is interesting to note that while 76 organisations had the mandate to contribute to CSR, 87 organisations actually undertook initiatives. This implies that even the organisations not obliged by law to contribute to CSR did take an action for the cause.

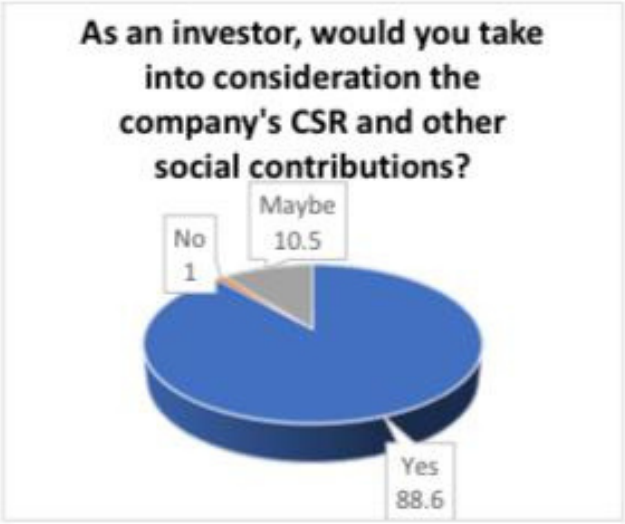

Figure 5: As an investor, would you take into consideration the company's CSR and other social contributions?

An investor might not make a decision by merely looking at the revenue of a firm. Investors have diverse expectations from a firm they invest in. This question seeks to gauge whether or not undertaking initiatives under CSR impact investor sentiments.

V. DISCUSSION

(Figure 1 & 2) Out of a pool of 105 responders, the workplaces of 76 (72.4%) of them fall under the bracket of CSR obligation. It is interesting to note that while 76 organisations had the mandate to contribute to CSR, 87 organisations actually undertook initiatives. This implies that even the organisations not obliged by law to contribute to CSR did take an action for the cause.

(Figure 3) Clean Energy, Climate Action and Sustainability (SDG 7 and SDG 13) are the two areas that have received maximum attention from the organisations (55.4%). This is closely followed by Quality Education (SDG 4) and Gender Equality (SDG 5). This gives a positive indication especially in times when climate change has become the SDG of utmost urgency. The most vulnerable community to climate change is the poor (70% of which constitutes women globally) and environmentally sensitive animal species. While CSR has contributed to SDG 5 (Gender Equality), more effort needs to be put in to safeguard other stakeholders.

The SDG least contributed to is Responsible Consumption and Production (SDG 12), with just 9.8% of the organisations taking initiatives for the same. In a world where about one-third of the food produced rots in bins and about 811 million people worldwide sleep hungry, taking steps towards this SDG becomes very relevant.

(Figure 4) 31.4% of the responders have rated the effectiveness of CSR initiatives as 4. Rating of 3 covers a percentage share of 24.8%. While 19% responders have given a perfect score of 5, most part of share being covered by a rating of 3 and 4 reflects optimism and a scope for improvement. However, the fact that 24.7% of the responders have given rankings 1 and 2 together make up a considerable chunk, indicating that somewhere people are not satisfied with the results. This leaves a lot of scope for further scaling up actions along with a need to ensure transparency and accountability.

(Figure 5) The fact that people have become more aware and socially responsible cannot be ignored. With a huge majority, 88.6% of the responders would consider company's CSR initiatives before making an investment. This accentuates the need for companies to become socially and environmentally responsible to survive in the long run.

VIII. CONCLUSION

This study examines the cases of two billion-dollar companies - Tata Group and Ola, and how Corporate Social Responsibility (CSR) initiatives in these companies align with the Sustainable Development Goals (SDGs) laid down by the United Nations Organisation.

The CSR projects of the Tata Group cover a wide range of SDGs including Good Health and Well-Being (SDG 3), Quality Education (SDG 4), Gender Equality (SDG 5) Clean Water and Sanitation (SDG 6), and Affordable and Clean Energy (SDG 7). Ola, on similar lines, has helped promote Good Health and Well-being (SDG 3) and Decent Work and Economic Growth (SDG 8). It is noteworthy that Ola, in its latest venture, Ola Electric has modeled an organisation that is modelled around sustainable operations and women empowerment. Ola Electric is not a CSR initiative per se, it is however a step in the right direction - proving that sustainability and profitability can go hand-in-hand.

This paper involved primary research on CSR policies of companies and SDGs. The results highlight the disparities in the alignment of such initiatives, with goals like No Poverty (SDG 1), Life Below Water (14) and Life on Land (SDG 15) receiving little to no attention. This holds for the general trend of CSR activities undertaken by big corporate firms outside this sample. Quality Education (SDG 4) and Affordable and Clean Energy (SDG 7) continue to remain a common field for many. Such projects have a significant impact on India's progress towards achieving Sustainable Development Goals.

Interlinking CSR activities and SDGs will kill two birds with one stone, facilitating the progress and development of the nation as a whole. A comprehensive CSR strategy will help address issues of social importance like inequalities faced by the marginalised sections and lack of action under goals like Responsible Consumption and Production (SDG 12). The majority of respondents in our study will consider the company's CSR commitments before making an investment. This highlights the growing importance of the circular economy, ESG (Environmental, Social and Corporate Governance) and the Triple Bottom Line (TBL - an accounting framework with three parts - social, environmental and financial). India has a long way to go before it can achieve all the 17 goals propagated on the lines of sustainable development. Collective action by the various stakeholders - the government, the citizens, firms and corporations, NGOs, and other independent bodies is the need of the hour.

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APPENDIX

Survey – CSR and Attainment of SDGs

With growing environment consciousness, sustainability has started to take centre stage. One related concept is Corporate Social Responsibility (CSR).

Corporate Social Responsibility (CSR), also called Corporate Citizenship, refers to a business model that requires companies to be socially accountable to all its stakeholders. Companies undertake various mechanisms to fulfil their responsibilities towards the environment and society as a whole.

With the introduction of Section 135 in the Companies Act 2013, India became the first country to have statutorily mandated CSR for companies, provided they fulfil a criteria. As per the Act, Companies with a net worth of ₹500 crore or more, or turnover of ₹1,000 crore or more, or a net profit of ₹5 crore or more during the immediately preceding financial year, are mandatorily to spend 2 per cent of the average net profits of the immediately preceding three years on CSR activities. CSR activities can be anything that helps in the sustainable development of the society including fulfilment of globally recognized Sustainable Development Goals (SDGs).

We are conducting this survey to get a better insight into this shift from profit-centred activities to the adoption of Corporate Sustainable Responsibility and its role in helping our country achieve the Sustainable Development Goals (SDGs).

Questions

Q1. Name

Q2. Age

- 0-18
- 18-25
- 25-40
- 40-60

Q3. Occupation/Field

Q4. Name of Institution/Company/Organisation.

Q5. Does your institution/organisation fall under the obligation of CSR contribution?

- Yes
- No

Q6. Has your institution/organization undertaken initiatives towards CSR?

- Yes
- No
- NA

Q7. What is the area of focus of your organisation's CSR contribution?
- Eradication of Poverty and Hunger
- Good Health and Well-Being
- Quality Education
- Gender Equality and Empowerment of Minorities
- Clean Water and Sanitation
- Clean Energy, Climate Action and Sustainability
- Innovation, Infrastructure and Economic Growth
- Responsible Production and Consumption
- Other:

Q8. On a scale of 1-5, how effective do you think the CSR initiatives actually are?

Q9. As an investor, would you take into consideration the company's CSR and other social contributions?
- Yes
- No
- Maybe

Q10. Which area(s) do you think require urgent action in order to achieve Sustainable Development Goals?

THE INVISIBLE ECONOMY: WOMEN AND THE CHALLENGES OF UNPAID LABOUR

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ABSTRACT

Through this research brief we aim to gauge how experiences of unpaid care work are molded by social constructs such as gender roles and its economic implications. Further, we seek to examine the immediate impact of the pandemic on the burden of care and explore its influence on the physical and mental health of the women engaged in it. The brief also investigates the current perception and evaluates the attitudes of men and boys towards unpaid care work, suggesting comprehensive reforms and proposing appropriate interventions for perpetuating an equitable approach to unpaid care work responsibilities.

JEL Classification Codes: D63, J01, J12, J16, J17

Keywords: Unpaid Care Work, Impact of Covid-19, Emotional Labor

I. INTRODUCTION AND LITERATURE REVIEW

Unpaid care work refers to the direct care and services provided within a household. It can constitute care of persons, housework, or voluntary community work. Yet, the existence and prevalence of unpaid care and domestic work remains predominantly unrecognized in economic agendas and social policymaking; its distribution continues to be grossly imbalanced. Women on average spend 4.1 hours per day on unpaid care and domestic work in comparison to 1.7 hours per day for men1.

This stark disparity in time spent on unpaid care work between women and men can largely be attributed to the established gender roles, caste affiliation, religious institutions and patriarchal norms that regard caregiving as the female duty, which impacts women across socio-economic classes and cultures. These responsibilities have been further aggravated by the rapid spread of Covid-19. New health and hygiene precautions, curfews and self-quarantine measures have made caregiving tasks even more challenging2. Furthermore, nationwide lockdowns and school closures across India constrain women to provide care and education support to children.

This exacerbates women's time poverty, causing them to compromise on leisure, development of their human capabilities by engaging in skill building, or participating in the labor market; severely affecting their ability to undertake paid work opportunities and achieve financial autonomy.

The government has taken strides to recognise, reduce, and redistribute unpaid care work through investment in public infrastructure and increasing accessibility to facilities such as clean water, sanitation, public transport, electricity. Nonetheless, the largest share of the burden continues to fall on women.

II. DISCUSSION

1.Understanding India's Approach to Unpaid Care Work

1.1 Will adding household work to the GDP increase women's empowerment?

49% of the women in India out of 1.3 billion people don't have their work accounted for in the GDP, which causes many problems. The share of unpaid care work in India's GDP is 3.5%, and theoretically, if it were to be counted, India's female labor force participation would jump from 20.5% to 81.7%. Counting unpaid care work in the GDP can — most importantly — lead to women's empowerment, giving them a claim to equality in the patriarchal society we live in. It can become one place where women can demand some degree of parity in terms of the time and energy they spend on unpaid care work. Recognizing unpaid care work can hence become fundamental to the call for gender justice and lead to a socially better, secure and a gender-equal environment. On the other hand, we cannot say for sure that counting unpaid care work in the GDP will lead to men recognizing and contributing to it. The real solution for the society and men to recognize and contribute to unpaid care work would be to implement awareness programmes to make men aware of the women's significant and crucial role and contribution to the society

1.2 Gaps in data collection

There are concerning gaps in the method of conducting Time-Use surveys across the regions of India. Some of these include:

1) Utilization of the 'Recall Method': This method of conducting the survey may have led to inaccuracies in the data as respondents were made to recall the activities they performed in the last 24 hours. There is a high possibility that a respondent would have trouble recalling the exact activities and the time spent per activity.

2) The Impact of COVID-19: The most recent time-use survey in India was conducted by the NSSO back in 2019 (from January to December 2019), thus excluding the adverse impact of COVID-19 on unpaid care work. The pandemic has increased the burden of unpaid care work on women multi-fold. It has also resulted in a situation where certain underpaid care-working groups were forced to enter the unpaid care work strata. ASHA and Anganwadi workers, the frontline healthcare workers at the community level, faced an increased level of work burden and a severe reduction in pay or no pay in some cases. Thus, the pandemic has resulted in a situation where there appears to be a shift of the underpaid care group into the unpaid care work strata due to an increased burden but disproportionate pay.

3) 'Representative' Sample: The 2019 time-use survey was conducted household-to-household, in both rural and urban areas thus considering a wide range of socio-economic conditions. However, the survey enumerated less than 450,000 people, which is a drop in the ocean when compared to India's population.It thus calls into question whether this number could truly be "representative" of the diversity of experience in the country. Still, it is a recent measure of the time spent on unpaid activities, and in the absence of other data, is useful to better understand the Indian situation.

4) Indirect Responses: This method of conducting the survey also led to a disproportionate distribution of required information caused due to the fact that the information was provided by the male member or another member of the household, and not by the person concerned. This extended to an estimated 50% of males and 25% of females of the total number of respondents.

If these gaps in data collection are filled, the plight of women engaged in unpaid care work and the implications it has will be brought into light, becoming a catalyst for more research and policy interventions.

2. Socio-Cultural Barriers

2.1 Gender Norms

Research has been devoted to assessing why women are perceived to be productive in domiciliary roles, while a public and professional environment is rendered conducive for men.

"In many households, if a man walks into the kitchen, it is considered odd or wrong", said Economist Ashwini Deshpande.

This division of labor is typically the framework of this social hierarchy in which masculine traits include strength and

dominance whereas submissiveness is associated with females. In fact, even same-sex couples are also not excused from these biased expectations. In 2016, an American study presented people with fictional accounts of gay and lesbian households, asking them to judge which partner ought to take responsibility for childcare, groceries, laundry and fixing the car. Reliably, respondents assigned the stereotypically female tasks to the partner described as having the more stereotypically feminine interests, such as a fondness for shopping or romantic comedies.

Girls are socialized to be caretakers from an early age. Worldwide, girls between the ages of 10 and 14 spend 50% more time helping around the house than boys of the same age. Women have been raised to see an impeccable home as a sign of their worth and their "value" is assessed based on their cooking skills and devotion to family. Meanwhile, men get special credit for the house chores they do, because their bare-minimum contribution is viewed as tremendously helpful if it's above the notional average.

2.1.1 Time Poverty

The causes of limited workforce participation of women directly or indirectly point towards the burden of housework, which leaves women with little to no time for other activities. Time poverty has significant ramifications on women's economic and health status and is a direct consequence of the normative expectations imposed on women. For instance, women are expected to quit their jobs after marriage and focus on family, indicating that their career ambitions are secondary, therefore perpetuating this discriminatory practice. Unpaid care work imposes costs in terms of missed opportunities. Some implications of Time Poverty are listed below:

- It promotes self-neglect and normalizes viewing one's needs as secondary.
- It prevents women from earning due to the huge proportion of time spent on house chores.
- It curtails women's educational opportunities and skill-acquisition.
- It results in unhealthy food habits, stress and less self-care.

2.12 The Intersection of Paid and Unpaid Work

"All surveys report a huge unmet demand for work by women. Indian women are not dropping out: They are being pushed out by the lack of demand for their labor" said Ashwini Deshpande, Economics Professor at Ashoka University.

Most women enter the labor market with an unfair disadvantage of the burden of responsibilities of unpaid work on their shoulders. Less than one-quarter (20.3%) of women aged 15 and older participate in the labor force as of 2020 and the labor force participation rate for women is only declining.

Fear of sexual violence, stigma attached to females as earners of the family and conservative thinking are some causes that pushed women out of the labour force. Recorded labour force participation rate (LFPR) of Indian women were never very high but had a dramatic decline between 2004-05 and 2011-12 and has continued to decline thereafter, albeit at a lower rate. The bulk of the decline has been in the LFPR of rural women, with the sharpest decline seen in the case of Scheduled Tribe or Adivasi women.24

Families have also reported about discourse regarding dilemmas as to who keeps their employment intact and who quits to provide the unpaid care needed at home. Typically, since women are paid less due to the wage gap and have lesser job security than men, there have arisen various incidents where women had to sacrifice their careers which had a direct impact on the earning capacity of women as well as the labour force participation rate.

2.3 Power and agency

a) Women's Financial Autonomy

At 17% of GDP, the economic contribution of Indian women is less than half of the global average34. The income earning capacity for women is therefore very limited. Women are also not primary receivers of properties and assets in inheritance from parents. Hence, there arises a need for women to walk towards the path of financial independence. This is because when women earn for themselves, they are immediately in control of their lives35. This is especially important for women who live in abusive households.

'Controlling behaviour' is one form of conducting domestic violence i.e., restricting access to financial resources. Hence, women who face abuse often have no option but to continue living in the same household with their abuser as they lack financial independence, which would otherwise enable them to have a choice. Moreover, in cases of death of the spouse or divorce, women not only have to deal with the emotional burden and pain but also an immediate need of employment. Hence, it is imperative that policies and measures are taken to increase the labour participation of women and narrow the gender gap.

b) Household Decision-Making

In tandem with the prevalent patriarchal views, unmarried girls are often referred to as 'paraya dhan' or the wealth of the family she will marry into, while the male child is often perceived as the 'light of the house', who will take forward the family lineage and support his parents in their old age. This is the main reason why families ignore investing in the welfare of a girl child such as in her education, health and employment. The girl's family does not want the 'burden' to fall upon them, and so they hand over her life decisions like the decisions about her education and freedom to her in laws, disempowering women legally and socially. It is also often observed that women have no say in the decision making process within the household if they are not an earning member. According to one research study, a 35-year old married woman from Barwada, Rajasthan claimed to have been beaten by her husband, when she attended meetings for her voluntary work with a local NGO without the permission of her husband, indicating that decision making is solely a male prerogative. It is not that women are incapable of making decisions, but it is the fear that

women possess of the male members' reactions– a clear and deliberate attempt of the society to keep the women in a secondary position. The biggest 'burden' on a family is not the women, but the discriminatory expectations and traditions that prevail in society.

III. RESEARCH METHODOLOGY

In effort to gain a deeper understanding of the involvement and participation of men and women in unpaid care work duties, we conducted an online pilot survey and received responses from 101 individuals aged 14 and above. 54 respondents identified as 'female' amongst the sample size whereas 47 respondents identified as 'male', resulting in a gender ratio of 1.14 females per male, with no one identifying elsewhere on the gender spectrum. This lack of other identified genders further alerted us to certain limitations of our survey sample, helping us understand that we would not be able to analyse the effect of the pandemic on those who identify outside the gender binary. Moreover, particularly given the limitations imposed by the pandemic, our survey could only be taken by those with access to the internet, and as a result, there is an overwhelming parity among survey takers with all of them being English-speaking as well as able to outsource domestic help.

Despite these limitations, however, we sought to both quantitatively assess the results of the survey and qualitatively draw pertinent conclusions to gauge the impact of the pandemic on the gendered contribution to unpaid care work within the middle to upper-middle class group we did manage to reach. At the end of the process, we unveiled interesting results.

IV. RESULTS AND ANALYSIS

With the onset of the coronavirus pandemic, subsequent school closures, work from home mandates, and lockdowns have brought to light the critical role of unpaid care work. Domestic help is prevalent in a majority of Indian households, with an estimate of 20 million to 80 million domestic workers in the country. Multiple lockdowns restricted the movement of these workers, leaving many homes with women as the sole caretakers. A sudden, sharp increase in unpaid care work has undoubtedly left many struggling both mentally and physically. While men and boys have reportedly been pitching in at home, data from this period is already suggesting that this burden seems to have disproportionately impacted women.

Figure 1: Our survey demographic

When asked if the contribution of females in their households to unpaid care work was more than other members of the household, 89.3% of males agreed revealing that female members of the household shoulder the major burden of unpaid care work. In response to the question of what trends they saw in their households during lockdown, several respondents stated that they had to spend more time on domestic chores, specifically cooking and cleaning, due to unavailability of house help. This disparity therefore seems to have arisen owing to two reasons: the absence of domestic help during the pandemic; as well as the obligation of women to conduct this work. One respondent remarked that this was especially apparent during "the beginning of the pandemic last year, when lockdown was enforced and no domestic help was allowed." The situation was more plainly summarised by another female respondent who affirmed that "It began with the women of the house being more involved in household chores as if it was our invisible 'job' to do so." Evidently, the brunt of the burden did fall on women.

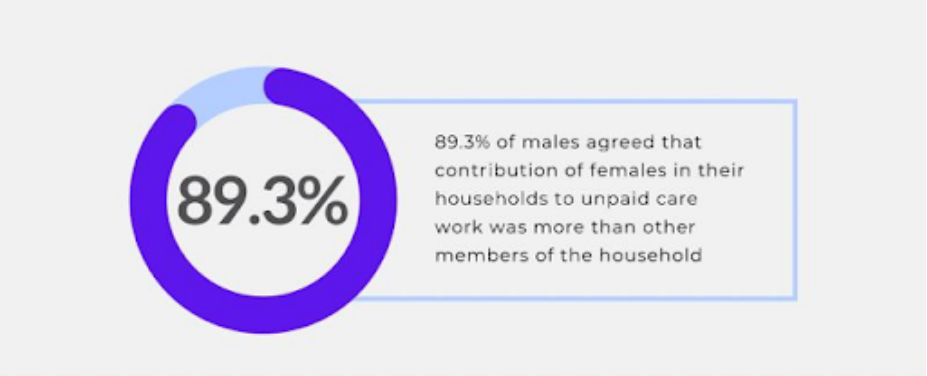

Figure 2: Recognising the unequal distribution of unpaid care work

However, 89.1% of total respondents reported an increase in participation in household chores, among which 51% were females and 49% were males. As we can see from this relatively even division, the pandemic has prompted men and women across age groups and occupations to increase their participation in unpaid care work. This is also evident among the younger generation, with 14-28 year olds expressing more participation during the pandemic and with 35-60 year olds supporting their claim. A male respondent stated that a "sense of collective responsibility for doing domestic chores has gone up." Several similar statements indicate that men have gradually but steadily become cognizant of the essential nature of unpaid care work and are stepping up to take up these responsibilities at home. Regardless, female survey takers express a need for de-stigmatisation through awareness and education, equitable distribution and greater involvement of men and boys. Male respondents too acknowledged that though they have taken initiative to help and do the work assigned to them, the primary responsibility still tends to lie with the woman. Thus, men need to take on more responsibility, reduce the burden of unpaid care work on women and not just tick off a to-do list given to them.

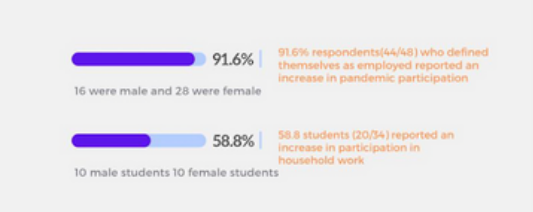

Figure 3: Gauging increased household chore participation during the pandemic across occupations

An interesting finding from our study was that several respondents to our survey believe unpaid care work encompasses "emotional labour," highlighting the mental burden and stress that homemakers are subjected to, in addition to the physical exhaustion. Thus, in order to investigate the intricacies of the pandemic on the mental health of women engaged in care work, some women were interviewed for a deep dive into the care conversation. While they belonged to different age groups, cities, and employment statuses, their outlook towards unpaid care work was similar. They all described the obligation as an unfair burden that restricted both their career and personal activities.

Some women have taken measures, defined boundaries between family responsibilities, work and personal time, and some still struggle to unload this weight on their shoulders.
Through an interview with a working woman, we discovered that she has set limits and separated time for self-care.

"I have taken the steps I needed to take - I work 3 days a week, which keeps me at peace. I would suggest all women take some time off each day to go out and enjoy." On the contrary, another working woman in Delhi stated, "I rarely have time for myself to develop and progress my interests."

A homemaker revealed her anxious mood due to her child's negligent attitude towards studying. She said "While some husbands may clean the dishes, the 'worry work' remains unshared. My husband is not bothered as much as I am when my son does not study during online classes. He may nudge him twice but that's it."

The care of children is a significant component of unpaid care work, and with school closures, has become increasingly important. Online school for young children requires a parent's help to effectively teach, and the brunt of this has fallen on mothers. In November 2020, the Indian labour force had shrunk by 13% for women but just 2% for men. This means that 13% of women had dropped out of the labour force--they were neither employed nor looking for a job. This significant decrease in the LFPR over the span of one year can be plausibly attributed to the expectation that mothers manage the home, especially in a situation where domestic help may be limited.

While there exists a gap in the collection of data to survey the state of women during the pandemic, the emotional burden and its detrimental impact on mental and physical health is clear from the available reports on the pandemic's impact, as well as through our conversations and surveys.

V. REFORMS AND RECOMMENDATIONS

Despite the invaluable contribution of unpaid care work to the maintenance of health and well-being of individuals, households and consequently of the collective economy during the pandemic, it continues to be invisible in economic analyses and absent from policy considerations. These pivotal circumstances call for concrete and comprehensive reforms to tackle the problem by incorporating 3 R's — which have an echo in the ethos of the Sustainable Development Goals — to recognise, reduce and redistribute unpaid care work.

This section discusses in detail the key spheres that must be targeted and prioritised to effectively address unpaid care work through active cooperation between the state, private institutions and society while highlighting suitable interventions that take cues from best practices from around the world, proposing practical recommendations.

Recognise

Recognition of unpaid care work is the first key step to empowering those engaged in it. Women, especially in a country like India see caregiving and domestic work 'not important enough to be reported.'48 The very act of acknowledging unpaid care work as an economic activity will endow newfound agency to women. Most importantly, it will enable appropriate consideration of the restrictions on women which impede their social and economic participation. The following practices can be adopted/amended in the Indian state:

• Expanding the current definition of 'economic activity' as categorised by the Indian government to be inclusive of domestic work, since unpaid care work tremendously consumes time, energy and adds to the stock of productive human capital. According to the criteria set by India's NSSO for classification and acceptance of certain work as an economic activity, individuals performing activities under codes 92 and 93 are classified as 'non-workers' and hence remain missing from the labour force.

92: attended to domestic duties only
93: attended to domestic duties and was also engaged in collection of goods (vegetables, roots, firewood, sewing, tailoring, weaving etc. for household use)

The current classification can be extended to allow activities under codes 92 and 93 to be recognised as 'work' participation and adopt a definition of 'work' similar to the one established by the ICLS in 2013 which is more comprehensive and cognisant of unpaid care work.

• Visibility of Unpaid Work in national statistics through Time Use Surveys: in India, a pilot TUS was conducted in 1998-1999 following which the most recent TUS was in 2019, nearly 20 years later

. This calls for production of Time Use Surveys on a regular basis; at least once every five years as recommended by the Advisory Export Group of the SNA50 for an identifying and monitoring trends of changing time allocations by men and women to unpaid care work.

• Introducing a Household Satellite Account to estimate economic value of activities that fall outside the production boundary (non-SNA work) including daily activities for household upkeep, care work and unpaid voluntary services as classified by the SNA (2008). The household satellite account model in Mexico at the National Institute of Statistics and Geography (INEGI) has proven to be a successful methodology for economic valuation of unpaid work and has led to the introduction of policies such as the National Program for Equal Opportunity and Non-Discrimination. India and Mexico show similar trends in the disproportionate distribution of unpaid care work on which women spend 299 and 423 minutes per day respectively. With a few geographical and logistical modifications, a similar model can be effective in India (which does not mention unpaid care work in its SNA classification) for measurement and greater recognition of unpaid care work.

Reduce

Reducing the burden of Unpaid Care Work responsibilities assigned to women significantly lessens their time poverty and positively impacts their mental and physical well-being. Availability of time endows women with the ability to make economic decisions, be at leisure and develop personally. For working women, it alleviates the double burden and raises productivity at the workplace. The aforementioned benefits can only be realised by stakeholders if the government and private institutions work synchronously and take the incumbent steps to do so.

In this subsection we discuss three key spheres with immediate relevance to reduction of unpaid care work:

1. 1. Prioritising investment in public infrastructure and improving accessibility to basic services such as energy, regular potable water supply, sanitation, and food security especially in rural areas help women carry out everyday chores more efficiently and also limits exposure to the coronavirus. For instance, under the PMUY women spent 49 minutes less on domestic work and 1 hour more on paid work.54 Concrete measures must be taken to enhance execution and ensure that the advantages of these state schemes reach the beneficiaries without any scope for corruption.

● Pradhan Mantri Ujjwala Yojana- Minimising cylinder refill costs which usually range from Rs 700-800 (Rs 859 in February 2020).
● National Rural Drinking Water Programme: Strengthen contract management ,monitoring mechanisms and maintaining quality of water55.

2. Promoting growth of the care economy: the function of the emerging care economy is to supply, share and assist caregiving efforts including childcare, care for the elderly, disabled and the ill. It tremendously eases the load on women and facilitates their involvement in several other activities especially since demands for caregiving needs have skyrocketed in the wake of the pandemic.

- Establish the formal employment status of ASHA and Anganwadi workers, recognise their contribution as frontline healthcare workers in the pandemic by ensuring provision of decent wages with regular incentives and proper protective gear.

3. Family friendly employment practices: Introducing policy-level change at formal workplaces to address, sensitise and reduce the burden of unpaid care work on women in an effort to boost productivity and reduce fallout rates. A few best practices that can be adopted in this regard include:

- Zomato's introduction of equal 26 week long maternity and paternity leave in 2019 has set a benchmark for organisations and government policy to adopt arrangements for gender balance of caregiving in India. India's labour laws do not include a provision for paid paternity leave and hence there exists an irregularity in its grants across public and private organisations. The government should try to aim for a policy that reflects the importance of caregiving regardless of gender, reviving the guiding principles behind the Paternity Benefit Bill (2017). The paternity and maternity leaves must be equal and made non transferable to the mother on a 'use it or lose it' basis. Allowing the maximum possible salary payment under paid leaves to encourage fathers belonging to both high and low income groups to utilise it effectively. Only then can we head towards equitable participation at the workplace and at home.
- Creating flexible working arrangements: ability to work from home, create own working hours under discretion, reduce overtime and provide family support in cash or kind. These may include subsidising childcare costs and setting up company affiliated crèches and day-cares under the Maternity Benefit (Amendment) Act of 2017.
- Paid sick leave arrangements: In Austria, employees with care responsibilities for one or more children under the age of 14 can take up to 3 weeks of care leave with full wage reimbursement.59 This measure can be implemented as a special provision in India for the pandemic situation, especially when women may be involved in taking care of the ill at home or dealing with illness themselves. Keeping these paid leaves equal for men and women can ensure that employers do not regard the increased private cost as a reason to favour men over women; treating both at par with each other.

Redistribute

The ultimate aspiration of reform and recommendation is to ease the persisting gender divide and redistribute unpaid care work responsibilities between men and women with community effort. As concluded from our survey, our primary emphasis should be to change perspectives of society when it comes to associating care work with 'unmanliness' and encouraging men and boys to participate earnestly and not only under exceptional circumstances.

- Dissemination of awareness through social campaigns, training workshops and father's clubs as a means to dispel myths, outdated norms and attitudes of toxic masculinity. New fathers must be sensitised to the positive relationship between unpaid care work and fatherhood. This can be done at the workplace through informative sessions conducted from a human resource perspective. In Turkey, for instance, the AECV's Father Support Programme is one such social awareness programme that aims to break gender norms, empower men as active fathers and build healthier perceptions of men towards caregiving and reducing violence in the home. Post enactment in collaboration with over 30 businesses in the private sector,60 results showed that fathers who participated in the intervention became more involved in household chores and caregiving.61 This serves as a testimonial to the tangible change that consciousness coupled with education can bring about.

- Targeting the adolescent demographic and younger men to shift attitudes about masculinity and recalibrate mindsets by introducing interactive programmes and youth-led campaigns. One way to maximise outreach could include the state certifying and appointing dynamic NGOs to conduct sessions at education institutions (schools and colleges). Studies assessing the impact of Program H by Promundo in Mexico and Brazil have found evidence of positive changes among program participants: from more gender-equitable attitudes and behaviours generally, to improved couple communication, reduced gender-based violence, and improved attitudes around caregiving.62 Reportedly, approaches from this program was introduced in 25,000 schools across India,63 making it vital to ensure that similar interventions are scaled up to inculcate a gender-equitable outlook at an early stage in men and boys. .

VI. CONCLUSION AND WAY FORWARD

As a nation chronically impacted by the deeply entrenched patriarchal gender roles, the onset of the COVID - 19 pandemic has further worsened the gap between men and women in shouldering unpaid care work responsibilities. To effectively tackle this issue, we must devise sustainably informed and long-term measures that could positively impact women's freedom, dignity, and autonomy and confer them with newfound independence. It is imperative to perceive unpaid care work as a social responsibility for the betterment of the community which each individual must contribute to, regardless of gender.

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DO INSTAGRAM INFOGRAPHICS AFFECT OUR DECISIONS?

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ABSTRACT

In this day and age of information, it is essential to examine the role of data visualisation tools and social media in shaping the public's opinions, thoughts and actions. The objective of this research paper is to determine the factors that influence the impact that Instagram infographics have on an individual's decision-making process via the multiple linear regression model. According to the results of the study, it is found that people are more likely to be influenced by Instagram Infographics as their exposure to them grows and their perception of these tools improves. The study also elucidates the drawbacks of using Instagram Infographics by discussing echo chambers and fake news as well as the various benefits of spreading awareness, sharing perspectives and educating users.

JEL Classification Codes: D83, D91, I29

Keywords: Infographics, Instagram, Decision-Making, Fake News, Echo Chambers, Visual Learning

I. INTRODUCTION & LITERATURE REVIEW

In this paper, we explore the topics of visual literacy, information design, data visualisation and social media and the role they play in an individual's decision-making process.

The concept of visual literacy was initially developed by Roger Fransecky and John Debes (1972). They defined *visual literacy as a set of vision-competencies that a person can acquire by seeing while integrating other sensory experiences.* In a research study conducted by Maria Avgerinou and John Ericson (1997), the notion of visual literacy is discussed in detail. They believed that the concept of visual literacy developed as a result of the intersection of numerous disciplines. The article also established a parallel between visual and verbal learning, concluding that the former has a favourable influence on the latter's improvement. In addition, they discussed the pervasiveness of visual aids in mass media and its impact on young people's perceptions of themselves, their values, beliefs and environment.

Taking the concept of visual literacy further, we elucidate on the data visualisation tool of infographics. An infographic (or information graphic) is defined as the *visualisation of data or ideas that aims to convey complex information to an audience in a manner that can be quickly consumed and easily understood.*

Banu Inanc Uyan Dur (2014) discusses the relevance of data visualisation during the age of technological change. According to the research, infographics aim to visually portray complicated information on a certain subject in a more understandable manner and are key tools for persuading and mobilising people using social media. Their paper takes an example from the paper written by Kim Tanyoung and Carl Di Salvo (2010). As per the study, if personal health data is portrayed in a more coherent form (let us say, as an infographic), it can assist people to modify their habits. Another example comes from the work of Robert Kosara, et al. (2009). It discusses the transfer of knowledge from specialists to the general public and its positive impact on decision-making, society, and the economy.

In the domain of social media, infographics are used to disseminate information, especially with regard to social, political, economic and psychological causes. When these infographics are shared on Instagram, they are commonly known as *Instagram infographics*.

In the research paper, "Bridging Action Frames: Instagram Infographics in U.S. Ethnic Movements," Darya Kaviani and Niloufar Salehi (2021) discussed how modern-day ethnic movements have begun heavily utilising infographics and social media. Their research yielded the following relevant results:

(1) Instagram infographics broaden involvement by educating participants and boosting information to establish a unified front despite physical, economical, and geographical barriers.

(2) Instagram infographics fit complex concerns into confined slide limits; as a result, activists must develop strategies to combat misinformation and increase movement legitimacy.

(3) While infographics can inspire passive, false, and complacent movement involvement, when combined with concrete non-virtual action, they can produce tangible results.

While most studies explore the importance of visual tools and infographics in persuading and mobilising individuals, there are gaps in the literature about the extent to which such tools play a role in an individual's decision-making, particularly in regard to social media. As previously noted, combining Instagram infographics with non-virtual activities can result in change.

The purpose of this research is to determine the factors that determine how much these infographics influence people to take action. We take a look at how they affect (1) political attitudes, (2) conscious consumption, and (3) behaviour change. While there are numerous benefits to using action frameworks via Instagram infographics, it is also important to recognise the limitations of technologically enhanced visual tools and the use of social media to educate and disseminate information. To cover the aforementioned topic, this study discusses individual beliefs, susceptibility to fake news as well as echo chambers.

II. RESEARCH METHODOLOGY

The objective of this research paper is to determine the factors that influence the impact that Instagram infographics have on an individual's decision-making process. It also seeks to explain the disadvantages and advantages of using infographics on Instagram. The study relies on primary data collected through a Google Forms survey that included 34 close-ended Likert Scale questions. Instagram users between the ages of 18 and 22 were chosen as survey participants. The total number of participants in the study are 199. The questions asked were pertaining to the following topics: exposure to Instagram infographics, beliefs surrounding Instagram infographics, susceptibility to fake news and echo chambers and the impact of Instagram Infographics on decision-making (See Appendix). Two independent variables (beliefs about Instagram infographics and exposure to Instagram infographics) were chosen for analysis.

The dependent variable (the impact of Instagram infographics on decision-making) was calculated by averaging the three groups of questions that investigated the impact of Instagram infographics on political opinions, conscious consumption, and behaviour. The relationship between the aforementioned variables was determined using the multiple linear regression model via the Ordinary Least Square (OLS) estimation technique using R programming language. Furthermore, the drawbacks and benefits of using social media and infographics were discussed via the findings of the survey conducted as well as previous research done on similar topics.

III. RESULTS & ANALYSIS

A multiple linear regression was conducted using the Ordinary Least Square (OLS) estimation technique to examine the relationship between favourable beliefs surrounding Instagram infographics (Independent Variable), exposure to Instagram infographics (Independent Variable) and the extent to which Instagram infographics affect an individual's decision-making (Dependent Variable). It is important to note that as all questions were asked via the Likert Scale, the maximum amount any variable can take is 5 and the minimum amount is 1.

The scatter plots showed that the relationship between the dependent variable and independent variables is linear and positive.

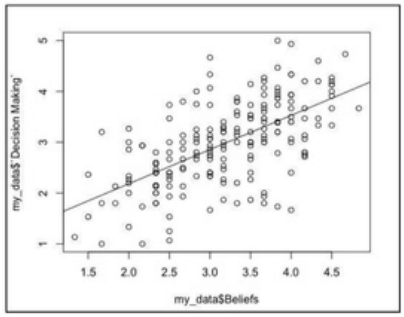


Figure 1: Scatter plot examining the relationship between favourable individual beliefs towards Instagram infographics & their impact on decision making

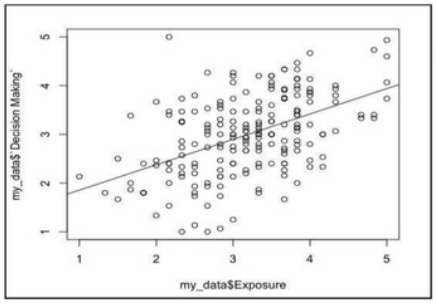


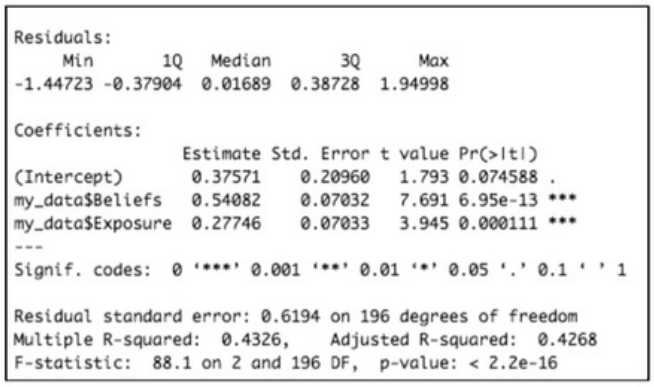
Figure 2: Scatter plot examining the relationship between exposure to Instagram infographics & their impact on decision making

:

The model takes the following form:

Yi = B0 + B1X1i+ B2X2i

where
Yi : Average Extent to which Instagram Infographics affect Decision Making
B0: Intercept
B1 : Coefficient of X1i
X1i : Average Extent to which participant i's beliefs are inclined favourably towards Instagram Infographics and Social Media Activism
B2 : Coefficient of X2i
X2i : Average Amount of Exposure of participant i to Instagram Infographic
N or the total number of observations: 199



```
Residuals:
     Min       1Q   Median       3Q      Max
-1.44723 -0.37904  0.01689  0.38728  1.94998

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)      0.37571    0.20960   1.793 0.074588 .
my_data$Beliefs  0.54082    0.07032   7.691 6.95e-13 ***
my_data$Exposure 0.27746    0.07033   3.945 0.000111 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6194 on 196 degrees of freedom
Multiple R-squared:  0.4326,    Adjusted R-squared:  0.4268
F-statistic:  88.1 on 2 and 196 DF,  p-value: < 2.2e-16
```

Figure 3: Results of Multiple Linear Regression Model

The Sample Linear Regression Formula is as follows: Ŷi = b0 + b1X1i+ b2X2i where b0 , b1 and b2 are estimators of B0 , B1 and B2 respectively. On the report of the regression run by the OLS technique, the estimated coefficients are

b0 = 0.376
b1 = 0.541
b2 = 0.277

The robust standard error technique was also conducted to obtain unbiased standard errors of OLS coefficients under heteroscedasticity. The independence of residual errors was confirmed by the Durbin-Watson test (d = -0.014, p-value = 0.822). According to the jarque-bera test, the residuals are also normally distributed (X squared = 0.39643, p-value = 0.8202).

The overall regression was statistically significant (adjusted r-squared = 0.4268, F (2, 196) = 88.1, p < 2.2e-16). It was found that X1i significantly predicted the response variable (b1 = 0.541, p < 6.96e-13). The second explanatory variable X2i also significantly predicted the response variable (b2 = 0.277, p = 0.000111).

- The model's goodness of fit, as measured by adjusted r-squared values, is 42.68 %. This means that the independent variables can explain 42.68 % of the variability in the response variable.

- As b1 and b2 are positive, it indicates that as the value of the independent variables increases, the value of the dependent variable also increases.

- The estimated value of b1 implies that if the average extent to which participants' beliefs that are disposed favourably towards Instagram Infographics increases by one unit, then the average extent of the infographics' influence on our decision-making increases by 0.541 units (keeping other explanatory variables constant).

- The estimated value of b2 implies that if the average amount of exposure to Instagram infographics increases by 1 unit, then the average extent to which Instagram infographics affect the participants' decision-making increases by 0.277 units (keeping other explanatory variables constant).

- The intercept, that is, b0, equals 0.376; this implies that if there is no exposure to Instagram infographics and the beliefs are not favourably inclined towards Instagram Infographics, then the expected value of the response variable is 0.376. However, the interpretation is nonsensical as it is necessary to have some exposure to Instagram Infographics for them to have an impact on one's decision-making process.

IV. DISCUSSION

Do Instagram infographics affect our decisions? What factors affect our decision-making on social media?

In this study, (after keeping variables such as gender and political affiliation constant) the decision making process of the individual is assessed by looking at how Instagram infographics affect an individual's (1) political attitudes, (2) conscious consumption and (3) behaviour. The topics in the questions of the survey ranged from perception about political parties and public policies, to the practice of buying from eco-friendly, minority-led businesses, to the habit of attending protests, donating to causes as well as to the manner in which one views and treats people from different communities. The degree to which such tools affected the decision-making and behaviour varied across all participants. However, our analysis found that the changes could be linked to two factors: the way the participant viewed such tools as well as the exposure they got to them

According to the multiple linear regression conducted, the extent to which individuals get influenced by Instagram infographics increases when the exposure to them increases and when individuals have more favourable beliefs towards them.

Here, individual beliefs are linked to personality features that determine whether a person believes that *personal is political*, that is to say, whether they believe that their personal decisions and political ideology are intertwined and whether they believe they can individually bring about political change. They also reflect how favourable they are towards Instagram infographics and social media activism, — in other words, it reflects the extent to which the participant believes that social media mobilisation leads to change and Instagram Infographics aid in sharing perspectives and creating awareness. An increase of one unit in the extent to which our beliefs are tilted in favour of Instagram infographics enhances the extent to which Instagram infographics influence our decision making by 0.277 units.

Exposure to Instagram Infographics is characterised by Instagram Usage, the number of pages the individual follows that post infographics and the extent to which the individual's followers or friends share these infographics personally. Hence, the results show that as an individual's followers/friends share more and more infographics, it is more likely that the individual bases their decision on the information parted by the infographics. An increase in the amount of exposure to Instagram infographics by 1 unit, increases the extent to which Instagram infographics affect our decision making by 0.541 units.

Previous research has shown that infographics and social media can yield transformative results. Darya Kaviani and Niloufar Salehi (2021) noted how modern-day ethnic movements have begun heavily utilising infographics and social media. Their research discussed how infographics might encourage passive and complacent movement participation unless they are combined with concrete non-virtual activity. One of the pertinent findings of their research was that action-oriented infographics are very effective at generating action-oriented dialogue. Huseyin Bicen & Mobina Beheshti (2017) investigated the perception of students about infographics in education and concluded that students believe that infographics make learning faster, increase creativity and imagination, and broaden people's knowledge. Finally, Sarah E. Krejci, Shirma Ramroop-Butts, Hector N. Torres, and Raphael D. Isokpehi (2020) concluded that infographics can improve advanced metacognitive skills and foster critical thinking, resulting in changes in decision making.

Echo Chambers and Fake News

In this study, our aim includes exploring the drawbacks of accepting Instagram infographics as a source of news and a way of learning. Social media platforms give users instant access to a massive amount of information. Content promotion is mediated and influenced by feed algorithms, which take into account the tastes and views of users. This has a major impact on the formation of public opinion, policy-making and public discussion. Social media users favour material that supports their worldviews and dismisses information that contradicts them. Furthermore, this polarisation spreads disinformation quickly. (Matteo Cinelli, Gianmarco De Francisci Morales, Alessandro Galeazzi, Walter Quattrociocchi & Michele Starnini, 2021)

A major counterargument to Instagram Infographics is the concept of the Echo Chamber. Due to the information bubble, Instagram infographics do not penetrate all location constraints, and information is likely to remain within these concentrated bubbles. About 57% of all the participants of our study reported that their Instagram feed shows infographics and posts depicting the same ideology. Another finding of the survey indicated that about 67% of the participants do mute other users due to differences in opinion either to some, a good or a great extent.

Another pertinent disadvantage is the spread of misinformation, especially in the realm of social media. According to the survey conducted for this study, only 17% of the participants check the sources of the information given via Instagram Infographics to a great extent.

Huseyin Bicen & Mobina Beheshti (2017) interviewed several activists about the utilisation of social media in ethnic movements and discussed possible solutions to the issue of fake news. Carmen Perez, one of the activists, recommended sticking to a precise infographic layout, which included a header slide, a definition slide, argument slide(s), and, most significantly, a source slide. Including resources, she claims, can encourage people to trust, follow, and promote the cause. She also advocated for the openness to change one's mind when new information is presented, as well as the willingness to make real attempts to communicate the truth. Another activist, Zoha Raza, underlined that the Instagram comments section functions as a built-in fact-checker, something that is typically lacking in newspapers and magazines. Hesham Jarmakani discussed *Instagram Inception*, a concept in which users create their own infographics in order to fact-check existing infographics.

Compacting Complex Ideas: An Incomplete Education or a Strategic Way of Sharing Perspectives?

By distilling complicated issues into easy-to-understand entry points, Instagram infographics have the potential to reach a wider audience. An infographic serves as a gateway to offline dialogue and movement instruction that extends beyond the infographic's borders. People that don't have a lot of time, training, or don't know where to begin should use infographics (Huseyin Bicen and Mobina Beheshti, 2017). As per the results of the study's survey, about 78% of the participants believe that Instagram Infographics help in raising awareness to at least a good extent and about 53% of the participants believe that it aids in sharing different perspectives

However, compacting complex ideas into a few slides does increase the chances of misinformation and misunderstandings. On the brighter side, as claimed by the survey taken, about 69% of the participants thoroughly research a topic before forming an opinion and about 31% of the participants go out of their way to see infographics of different ideologies. The drawbacks of Instagram infographics must be kept in mind, and a serious effort must be made to combat them by examining several sources of news and thoroughly researching the topic before accepting it as genuine.

Questions	1: Not at all	2	3	4	5: To a great extent
Do you agree with the following statements: Instagram Infographics are helpful in raising awareness	1.53%	4.08%	16.33%	21.94%	56.12%
Do you agree with the following statements: Instagram Infographics are helpful in sharing different perspectives	2.04%	15.31%	29.59%	32.14%	20.92%
Is Instagram (or other social media sites) your only source for news and current affairs?	22.96%	33.16%	23.98%	15.82%	4.08%
Do you check the source from which the Instagram Infographic has taken information/data?	16.08%	20.10%	25.13%	22.11%	16.58%
Do you thoroughly research about a cause, event or ideology before forming an opinion?	2.01%	9.55%	18.59%	38.69%	30.65%
Does your Instagram feed show you infographics and posts depicting the same ideology?	5.61%	13.78%	23.47%	34.18%	22.96%
Do you go out of your way to view/follow pages that post infographics that depict a different ideology from what you believe in?	18.09%	23.12%	28.14%	20.60%	10.05%
How often do you unfollow/mute someone based on their political, social and economic opinions and ideologies?	15.31%	17.86%	25.00%	20.92%	20.92%

Table 1: Frequency table of the results of the survey

V. CONCLUSION

The purpose of the study is to establish which factors influence how much these infographics encourage people to act, as well as the limitations and benefits of technologically enhanced visual tools in social media. According to the findings of the study, individuals are more likely to be influenced by Instagram Infographics as their exposure to them grows and their perception of them improves. Users of social media sites have rapid access to a vast amount of data. Instagram infographics have the potential to reach a wider audience, educate people, share viewpoints, and spread awareness by condensing complex subjects into simple entry points. They can be used to transfer knowledge and information from experts or government officials, to spread awareness and catch attention about different causes as well as to directly share different narratives and perspectives. It is a way to strengthen movements, build action frames and change the public's behaviour. However, social media users favour material that supports their worldviews and dismisses information that contradicts them. Furthermore, polarisation quickens the spread of misinformation. It is also important to note that while such tools compact ideas into entry points, they also serve as an incomplete education to users. To provide a solution-based discussion, we look at existing research literature. The disadvantages of Instagram infographics must be considered, and a concerted effort must be made from the user's side to mitigate them. This can be done by reviewing multiple sources of news and thoroughly researching the topic before recognising these infographics as legitimate or resharing them.

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APPENDIX

SURVEY QUESTIONS (VIA LIKERT SCALE)
EXPOSURE TO INFOGRAPHICS
How often do you use Instagram?
Do you follow Instagram pages that post Infographics?
How often do your friends/followers post Infographics related to economic causes in their stories?
How often do your friends/followers post Infographics related to political causes in their stories?
How often do your friends/followers post Infographics related to social causes in their stories?
How often do your friends/followers post Infographics related to psychological causes in their stories?
BELIEFS
Do you agree with the following statements: Personal is Political
Do you agree with the following statements: It is important to keep learning and unlearning
Do you agree with the following statements: Instagram Infographics are helpful in sharing different perspectives
Cancel Culture is an appropriate way to lead way for change
SUSCEPTIBILITY TO FAKE NEWS
Is Instagram (or other social media sites) your only source for news and current affairs?
Do you check the source from which the Instagram Infographic has taken information/data?
Do you thoroughly research about a cause, event or ideology before forming an opinion?
SUSCEPTIBILITY TO ECHO CHAMBER
Are you familiar with the concept of the Echo Chamber?
Does your Instagram feed show you infographics and posts depicting the same ideology?
Do you go out of your way to view/follow pages that post infographics that depict a different ideology from what you believe in?
Are you comfortable expressing a viewpoint that differs from that of your social media followers?
How often do you unfollow/mute someone based on their political, social and economic opinions and ideologies?

TO WHAT EXTENT HAVE INSTAGRAM INFOGRAPHICS:
IMPACT ON POLITICAL BELIEFS
Changed your opinion on a Public Policy
Changed your perception of any political party
Persuaded you to become more politically engaged
Made you question your political ideology and social beliefs
Made you more aware about the difficulties faced by minority groups
IMPACT ON CONSCIOUS CONSUMPTION
Persuaded you to shop from small-scale businesses
Persuaded you to shop from minority-led small-scale businesses
Persuaded you to boycott certain stores, brands or service providers
Persuaded you to buy eco-friendly products
Persuaded you to pursue minimalism
IMPACT ON BEHAVIOUR
Persuaded you to attend protests
Persuaded you to cancel (boycott) certain public figures
Educated you about how to approach a sensitive topic
Changed how you treat or view people from a different community
Persuaded you to donate to a social cause

EFFECTIVENESS OF MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT: A COMPARATIVE STUDY BETWEEN UTTAR PRADESH AND ANDHRA PRADESH

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ABSTRACT

This paper aims to analyze the effectiveness of the Mahatma Gandhi National Rural Employment Guarantee Act by undertaking a comparative study of its performance in the states of Uttar Pradesh and Andhra Pradesh, from 2007-2012. The paper evaluates the Act by looking at parameters such as structural capacity and mechanisms, financial planning, registration of households and issue of job cards, women participation, SC/ST representation, employment and wage conditions and work priority and execution.

JEL Classification Codes: J61, J21

Keywords: Employment, MGNREGA, Uttar Pradesh, Andhra Pradesh

I. INTRODUCTION

The Mahatma Gandhi National Rural Employment Guarantee Act, was passed by the Government of India in the year 2005 and later renamed as the Mahatma Gandhi National Rural Employment Guarantee Act. It came into effect from 2nd February 2006, in 200 backward districts of India, to provide at least 100 days of employment, every financial year, for any adult member of a rural household who is willing to do unskilled manual labour, at the statutory minimum wage. The Act guarantees that work will be made available to anyone who demands it within 15 days of submitting an application and the failure to do so would result in the state being accountable to pay an unemployment allowance.

Hailed by the Government as the world's largest public works programme, MGNREGA aims to ensure a basic minimum livelihood and alleviate poverty. It differs from other poverty-related schemes as it treats employment as a 'right' wherein it contains provisions for minimum wages, worksite facilities, mandatory participation of female workers who comprise a third of the total participants and equal wages for men and women. EmphasisingEmphasizing the process of decentralisation, the programme is anchored on the principles of transparency and grass-root democracy and devolves significant power to Panchayati Raj Institutions in planning and implementing these works and tracks accountability through social auditing.
In its second phase, the scheme was extended to 130 districts during the financial year 2007-08 and by 1st April 2008 MGNREGA expanded to the entire rural area of the country. Being applicable in all districts of the country, the effectiveness of the scheme however does vary enormously across states, with possible factors being the political commitment, lack of accountability, corruption and nepotism, and economic hardships currently being faced by the state.

To study the disparities in effectiveness and implementation of the programme across the country, the paper seeks to provide a comparative study of the performance of MGNREGA in the states of Uttar Pradesh and Andhra Pradesh, based on the latest data available from 2007-12. By looking at various factors such as structural capacity and mechanisms; financial planning; registration of households and issue of job cards; women participation; SC/ST representation; employment and wage conditions, and work priority and execution; and analyse the reasons which made the programme a success (or failure) in the respective states.

II. LITERATURE REVIEW

Banik et al. (2021) analysed in their paper the reasons why the Act is successful in some states and not in others. According to their paper, the success of MGNREGA relies on the readiness of the government to implement it. In Tripura and Chhattisgarh, political will, efficient implementation, and proper supervision of the programme resulted in it being successful. On the other hand, the government of Rajasthan displayed a lack of commitment as it was unwilling to provide jobs under the programme and people were told they could request work only when it was available. In many villages in Uttar Pradesh and Bihar it was found that people could not find work despite demanding it. In some of the relatively richer states like Punjab and Haryana, with low demand for MGNREGA work, the government had not even formed the rules or issued job cards to implement the scheme after seven years (since the inception of MGNREGA).

Hashmi (2017) concluded from his survey conducted in five villages of Ballia district in Uttar Pradesh that immoderate political interference, nature of work and ignorance about the Act among workers are some of the reasons behind the dismal performance of MGNREGA in the area. According to his paper, while Uttar Pradesh had succeeded with respect to higher participation of SC's in MGNREGA, the same was not reflected in the survey district where only 14 percent of the SC population was part of MGNREGA employment during 2013-14. Given the economic distress of the SC's, there was a visible depressing trend in terms of participation of the disadvantaged sections of the population.

Ratan et al. (2016) in their comparative study of Bangarmau block, Unnao district of Uttar Pradesh found huge disparities between the objectives and the actual outcomes of MGNREGA in the district. Though the programme succeeded in providing some monetary aid and short-term employment at some point but at the same time it failed to prevent distress migration of the rural poor to cities and in empowering marginalized sections of the society. Along with poor performance of the scheme they also discovered the malpractice of proxy employment in the villages.

Lakshmi et al. (2018) conducted a study in Krishna District of Andhra Pradesh wherein most of the respondents stated that they were getting less than 100 days of employment during a year. While most of them were satisfied with the programme in reference to the wages paid, timings of work and behavior of the officials, they were unhappy with the process of application, work allotment, and working conditions in the field.

Johnson et al. (2009) concluded in their paper that the Andhra Pradesh government set a high standard for transparency with the public dissemination of information on state-level NREGA participation and identified seven lessons from the data including rapid growth of NREGA in AP despite its stagnant appearance, easy access to job cards contrary to what is stated in mainstream press and similar wages existing across caste and gender but not across districts.

III. METHODS

This paper conducts a comparative study of MGNREGA between Uttar Pradesh and Andhra Pradesh. The study is solely sourced from secondary data in which we have used academic and scholarly articles as well as the government published journals. Audit reports of both the states have also been used to prove the effectiveness of MGNREGA.

IV. DATA

There is a lack of uniformity between the two state reports. In the reports of Uttar Pradesh many of the sections were missing that were to be reported by the government while on the other hand Andhra Pradesh's audit report was quite detailed. The last reports that were available for the states of Uttar Pradesh and Andhra Pradesh were that of the years 2016 and 2012 respectively after which no auditing or investigation was done which creates a lacuna of the availability of data to compare with recent years. The Uttar Pradesh government has not submitted a section of Completion work rate and sufficient evidence regarding the execution of works along with its pictures, which under the MGNREGA act is an important requisite. Therefore researchers were unable to comment upon the progress of tasks undertaken in UP. The data available on the official site of MGNREGA was quite different from the findings that we had achieved. Therefore, the data needs to be checked independently to confirm the findings as certain discrepancies were found between the data available on site and the audit report.

V. RESULTS AND DISCUSSION

Despite the overall achievement of MGNREGA the impact of the program has not been uniform. A study by ESID (the Effective States and Inclusive Development) suggests that differences in states capacity and commitment lead to variation in employment outcomes. States with higher capacity in terms of economic, and human resources can reach their potential beneficiaries (ESID, briefing no.1). The commitment of the states also plays an important role in the success of the implementation of such schemes, since it ensures initiative, transparency, preparation and efforts. These two factors are also interlinked, and these factors are highly dependent on the political and economic factors of the state, which varies across the country.

To understand the factors how the scheme can be implemented effectively, or why there is a stark difference between the performance of the poor and rich state. We have taken two states from each category Andhra Pradesh, with higher capacity and income and Uttar Pradesh, with lower capacity and income.

Structural Capacity and mechanisms

As per the requirement of the Act, under section 12 both the states have formulated the scheme in 2006, and set up the SEGC (State employment Guarantee Council) which is headed by the Chief Minister, which takes care about the monitoring and implementation of the act. However, in the report provided by the auditor till 2012, SEGC of both the states have been practically non-functional (in UP the council only met once or twice, and in AP only eight times).

Mechanisms in both the states

There was an acute shortage of the functionaries in UP ranging from 6% to 53%. The table given below reveals the shortfalls:

Levels	No. Of Units	Functionaries	Requirement	Sanctioned Posts	Persons in Position	Shortfalls in %
GP	51,980	Gram Rojgar Sevak	1	48,946	41,491	15
		Technical Assistant	Not Posted			
Block	820	Additional Programming Officer	1	783	704	10
		Account Assistant	1	792	660	17
		Technical Assistant	1	7931	5398	32
		Computer Assistant	1	745	554	26
		Works Manager	1	72	49	32
		IT Manager with Computer Assistant	1	53	35	34
		Accounts Manager with accounts assistant	1	47	22	53
		Training Coordinator	1	49	36	27
Districts	72	Coordinator Social Audit and Grievance redressal	1	273	256	6

(Source: Information provided by Additional Commissioner, MGNREGS Cell)

The state government of AP has developed an IT system AP MGNREGS MIS, which is a customized application software (RAGAS) in partnership with TCS. Use of technology is one of the major reasons that AP has achieved greater level of transparency compared to the state of UP. This MIS system also have EGS transaction processing system. It helps in avoiding post payments of EGS transactions. The state has also developed several mobile based applications as well, for muster rolls, verification, and work measurements etc.

Information and Educational initiatives

One of the reasons that the implementation of the scheme has been so successful in AP is because they have undertaken measures to educate the beneficiaries and technical assistants by making films on a variety of topics. Helping people understand their rights, training different levels of functionaries etc.

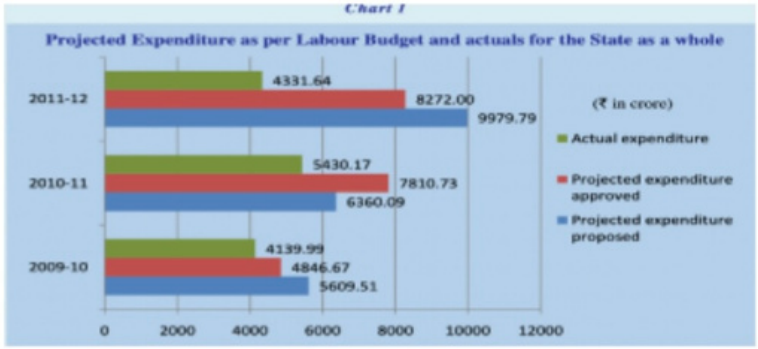
The training programme adopted by the UP Govt. weren't up to the mark. The state government sanctioned Deen Dayal Upadhyaya Institute of Rural Development, Lucknow to conduct the training programmes for the chief functionaries. However it was recorded that only 235 out of 771 sessions were held. These shortcomings were in spite of the fact that the government had allotted Rs 19.88 crore to be spent on the training. Although a huge amount of Rs 7 crore was unspent as of March 2012 which wasn't even refunded to MoRD. The MGNREGA scheme was implemented in UP without any effective distribution of information to the illiterate masses. During the initial phase the government distributed few pamphlets but that wasn't sufficient for vigorous circulation of information. The beneficiaries were not well aware about the scheme and hence were unable to avail the opportunities that could have been made available to them under this scheme.

Financial Planning

Utilization of labour budget

In AP from the year 2009-2012 the projections of the labor budget proposed as well as approved were found to be far higher than what was actually incurred. There was a discrepancy of 85%, 69% and 52% from the year 2009-10, 2010-11, and 2011-12 respectively (this has been indicated in the graph below). The projections of the labor budget have been inflammatory in both the states AP and UP.

An amount of Rs 22,174.35 Crore was spent under this scheme against the sanctioned amount of Rs 22,567 crore during 2007 -2012. The labour budget was not completely utilised. There was lack of maintenance of proper accounting records and instances of funds being released which were more than what the labour budget prescribed for the GPs personal interests. The Labour budget was not based on realistic estimates. The GoI reduced the projected person days from 46793 crore person-day person days to 42000 crore person-daysperson days. But at the same time the budget of 26 districts was affirmed in excess of their labour budget. There were 8 districts whose projected person days were increased by 8.38 lakh. Therefore the district's projected person days, their budget and the person days approved by the government of India did not really complement each other. All the above mentioned factors point towards the lack of planning of fund transfer by the State Government and the corruption that prevails within the local institutions.



Source: Computer Auditor Report no. 5, 2009-12, Andhra Pradesh

Year	Approved Labour Budget	Releases of funds by		Total Releases	Expenditure	Releases excess (+) / short (-) over expenditure
		GoI	State			
2007-08	2,500.00	1,648.31	200	1,848.31	1,898.25	(-) 49.94
2008-09	4686.4	3,944.50	300	4,244.50	3,576.06	(+) 668.44
2009-10	7380.1	5,318.88	550	5,868.88	5,906.04	(-) 37.16
2010-11	8779	5,266.58	499.9	5,766.48	5,627.85	(+) 138.63
2011-12	8787.24	4,355.75	483.97	4,839.72	5,166.15	(-)326.43
Total	32,132.74	20,534.02	2,033.87	22,567.89	22,174.35	(+) 393.54

Source: MGNREGA cell, Lucknow

There have also been incidents where both the state governments have diverted the money on other schemes. As per the MGNREGA act diversion of funds to state sponsored programmes is not allowed. For example, in 2013, Rs.66.95 lakhs from MGNREGA funds were diverted to Indira Jala Prabha project in AP, a state sponsored programme. Data relating to UP diversion of these funds have not been clearly stated.

Registration of households and issue of job cards

In AP as of 2012, job cards have been issued to 124.24 lakh households which is about 35% of the total state population. As per the MoRD's Operational guidelines 2008, household means a nuclear family consisting of father, mother and children. However, the auditor report suggested that in four of the districts of AP some households were large (consisting of 20 or more members). Clearly, the households have not been segregated into nuclear families. Which adds financial burden on such families with only one job card. To which the state government gave immediate response of segregating the large job cards to nuclear families by the end of 2012-13. Further, auditing is required to confirm this, however, it indicates that the government was prepared for immediate response; something which lacks in the UP state government.

Table 6 – 'Large' Households

Household size	Ranga Reddy	Anantapur	Vizianagaram	Nalgonda
	(Number of households)			
20 or more members	40	6	8	10
10 or more, but less than 20 members	751	420	407	804
Maximum household size	65	30	39	28

Source: Computer Auditor Report No. 5, 2009-2012, AP.

Table 7 - Details of non-affixation of photographs on job cards

District	Percentage of photographs not available with job cards verified in audit
Nalgonda	33
Ranga Reddy	40
Kurnool	61
Anantapur	35
Visakhapatnam	38
Vizianagaram	25

Source: Computer auditor report no.5, 2009-2012, AP

It was found that in both the states records of job registration were not maintained at Gram Panchayat level, only at Mandal and state level. This highlights the need to make the ground level institutions stronger and accountable.

The beneficiary survey by the audit team, suggests that in both the states the complete procedure of providing job cards were not followed. The act mandates affixing of photographs on job cards. In both the states it was found that this was not carried out duly. In AP an average of 38.7% of job cards from 6 districts did not have photographs affixed along with the update.

In UP, to reach out to more people no door to door surveys were conducted to identify the people willing to register for job cards. There were about 1298 households who did not receive the job card despite registration thereupon denying them the assured employment opportunity. Photos of 960 beneficiaries were not affixed in the job card register, leaving room for providing employment to someone else instead of the beneficiary who registered.

Women participation and SC/ST representation

This is one of the important reasons why implementation of the act has been more successful in AP than in UP. One of the auxiliary objectives of the act is to empower women (33% reservation for women) and foster equity in terms of SC/ST representation. In the gender-based analysis it was clear that women's participation in AP was far greater than in UP. In AP women were also given employment as Technical Assistants, Assistant Programme Officer, Field assistant, etc. Women's participation is almost half the number of total employees. This showed that there was no discriminating behaviour in terms of employment opportunity against women labour in AP.

Table 21 – Gender-wise beneficiary profile for the State

Financial year	Total Number of beneficiaries provided employment	Number of male beneficiaries	Number of female beneficiaries	Percentage of female beneficiaries to the total beneficiaries
2009-10	1,15,14,361	52,90,557	62,23,804	54
2010-11	1,18,96,383	54,44,190	64,52,193	54
2011-12	91,24,569	41,14,368	50,10,201	55

Source: AP MGNREGS MIS Data

However, in UP it was seen that the representation of women was very low ranging from 14% to 22% in the years 2007 to 2012. It was especially low in the year 2007-08 at about 14%.

Year	Total Employment days Generated (in lakh)	Women Employment Days generated (in lakh)	Representation of Women (in %)
2007-08	7.8	1.06	14
2008-09	12.53	2.68	21
2009-10	20.56	4.07	20
2010-11	26.79	7.35	27
211-12	27.17	5.7	21
Total	94.84	20.86	22

Source: Information collected during audit, UP

In southern India, this trend has been noticed that women's participation exceeds 50%. In north India however, there have been several socio-cultural barriers that have led to male being more benefited from schemes like MGNREGA.

The reason behind this low participation of women (in UP) was that the female labourers were not allowed to work on lands of farmers who weren't from their caste or community. They were not encouraged by their male relatives and people from various castes equated allowing women to work outside their house with loss of dignity and honour to their family (Dutta. S, 2017). In Sitapur district, women who wanted to participate in MGNREGA faced hostility from both panchayats and male relatives. Their names were excluded from job cards, as they were considered "socially unacceptable" and "weak" to work (Dutta. S, 2017).

There is also clear evidence in terms of SC/ST representation. In AP, the government has been able to ensure a representation of SC workers about 25% of the workforce and ST about 15% of the workforce. This is because AP has provided strong backing to the poor; they have done this by promoting and forming Sharma Shakti Sanghas which unionizes poor and workers from lower caste. In 2010, in Anantapur district, a lower-caste worker filed a case against the technical assistant about the compensation of the work. The police took the case seriously under the Harijan Atrocities and the TA was dismissed (Dutta. S,2017).

In UP however, the representation from lower castes remains thin. Reason being for the longest time the state has been ruled by upper caste political parties; it was only after BSP (Bahujan Samaj Party) that interests of lower caste were highlighted. However, the party did not work actively to achieve its goal of fostering social equity. It did not change the bargaining power of the poor, any benefits from the presence of BSP were received by middle income Dalit groups. The poor Dalit families have been excluded from any benefit (Dutta. S, 2017). Lack of political competition, rampant corruption, and embedded hierarchy of caste and class are the major reasons for the hindrance of effective implementation of MGNREGA in UP.

Employment and wage conditions

In the AP audit report, the beneficiary survey states that 91% of people indicated that work was allotted to them within 15 days of registration. About 41% people said there was a delay in payments to about 1-2 months and only 33% beneficiaries received it in 15 days. Also, the act requires the state government to pay the households for working days exceeding 100 days. As per the report from 2009-2012, considering an average wage of Rs.60 per day, in four districts of AP the figure comes out to be Rs.259.72 crores. UP report does provide with any such data, however, presumably the numbers are quite high for it. The states have not taken active initiatives to disperse the wages on time (almost Rs 21.59 crores of wages are un-dispatched in the post office). The audit analysis of AP also revealed that there was very low daily wages in some households. In four districts there were about 367 households in 2011-12 that received wages below Rs.20 per day. There is a strong possibility that these low daily wages are because of the improper measurement of work by the technical assistant. Similarly, the Scheme in UP began with a daily wage rate of Rs 58 in 2007 and was later enhanced to Rs 100. It was increased further to Rs 120 in the year 2011. Labourers in 17 GPs ,6 KPs and 2 ZPs were paid at a rate lower than the one prescribed, leading to a less payment of wages amounting to around Rs 4.50 Lakhs. There were a few districts where the wages to the labourers were paid without measuring the work done which eventually resulted in an irregular payment of Rs 22.29 lakh. It is actually contrary to what the MGNREGA states to achieve.

100 days of household work

The number of households provided work for 100 days or less from 2009-12 has been summarized as below (as per the AP MGNREGS MIS web report). The guaranteed 100 days of employment was provided only to 2 % to 8% of the workers during 2007-2012. The average number of days of employment provided to the worker by the districts in the years 2007 to 2012 was 18 to 29 days.

Table 8 – Profile of employment provided for the State as a whole

Year	No of HHs working	No of HHs completed 100 days	No of HHs completed 75 - <100 days	No of HHs completed 50 - <75 days	No of HHs completed < 50 days	% of HHs completed 100 days	% of HHs completed 75 - < 100 days	% of HHs completed 50 - < 75 days	% of HHs completed < 50 days
2009-10	60,78,121	13,21,149	5,77,644	8,44,335	33,34,993	22	9	14	55
2010-11	61,97,244	9,66,291	6,26,303	10,16,242	35,88,408	16	10	16	58
2011-12	49,98,709	9,74,256	4,81,539	7,33,844	28,09,070	19	10	15	56

Source: *AP MGNREGS MIS web reports*

Year	Total registered households	Person days projected	Person days generated	Avg person days generated by households	Households provided 100 days of employment (in %)
2007-08	20,82,834	3,52,96,651	3,78,04,198	18	8.25
2008-09	32,47,837	8,52,11,377	7,31,53,726	23	6.72
2009-10	35,07,287	13,05,99,855	10,04,10,522	29	6.48
2010-11	37,05,112	14,04,82,827	9,20,86,159	25	6.08
2011-12	39,45,337	11,13,69,282	7,41,05,334	19	2.14
Total	1,64,88,407	50,29,59,992	37,75,59,939	23	5.62

Source: Computer Auditor Report No.4, 2013

The Act guarantees that work will be made available to anyone who demands it within 15 days of submitting an application and the failure to do so would result in the state being accountable to pay an unemployment allowance. One of the major issues of execution that both the states lacked was unemployment allowance. As per, August 2012 data, in AP out of 1,789 beneficiaries who applied for an allowance only 3 have received the payment. It was impossible to verify the details of who qualified for the allowance, due to lack of registration maintenance at Gram Panchayat level. According to the information available at the official site of MGNREGA, UP did not provide employment to many workers within the stipulated time limit which would have resulted in a payment of an unemployment allowance, but an amount of Rs 5.12 crore remained unpaid by the state government. Furthermore, workers from over 25 villages were denied payment of an allowance when they demanded it. Aristocracy still prevails in UP. It's one of the main reasons that workworks against the interest of the backward people. The elites of the society still rule the government associations and deny access toof public development funds to the state.

Year	No. of Districts	Days for Unemployment Allowance	Days For the Allowances Paid	Amount Paid	Amount payable equal to wage rate Rs 100/120 per day
2009-10	71	13629	71	0.07	13.55
2010-11	72	367239	147	0.18	367.09
2011-12	72	109099	0	0	130.91
				Total	511.55

Source: www.nrega.nic.in

Work priority and Execution

Environmentally friendly works have been given priority in AP. Their highest proportion of work is in water harvesting and conserving. The table below clearly shows almost half of the manual work is still under progress.

Table 18 – Profile of works status

	Anantapur	Ranga Reddy	Vizianagaram	Nalgonda	Total
Completed	83,243	23,115	84,524	66,988	2,57,870
Closed	60,150	12,662	38,912	39,695	1,51,419
In progress	94,909	77,315	80,045	1,43,833	3,96,102
Others	126	294	43	161	624
Total	2,38,428	1,13,386	2,03,524	2,50,677	8,06,015

Source: Analysis of electronic data provided by the Department

The Audit of UP noticed that around 5.56 lack out of 15.55 lack i.e 35.75% of the work executed was of low priority and only 9.16% of the work that was given highest priority was executed. The percentage of the implementation of lowest priorities work in the year 2007-12 ranged from 12% to 79% . Inadmissible works such as the construction of earthen roads, large bridges and beautification of ponds, distribution of plants valued at Rs 25.60 crore approximately was also executed. Whereas 19 works were abandoned and 51 works were left incomplete after incurring a heavy amount of 18.19 lakh and 1.76 crore respectively. It was also noticed that the work the state government claimed to have completed according to the records, was not actually executed although a payment of 7.21 lakh was already made, in the case of UP. One of the objectives of the act is to create durable assets for the villagers. The MGNREGA act states that after the execution of the work, the data of working and closing projects must be substantiated with images (AP audit report provides images). UP on the other hand has not provided any images in their audit. This clearly points out that the government is lacking in bringing more transparency to the auditing process. The pictures below from the Audit report (of AP) shows the quality of the work achieved under MGNREGA clearly indicating the quality of work.

- Land development- it was noticed that in almost 60% of the work undertaken in AP lands remained unfit for cultivation, despite being declared as completed.
- Water conservation and drought-proofing - in about 51 works construction of tanks, bunds etc., were not uniform. Top width was not maintained which could lead to slippage during rainy seasons

Source: Computer Auditor Report No.5, 2009-12, AP

Source: Computer Auditor Report No.5, 2009-12, AP

VI. CONCLUSION

India's growth rate has been among the fastest in the world. With growing urbanization and development, the disparity between the rich and the poor has been increasing. The rural population is mostly dependent upon agrarian and allied activities. The rural population presently suffers the most from poverty and deprivation, especially for households with unskilled labour. Rural development, therefore, becomes vital for sustainable growth. MGNREGA as a scheme plays an important role to address this issue, acting as a safety net.

AP has been awarded the first position in transparency, and the district of Anantapur has bagged the second position in the effectiveness of the programme. AP has its problems, but in comparison to UP, it has been more effective. It was clear that it was because UP lacked factors like- more transparency, use of technology, political competition, socio-economic barriers and accountability. There has been a clear difference in the way auditing of both states was done. UP lacked the data of certain parameters, which made it impossible to perform a comparison.

The auditor report of AP from 2012 states that more than 50% of the work was in progress; however, the official website of MGNREGA from 2017 onwards showed AP with a 98% completion of work rate. There are certain discrepancies in data available on the secondary sources. Hence, these findings need to be checked independently.

In the overall impact assessment of MGNREGA, the data clearly states that there has been an improvement in the consumption expenditure; better educational opportunity for children from the participation of women; and an overall increase in the standard of living.

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RESEARCH ARTICLES

FATEFUL REALITY OF INDIA'S 'OVERVALUED' STARTUPS

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It won't be wrong to call the year 2021 'The Year of Venture Capitals'. Having raised a whopping sum of $42 Bn just in a year from VCs all across the world, Indian start-ups have achieved a commendable feat. For the uninitiated, a Venture Capital is a Private Equity firm that pours money into budding enterprises which, given a moat, indicates a tremendous growth potential.

Be it a FinTech, an EdTech or a Cloud Kitchen start-up, VCs have flushed money whole-heartedly, expecting hefty returns in the future leading to the formation of a record-setting 42 Unicorns in a year. For an instance, Paytm (One97 Communications Ltd.) raised $1.1 Bn at an exorbitant valuation of $16 Bn in November 2021. Byju's, India's largest Ed-tech start-up, is not far behind Paytm as it too raised $363 Mn at a valuation of $21 Bn. This list goes on and on, pointing towards a frenzy of VC funding rounds.
Below is a table highlighting funding raised by start-ups in different sectors.

Name	Sector	Valuation (in $ Bn)	Total Funding (in Mn $)
Acko	Fintech	1.1	458
Apna	EnterpriseTech	1.1	94
BharatPe	Fintech	2.9	688
Blackbuck	Logistics	1.0	364
CarDekho	Ecommerce	1.2	248
ChargeBee	Fintech	1.4	218
CoinDCX	Fintech	1.1	97
Coinswitch Kuber	Fintech	1.9	301
Cred	Fintech	2.2	552
Cure.fit	HealthTech	1.5	530

Having said that, let's try to decode the reasons behind these eccentric funding rounds.

1. VCs seemingly believe in the notion that India has an immensely large untapped customer base. With the internet subscribers in India escalating to more than 834 Mn by 2021, money flowing into Fintech based start-ups knows no bounds. Implementation and widespread adoption of Unified Payment Interface acted as icing on the cake, with UPIs reaching 68 Bn in the volume of transactions. Simultaneously increasing E-commerce users is another source of motivation for the VCs, which certainly justifies why Fintech and E-commerce are the most funded sectors across the VC space. Edtech, Media & Entertainment, EnterpriseTech, and HealthTech are riding

the same bandwagon. These sectors have collectively raised a total sum of $14 Bn in 2021.

2. Second, despite all the negatives of the novel coronavirus that took away the lives of many, it was a blessing in disguise for the Tech-based start-ups. People, restricted within the four walls, were forced to adapt to technology for their basic sustenance, be it ordering groceries from Grofers or medicines from PharmEasy on their mobile phones. In totality, everything contributed to the positive sentiments created towards the technology firms. Hence, the sky-high valuations.

3. Another reason for the spike in Venture funds is the booming equity market, following the bullish sentiment. From March 2020, when the Nifty 50 hit the rock bottom, to February 2022, there has been over a 100% increase in the price of the index. A similar trend is being seen in India's oldest stock index price. This bullish price movement came out as an advantageous factor for VCs to exit the start-ups with massive returns, encouraging other VCs to invest.

Although the reasons stated above seem to justify the eccentric funding rounds by the VCs, the problem lies in the fact that fundamentals such as EV/Revenue, Average Revenue per Customer, Monthly Recurring Revenue, Customer Lifetime value, etc. have lost their charm among VCs to determine valuations. Instead, they are motivated to invest by a sense of urgency, supply and demand, FOMO, and growth-driven excitement. This interestingly brings up the concept of "Greater Fool Theory", which is defined by Investopedia as – "Valuations go up because people are able to sell overpriced securities to a 'greater fool', whether or not they are overvalued." This essentially points toward being totally ignorant of the earnings, profits and other fundamental metrics while pouring in money because there will always be the greater fool to offer a greater price for the start-up (obviously, till the bubble lasts).

Now, the question which arises is why should anyone even be bothered about these high valuations. Let's understand why.

Owing to the above reasons, the VCs kept on funding the start-ups at higher and higher valuations with not so high revenues and negative net income in most cases. So, when these start-ups came up with their Initial Public Offerings and got listed in the Indian stock exchanges, initially they fetched huge listing day gains to the retail investors probably due to high liquidity in the market, though in some IPOs, investors also incurred losses (as in the case of Paytm). But today, the share prices of these supposedly fairly-valued start-ups tell a different story altogether than what the retail investors would have had expected.

Given below is a table that depicts the comparison between the listing day price and the last traded price of various listed start-ups in India.

Name	Listing Day Price (in INR)	Last Traded Price (in INR)	% Change
Nykaa (FSN EV Ltd.)	2358	1299	-45%
Zomato Ltd.	126	79	-37%
PB Fintech Ltd.	1332	666	-50%
RateGain Travel Tech Ltd	340	300	-12%
FINO Payments Bank Ltd.	544	259	-52%
Paytm (One97 Comm Ltd.)	1561	790	-49%

By looking at the above table, one can easily say it's a no brainer that the share prices of the over-hyped start-up IPOs have been beaten down ruthlessly, resulting in massive losses for the retail investors who had too much hope and expectations from these IPOs which are highly overvalued since day one of listing and even before that.

Second, not every start-up which promises a high growth prospect can stand up to its promise. As in the case of LIDO Learning, an ed-tech start-up that started in 2019 is facing some serious set of problems. The company has defaulted multiple customer refunds, resulting in a large number of police complaints being lodged against them. Secondly, due to a paucity of free cash flow, LIDO Learning is quite unable to pay its employees properly and has also downsized its team by roughly 70%. The money which it raised to fund its growth and expansion was not properly utilized, and the VCs which funded LIDO Learning on its inflated valuation does not seem to get anything in return if the start-up shuts its doors. Such an example explicitly shows how overvaluation can lead to serious problems for investors, employees and clients alike.

To cut the long story short, it's high time that along with growth potential, fundamental metrics shall also be taken very seriously at the time of valuation of the new-age start-ups which are primarily built around technology. Although disruptive technology is no doubt an important element of success, credible business owners and not-so-complex business models are equally crucial. At the end of the day, it's the retail investors who bear the grunt and thus they shall be on the lookout for various red flags and chances of over-valuation.

ANEMIA: THE HIDDEN PANDEMIC

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The *National Family Health Survey 5* (NFHS 5) reveals the glaring truth of the extorted and ignored health of women and children in India. Anemia, a condition crucial in determining the overall well-being and future productivity of an individual, has been detected across all age groups in the country, especially among women and children. The data reveals that 67.1% of the children between 6-9 months and 57% of the women aged between 15-49 in the country are afflicted by the disease, despite several desperate measures by the government over the years to control its prevalence. Anemia, in general, implies a debilitating condition caused by the lack of adequate red blood cells in the human body leading to low hemoglobin count and reduced oxygen flow. Its causes can be many and are not just restricted to the commonly stated reason of low dietary iron intake. In India, iron deficiency anemia accounts for more than 3% of all disability-adjusted life years (DALYs) lost.

BEYOND JUST A MERE WEAKNESS

As the above data reveals, more than half of the female population aged 15-49 in the country are anemic as compared to only a quarter of the male population belonging to the same age group. This difference can be explained by the fact that women in the above stated age group are in their child-bearing age, implying possible pregnancies and regular menstrual cycles. Each pregnancy can cause a loss of 500 mg of iron from the body while menstrual iron losses range from 4-100 mg of iron, causing unmet needs for adequate iron levels in the body compared to men. The normalization of anemia as just temporary weakness of the body further exacerbates the problem and underestimates its consequences. Even without factoring in the cognitive and learning impairments of anemic children, iron deficiency has been found to cause a loss of 0.6% of a nation's GDP on average. In a developing country like India, the figure rises to 11.8% of the GDP, a number of grave concern. Research reveals that anemic women produced on average 5.3% less output in factory environments and had a reduction of 6.5 hours in their contribution to household work. Since cognitive ability is significantly related to hemoglobin levels in the body, the performance of anemic women is affected even in physically non-strenuous fields of work, giving the proponents of the gender pay gap a cause for justification.

THE GESTATIONAL BURDEN OF ANEMIA

Anemia turns a severe cause of concern, especially during gestational periods and can lead to adverse pregnancy outcomes including intrauterine growth retardation, prematurity, low birth weight, cesarean delivery and a significant risk of mortality. Teenage mothers are more prone to complications since they have to provide for not only the nutritional needs of normal pubescent development but also the growing fetus. India has much to worry about in this regard as it has a

teenage pregnancy rate of 21.9%. Iron deficiency has also been linked to postpartum cognitive impairments and behavioral troubles. Another interesting feature of NFHS 5 worth mentioning as proof of extortion of the already impaired female population of India is the significant rise in C-sections in the country, which further increases the risk of developing postpartum anemia and exacerbates anemia related complications. The number of cesarean births in the country now stands at 21.5% of all deliveries as against the WHO recommended rate of 10- 15 %. Anemia during gestational periods can also lead to low iron stores in newborn children and may cause iron deficiency anemia in later life. Since anemic mothers often report a higher rate of insufficient milk, it can lead to early discontinuation of breastfeeding affecting the child's natural development. An important point to be noted is the existing evidence that iron supplements during pregnancy do very little to improve the state of anemia in mothers, implying consumption of these must begin well before pregnancies.

THE URBAN-RURAL DIVIDE

The survey also reports an increased incidence of anemia in rural areas at 58.7% compared to the urban rate of 54.1%. The severe lack of adequate health and educational institutions in rural areas of the nation means that women are often at a loss of proper awareness and medical guidance during times of need. Apart from this, high rates of parasitic infections were found in certain rural areas of the country, of which a significant amount were hookworm infections that can cause iron deficiency anemia. This points to the multi-faceted aspect of anemia and the need to target measures beyond just improving dietary intake.

RAIDING THE FUTURE GENERATION

The high rates of anemia prevalence in 6 – 59-month-old children is equally alarming as that in women. The significant prevalence of anemia in women of reproducing age is definitely a contributing factor to the above rates. Breast milk acts as the main source of iron in infants up to 6 months. However, anemic mothers have a lesser concentration of iron levels in their breast milk and often discontinue breast feeding earlier than recommended as stated above, leading to higher risks of iron deficiency in infants. Since children in the age group of 6 – 9 months experience rapid growth and consequently high nutritional needs, the presence of anemia can cause significant developmental delays, impairing the child's future prospects. A ray of hope with regards to this matter is that adequate medical intervention and provision of iron supplements have been proven to reverse the damage and make up for the loss, though absorption of iron from breast milk by infants is much higher than that from supplements. Delayed Cord Cutting (DCC) after delivery has also been proved to reduce the risk of developing anemia in infants.

PROGRESS SO FAR AND THE WAY FORWARD

While the government over the years has undertaken several measures to control the prevalence of the disease through various programmes such as Integrated Child Development Scheme, National

Nutritional Anaemia Control, Weekly Iron and Folic Acid Supplementation (WIFS), National Iron Plus Initiative etc, none of them have reaped significant reductions in the levels of anemia across the country. A low compliance rate of 30% was reported when it came to the consumption of the freely provided Iron and Folic Acid Tablets. Studies often show that these tablets are consumed consistently only by those women who are aware of its need and are able to cope with the side effects. This implies improved awareness is required for anemia to be perceived beyond just a mild bodily weakness and efforts must be taken against normalizing the condition amongst women and children. Frequent screening of hemoglobin levels must be a priority amongst young females. Public awareness campaigns specifically intended for the purpose must be conducted. Education must encompass topics relating to women's reproductive health and family planning More recently, the Anemia Mukt Bharat Programme was launched in 2018 and aims to tackle the disease through 6 major interventions ranging from the provision of iron and folic acid supplements to employing deworming measures and addressing non nutritional causes of anemia. India does face a long and challenging road ahead when it comes to controlling the debilitating presence of anemia in the country.

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DECONSTRUCTING HUSTLE CULTURE THROUGH THE LENS OF FEMINIST ECONOMICS

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INTRODUCTION

We, as individuals, have an innate attraction to numbers and practicality. Combining the two with perfectionism leads to an unhealthy relationship with productivity, also known as the "hustle and grind" culture. This culture has convinced us that prioritising professional growth and success over personal growth and desires is perfectly normal. We have persuaded ourselves that the more, the better. The more hours we work or the more followers we get or the more tasks we get done, the better.

Given the current state of our economy, the driving forces to hustle may be due to the increase in student loan debt, stagnant wages, professional satisfaction, financial gains and even the uncertainties that come with events like the pandemic. While the motivation to hustle may stem from an obligation to make ends meet, it also serves as a defence mechanism to exceed high expectations and to be seen as indispensable. The physical or emotional bandwidth to sustain the pressures resulting from a hustle culture slowly dies down, which then leads to *burnout*. Hence, it is important to analyse where this defence mechanism of hustling might arise from. (Balkeran A, 2020)

The obsession with achieving high levels of productivity comes from our habit of quantification. We tend to quantify every little thing in our life that we possibly can. We fit our day into a to-do list and fill each corner of it with productivity. Reducing our life to numbers and striving to be pragmatic unconditionally, makes it more malleable and predictable. Hustle culture can also be called devoid of emotion. It idealises a hypothetical being who is practical, rational and always acts according to their self-interest in mind; it idealises homo economicus.

FEMINIST ECONOMICS AND ITS STANCE AGAINST THE ECONOMIC MAN

Feminist economists critique classical economic models and social constructs, drawing attention to the assumptions that they are based on. One such assumption is that human beings always act rationally and are motivated solely by self-interest. Models of neo-classical economics revolve around this hypothetical being, also called the Homo Economicus or the Economic Man (Coase, R. H, 1976). Feminist economists have shown that individuals are more than just rational beings acting independently based on marginal analysis. Instead, they seek to construct a more comprehensive image of an economic actor, one that includes actions motivated by forces other than greed (Schneider, Geoff and Jean Shackelford, 1998).

If we take a deeper dive into the psyche of the *Economic Man*, we realise that impulsivity, sacrifice, love and care: all the traditionally feminine emotions are somewhat missing from the economic models of most texts. Diana Strassman (1998), the co-founder of the International Association for Feminist Economics, says that the Economic Man is a distinctly androcentric metaphor. Although the 'Economic Man' is empowered and free to choose, he is stuck in the limited emotional range given to him: practicality to selfishness (May, Ann Mari, 2002).

Feminist economists' stance against homo economicus makes a base for the field as this idea rejects the institution of family, of selflessness, sacrifice and care work. While we have taken the idea of the Economic Man from Adam Smith's Wealth of Nations, his work is slightly more complicated than that. Nevertheless, we have simplified it and reduced it to a notion that self-interest is the fundamental force of economics. It is a way in which the economy will run flawlessly: we will consume the goods and services we want and profits will be maximised. This greed and sense of practicality have started giving individuals in society purpose. This Economic Man is not just taken as the central idea of economic models but is also taken as an ideal in society. It is this being that most humans strive to become by being part of the hustle culture.

THE PROBLEM OF QUANTIFICATION AND THE NARROW VIEW OF NEOCLASSICAL ECONOMICS

If economics is to contribute to the solution of real-world problems in our global economy, it must look beyond the restricted definition provided by neoclassical economists.8 Feminist economics calls for a new development paradigm that is not dependent on economic growth and does not use the Gross Domestic Product (GDP) as an indicator. (Elsa Duhagon, 2010) Some of the major problems usually discussed are as follows. Taking Gross Domestic Product (GDP) as the measure of economic well-being leads to the non-inclusion of externalities and exclusion of non-market transactions. GDP counts those products that lead to an unhealthy and toxic lifestyle such as cigarettes, and it even sometimes counts war.9 However, it excludes the cost of the mental trauma developed due to destructions created in those wars or the cost of the environmental degradation caused by production. Feminist Economists like Marilyn Waring (1988) have questioned neoclassical economics' emphasis on GDP growth, as well as the related lack of regard for women's issues and climate change.

Quantification, more often than not, does not pay heed to quality. A good example is that access to healthcare does not always imply good quality healthcare, which is equally vital. Lebohang Pheko (2019) says in her ted talk that GDP cannot adequately express us and express the complexities of living life; it does not count good marriages or the beautiful poetries and work of arts we create or the courage we have. This obsession with quantification that society has, mimics itself in individuals' minds. Individuals have begun to place a higher value on the satisfaction derived from professional success: the number of hours worked, the number of achievements, the outcomes of examinations, or the value of one's pay, than they do on relationships, love, and personal growth.

21ST CENTURY: THE TIME TO MOVE AWAY FROM MAINSTREAM ECONOMICS

Kate Raworth (2017), the economist who developed the Doughnut Economic Model, says that Twenty-first-century economists should revolutionise mainstream economics. She suggested the “Doughnut” economic model as a new goal, which reflects all aspects of humanity's thriving life. It is a ring-shaped figure with the foundation of human life on the inner side and the earth's ecological ceiling located on the Doughnut's outer rim. She also advised modern economists to study human norms and networks rather than focusing simply on market mechanisms as a tool for governing. She wants to make economics more inclusive and representative of the intricacies of human life. Similarly, Diana Strassman (1998) sought to promote research that is accountable to the well-being of all people. When examining economic events, feminist economists emphasise the necessity of understanding history and context. They underline the importance of integrating economic models based on beautiful, predictable mathematical equations with human emotions and complexities.

Kate Raworth and many feminist economists push modern economists to question mainstream and classical economics, and we have a huge lesson to learn from that. ‘Hustle Culture’ might be, in some cases, a by-product of social conditioning. Celinne Da Costa (2019) says in her article, 'In a world that is inundated with distractions, busyness, and addiction to hustling, there is merit in taking a step back and looking at the big picture.’ We need to understand the conditioning we have been subjected to, question it and break its shackles. We need to incorporate and embrace cooperation and care, not just in our economic models, but also within our own lives.

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EFFECT OF COVID-19 ON THE INDIAN WEDDING INDUSTRY

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INTRODUCTION

World renowned for its pomp and extravagance, the 'Big Fat Indian Wedding' industry, assumed to be immune to inflation or recession, took a big hit in the Coronavirus pandemic. Unsurprisingly, the past two years have marked a series of significant changes for the industry, which this article aims to discuss.

PRE-COVID SCENARIO

Every year, around 10 million marriages take place in India, each lasting for 4-6 days[1]. A 2017 KPMG report has pegged the Indian wedding industry at $ 50 billion, second only to the wedding market of the U.S.A., with a growth rate of 25-30%[2]. On an average, Indian parents are known to spend approximately one-fifth of their lives' income on their child's wedding. Thus, the typical budget range for Indian weddings is from ₹5 lakh to ₹5 crore[3].
Additionally, The wedding industry in India is not just limited to the event management industry but also involves the jewellery industry, apparel and fashion industry, catering and other services like photography, videography, makeup, invitations etc. [4].
Hence, it is of no surprise that the marriage industry in India — directly or indirectly — is a big contributor to the country's economy, largely because of the diverse products, services and the sheer number of people involved.

IMPACT OF COVID AND THE SUBSEQUENT LOCKDOWN

The advent of Covid-19 Pandemic brought about a nationwide lockdown in March of 2020. Since then, a variety of restrictions have been imposed by the government to curb the spread of Coronavirus which has severely impacted the wedding and associated industries in several ways. Various Covid-19 protocols like night curfew, maintaining social distancing, significantly limiting the number of guests allowed, led to a number of marriages being delayed, shortened or simply canceled in 2020. The following are some of the major trends or changes seen in the industry over the course of the Pandemic.

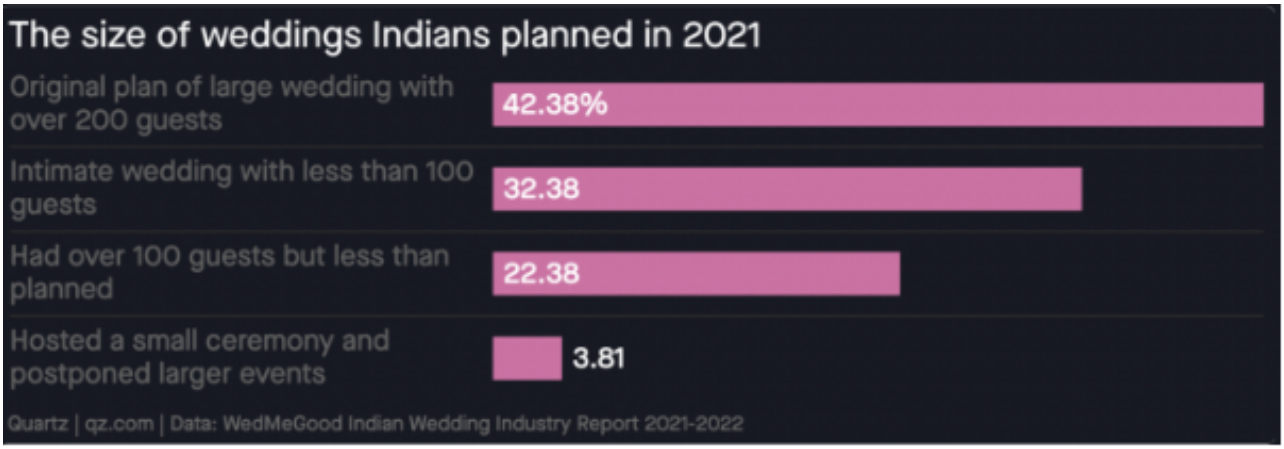
NUMBER OF WEDDINGS

As per a report by Weddingz.in on the wedding trends of 2020, most of the events in this time period took place in Delhi, followed by Mumbai and Pune. The second quarter of 2020 was the worst affected owing to the nationwide lockdown, witnessing hundreds of cancellations. However,

the industry recovered to 75-80% of pre-Covid levels towards late 2020.[5]

SIZE OF WEDDINGS

Coronavirus induced global pandemic and the subsequent restrictions imposed saw the 'Big Fat Indian weddings' turn to small and leaner ceremonies. While more than 250 wedding guests were common in 2019, 2020 witnessed a reduced footfall with an average of 150 guests. Over 60 percent of total weddings held between the months of June and September saw less than 50 people and 8 percent of weddings had 25 people or less. [6] In 2021 as well, there was an increased number of couples who opted for smaller guest lists, flexible schedules, and adhered to covid-19 protocols like ensuring vaccination status of vendors.



(Source: qz.com)

EXPENDITURE

The average wedding expenditure, which was ₹2.8 lakhs in 2019, was reduced to estimated to be ₹1.7 lakhs in August. However, things looked up in December 2020, with an average expenditure of ₹2.4 lakhs on weddings. Interestingly, even though the guest list and the number of functions had to be reduced, many couples did not shy away from spending according to their original budgets and making their intimate ceremonies as grand as possible. Additionally, vendors also charged a higher amount due to import and supply restrictions.[7]

JEWELRY INDUSTRY

India is the second largest consumer of gold in the world, with 60-70% of its gold consumption in the form of jewelry. However, India experienced the lowest sales of gold in the past 25 years because of decreased demand due to the pandemic. Gold sales dropped to 315.9 tons in 2020, from 690 tons last year [8].

DIGITISATION OF THE INDUSTRY

The lockdown and Covid-19 restrictions led to a lot of couples preferring online services to plan and shop for weddings. Many couples also opted for virtual weddings, wherein a few close guests attended offline while the rest joined through an online meeting.

Additionally, matrimonial sites witnessed an increase of traffic by 30% during the lockdown as compared to pre-covid levels. Interestingly, instead of parents taking the lead, 70% of the profiles were made by singles themselves because of increased time at hand to engage with people online [10]. Virtual dates and video calls became the most popular mode for communication on these sites. A recent survey by Jeevansathi.com stated that the amount of video calls increased by 60% during lockdown and as many as 38 per cent of the respondents were comfortable taking a decision based on virtual meetings alone.[11]

ALL IS NOT WELL

While the industry is getting back on its feet and wedding expenditure has increased, digitisation of the industry has led to huge losses and unemployment amongst small retailers. Many people are preferring to shop for wedding clothing, jewelry etc. online, send e-invitation cards, or simply host lesser and smaller functions, which has severely impacted several small businesses.

CONCLUSION

From the above sections, it can be seen that the wedding industry faced its share of ups and downs but is now recovering and expected to return to pre-pandemic levels in the upcoming months. The industry also came up with some creative solutions to the unique situation and is now witnessing a new normal. The conventional ‘Big Fat Indian Weddings’ are now moving towards smaller, intimate, hybrid celebrations. Increased incorporation of technology in wedding planning and execution is also to be anticipated in the near future. Thus, there is no doubt that the Indian wedding industry has a vibrant future ahead.

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ARGUMENTS AGAINST A GENERAL-PURPOSE CENTRAL BANK DIGITAL CURRENCY IN INDIA

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INTRODUCTION

The newest addition to the class of (somewhat) heterodox money forms is a Central Bank Digital Currency (henceforth, CBDC). It is defined as:

"...a central bank liability, denominated in an existing unit of account, which serves both as a medium of exchange and a store of value." (BIS-CPMI, 2018)

CBDC is exactly what the name purports it to be – digital currency issued by the Central Bank[1], albeit one with a record maintained over a distributed ledger (the technology used in various private currencies). A notable point is that a CBDC, though an alternate form of money, is effectively equivalent to 'digital' cash, since cash is the only kind of publicly available central bank money (other forms are meant for financial institutions). It is exchangeable one-to-one with a unit of existing currency.

Despite being a key research consideration for central banks across the world since 2017 (and possibly stretching back to the writings of James Tobin (Tobin, 1985 & 1987)), it is only very recently that CBDC's have moved beyond a purely conceptual stage, with proofs-of-concept and pilot projects being undertaken by leading Central (BIS, 2020).

One must note that there exist various possible forms of a CBDC: for instance, a *wholesale variant* would be restricted to use for wholesale settlements by specific classes of users (such as financial institutions), whereas a *general-purpose variant* would be accessible to the general public for any and all transactions, over and above the aforementioned entities. Here, we shall only consider the case for a general-purpose CBDC.

With the announcement of an RBI-issued CBDC being in the works (Sitharaman, 2022), interest in them has grown exponentially. The decision has been hailed by many who see it as emblematic of a robust central bank, keeping with the times, and investing in the latest payments infrastructure, a field that has grown by leaps and bounds in recent times.
Various reasons have been put forth for the adoption of CBDC's (Auer et al., 2021): lower associated

[1] The last statement may seem tautological, since currency is definitionally issued by a sovereign; yet, the inclusion of 'Central Bank' is important in distinguishing them from private virtual currencies, and what certain commentators have called a 'synthetic CBDC's'(which are technically not a claim on central bank money, and thus, fail to qualify as CBDC's). This distinction, though critical, is often overlooked.

transaction costs, the possibility of greater financial inclusion for the unbanked, a safe alternative to private digital currencies, and a new potential monetary policy tool. Yet, the analysis has ignored a feature of the use of CBDC's that I will seek to illuminate here – whether or not behavioral factors would allow them to be adopted at a scale necessary to satisfy feasibility.
I shall argue against the general-purpose CBDC being launched in our country, in the form that is currently envisioned by the Reserve Bank of India (Sankar, 2021).

STAKEHOLDER ANALYSIS

Given the aforementioned aims, three primary stakeholders emerge in this debate:

1. Financial Institutions: They seek to add 'efficiency in payments infrastructure' as a third pillar to the existing twin-characteristics of reliability and security.
2. General Public:
3. Those who intend to use CBDC for day-to-day transactions
4. Those who currently subscribe to private virtual currencies; weaning them off of such inherently volatile assets has been an oft-stated objective of concerned Central Banks
5. Central Bank: If adoption of CBDC is widespread, then this would provide them a possible monetary tool for the future

Now, (1) would reap the benefits of CBDC regardless of whether a general-purpose variant is introduced or not, since even a wholesale-variant would cater to their interests – thus, they can be excluded from the current analysis. Similarly, (3) would only stand to utilize such a tool much in the future, contingent upon its near-universal adoption and various other key design features.
Eminently, (2), i.eThe general public, is the only truly unique stakeholder that a general-purpose variant would directly cater to; thus, we must analyze the compatibility of their behavioral patterns with the introduction of a CBDC.

CONSIDERATIONS OF INTEREST-BEARING NATURE

The Reserve Bank of India seems partial to a CBDC that would not be interest-bearing (Sankar, 2021). The decision to make a CBDC interest-bearing or not is an important one, for multiple reasons (the latter more so): firstly, any interest-bearing CBDC cannot technically be classed as 'currency'[2] ; secondly, such a CBDC would have to be treated in a separate legal category from currency for regulatory purposes; thirdly, it would have a wide-ranging impact on macroeconomic policy and the banking sector (that shall only be looked at peripherally here).

A noninterest-bearing CBDC seems to be at loggerheads with the stated objective of providing access to a safe, non-volatile digital currency as a substitute for private digital currencies, since the primary interest of those dealing with such monies is profit earned through speculation. Notwithstanding the irony of referring to the speculative capacity of a currency as a virtue, people gravitate towards these currencies in order to earn margins on their rapidly climbing (and often, declining) exchange values. Any alternative to them, therefore, must provide at least an equal incentive to prospective users, in terms of either exchange appreciation or interest.

[2] Currencies definitionally yield zero interest.

Now, since a CBDC would be exchanged at par with a rupee by definition, the only possible avenue remaining to introduce such an incentive (perverse as it may be) would be to make it interest-bearing.

In a manner of speaking, this is sufficiently glaring a contradiction to have proven the point that one of stated objectives of introducing such a currency in the first place stands moot. Yet, there are still other problems with an interest-bearing CBDC:

1.Since, to compete with any private currency, interest rates must be sufficiently (though not terribly) high, they would almost certainly exceed those offered by most savings bank accounts. Such a scenario might naturally lead to individuals transferring their wealth from said accounts to CBDC accounts. If such a drain on bank deposits is large enough, it may heighten a phenomenon known as 'disintermediation of banks' (Ward & Rochemont, 2019), i.e., quite literally, the attenuation of the role of private banks as the pivotal economic intermediary for creating deposits. This possibility has been explored by various Central Banks; they hypothesize that without deposits to lend off of, banks may be driven to riskier modes of credit funding that might destabilize the banking system.[3]

2. Macroeconomically, physical currency leads to what is known as the Zero-Lower Bound, i.e., a natural lower bound on interest, because if negative rates were to prevail, one may believe that people would prefer to keep all their wealth as cash (which yields a superior interest of zero). In a future where traditional currency disappears, this 'natural' bound would vanish, thereby making negative rates much more realistic (BIS-CPMI, 2018). Now, the consequences of such a hypothetical are completely unknown, and in the Indian context, they are also a tad fanciful – thus, they may be safely put aside (yet, for completeness, they have been stated here).

ARCHITECTURAL FRAMEWORK

Another concern is regarding the digital architecture of a CBDC, i.e., whether they would be decentralized or centralized. The former would lead to gains in efficiency, as seen with currencies such as Bitcoin that are completely decentralised – yet, this poses problems of enforcement of cybersecurity features, Know-Your-Customer norms, and possibly, anti-money laundering and counter-terrorism financing (AML/CFT) norms (Bank of England, 2020). A centralized CBDC, though robust in terms of security features, would have to compete with much more flexible private instruments that may seem much more attractive to the public.

In general, a common question in the literature is whether there even exists a sufficient need for government entry into this space, given the proliferation of private players providing wide-ranging options like M-Banking or third-party UPI platforms, which are costless and efficient. For nations like Sweden where barely 9% people use cash (Riksbank, 2022), this is a necessity, so as to not be left behind as populations rapidly switch to digital payments, where private currencies prevail. To apply a similar form of reasoning to India, however, seems to be a logical leap, given the vastly different ground realities.[4]

Moreover, despite claims of 'anonymity' in transactions using a CBDC – often a contentious, yet

[3] A detailed analysis of the same is beyond the scope of this article.

[4] The currency-to-GDP ratio for India stood at an all-time high of 14.5% in 2021, as explained by the Indian Minister of State for Finance, Shri Pankaj Chaudhury, in response to a query posed in the Rajya Sabha on December 21st, 2021.

key, feature of private currencies – such a feature would fundamentally clash with security concerns that underlie any such system. In fact, it seems imprudent to allow anonymity even more so, since this would necessitate the existence of (at least) a quasi-decentralised setup, which in addition to the aforementioned problems, also exposes the system to more potential cyber-attacks, than a corresponding centralized system.

THE UNBANKED

Claims of boosting financial inclusion through a CBDC are quite possibly the least convincing. The idea seems to be that since a CBDC could be held without an 'account' with a bank, it would allow such people, i.e., the 'unbanked', to still make use of swift and efficient payment technology. This ignores the reality that has been presented in multiple 'Reports on Trend and Progress of Banking in India' (RBI, 2017-2021) released by the Reserve Bank of India itself, whereby it is not so much the inability to access a bank account that leads to this financial divide, as it is geographical and cultural factors, in addition to lack of basic technological facilities, such as regular supply of electricity or Internet facilities, that constitute the root cause.

CONCLUSION

From such a preliminary discussion itself, we have been able to glean insights about the incongruity of general-purpose CBDC in India, given how incompatible the stated aims of such an exercise are, with the specific design/architectural specifications we seem to be adhering to. The monetary and regulatory costs of such a development further adduce to its infeasibility.

Still, the arguments outlined here do not detract from the merits of a wholesale CBDC (perhaps even one that is not limited to our own borders), which lends itself much more easily to the adoption of such technology due to a more targeted user-base and use-case.

In any case, the adoption of such ingenious technology shall certainly cause a sea-change in the way money is transacted in the years to come, either as a CBDC or something else.

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THE DOSE OF JUSTICE: IS SCIENCE SELFISH?

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Science is the dress of human thought. Science doesn't discriminate, we, who use it do.
The dictionary defines 'equity' as the quality of being fair and impartial. In the context of the pandemic, vaccine equity points to the practice of egalitarian access to Covid-19 vaccines regardless of gender, race, religion, social or economic status.

The Coronavirus vaccine undoubtedly is the 'Sanjeevani' of the modern era. The pandemic has added another dimension to the measures of a person's well-being, the access to the Covid vaccine. Pharmaceutical companies have attempted to capitalize on this humanitarian crisis resulting in wide disparities, with the rich world rolling out the '2nd booster shot' while the third world countries queuing for their very first dose.

ANGOLA'S CASE: THE 'NOT PRESENT' DROPS IN THE 'RECYCLED PRESENT'

If the quest for vaccines is positioned as a global race, rich nations rule the list and countries like Angola scramble for the last place. The rollout would leave Canada awash in doses given that it has enough vaccines to give everyone in the country almost six shots. Angola is one of 92 countries classified as "low" or "low-middle" income by COVAX, the Covid-19 Vaccines Global Access, and it has been mostly dependent on donations, despite managing to pay for some vaccines.[1] Angola has received donations in the form of three types of vaccines from Portugal, its former colonial ruler. Alrosa, a Russian mining company, has also contributed 50,000 doses of Russia's Sputnik V shot.

In fact, wealthy countries that pledged to donate vaccines through COVAX have been accused of providing near expiry doses to the recipient nations that eventually had to be disposed off. Poorer nations rejected more than 100 million doses of COVID-19 vaccines in December 2021 distributed by the global programme COVAX, mainly due to their approaching expiry date.[2] Does Santa Claus come with the clause of timely delivery of not 'goody baskets' but of drops of desperation where delay can be fatal? Can 'a recycled present' with a fresh wrapping paper help save lives or decrease the risk of infection in a part of the world that is the most vulnerable to outbreaks?

63.5% of the world population has received at least one dose of a COVID-19 vaccine. 10.86 billion doses have been administered globally, and 18.29 million are now administered each day. But surprisingly, only 13.7% of people in low-income countries have received at least one dose.[3]

Equally essential to vaccine rollout are health infrastructure, trained medical personnel, appropriate vaccine storage facilities, accessible vaccination sites, health literacy, and public willingness to take vaccines.[4]

They are critical issues for 3rd world countries and can take the shape of obstructions to achieve complete vaccination. Advanced infrastructure facilities, technical proficiency and trailblazing logistical setups served as a well-founded base for the western countries to administer vaccines. Underdeveloped and developing nations with deficits in infrastructure and limited resources, struggle to make themselves 'injection ready'. The availability of a sound digital infrastructure assumes utmost importance in vaccine rollout. Digitization of health records is a pre-condition to recording covid vaccine data for each individual and its absence can further exacerbate the existing inequities. It is therefore natural that inequity not just stems from the unequal distribution of the vaccine itself but also from the problems associated with developing and funding vaccine delivery supporting infrastructure.

HAS THE COVID VAX TRIPPED ON 'TRIPS'?

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international legal agreement between all the member nations of the World Trade Organization (WTO). It establishes minimum standards for the regulation by national governments of different forms of intellectual property (IP) as applied to nationals of other WTO member nations.[5] Countries like India and South Africa have been advocating a patent waiver for the Covid-19 vaccine thereby allowing for scaling production to enhance inoculation levels. The core idea behind this move is that a monopoly is inappropriate in a pandemic. India remains steadfast in its belief in advancing an IP waiver due to not only logistical but also humanitarian concerns. India has always cherished the ideals of aspiration and collaboration and prosperity of all.

Opponents of the waiver argue that it would discourage investors and pharmaceuticals to invest in innovation and research in the future. They argue that instead of trying to obtain an IP waiver, the Indian government must enable vaccine manufacturers to expand production (through compulsory licensing) & reduce inefficiencies in procurement & distribution.

In November 2021, a coalition of nursing unions from 28 countries and territories – representing over 2.5 million healthcare workers filed a complaint to the High Commissioner for Human Rights, accusing the countries that oppose the TRIPS waiver of a rights violation.[6] Beneath this vigorous struggle, lie the lifesaver drops that would work the same, with or without TRIPS, when they enter a person's body if at all the person is fortunate enough to receive it.

Of late, a provisional agreement among India, South Africa, the U.S. and the European Union proposes granting technical know-how, ingredients and processes necessary to manufacture the Covid vaccine, but needs the approval of the member countries of the World Trade Organization (WTO) to be considered official.

‘OPERATION WARP SPEED (OPS).....OOPS?’

Operation Warp Speed (OPS) is a public-private partnership initiated by the US government that has invested a whopping US$18 billion in the clinical development and trials of the Covid vaccine, which appears to be an exception to the otherwise disastrous management of Covid-19 by the Former U.S. President Donald Trump. While an economic giant like the U.S. could delegate funds and manpower for vaccine procurement, most third-world countries with crashing economies still await donations, their only hope of protecting their people. Bloomberg analysis of country vaccine agreements indicates that Canada, the U.K., and Australia have procured enough doses to inoculate their populations several times over.[8]

While the mere existence of a threat as enormous as an infectious disease should have been reason enough to alarm governments, politicians, pharmaceuticals, and manufacturers, we, unfortunately, find ourselves knee-deep in a ‘selfishness crisis’. Two years into the pandemic, with 8,400 people dying each day, the prospect of anything approaching vaccine equity remains as remote as ever.[9] As a global community, we have underestimated the virus, ignored science, and ascribed a higher value to human lives in the Global North versus the Global South.[10]

The diversity of the human race gives birth to differences that metamorphose into disparities. To an extent, vaccine equity is a utopian ideology, even with the most sophisticated logistical setups and advanced refrigeration techniques, some arms may still not obtain the jab. What seems natural and attainable, however, is ‘vaccine benevolence’, individuals donating for and volunteering to assist their fellow citizens to get vaccinated, and nations with higher rates of vaccination stepping up to help their counterparts. If aid is offered without any shade of obligation or pretence, individuals and countries receiving it would become partners in progress to build back better.

Every dose protects just the same, but it is just only when access to the dose is just the same for all.

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BOOK REVIEW

THE PSYCHOLOGY OF MONEY

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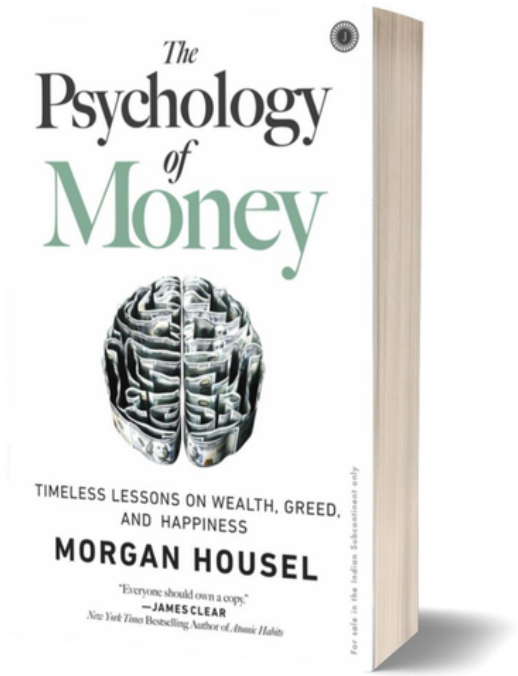
“The hardest financial skill is getting the goalpost to stop moving” - Morgan Housel

In “The Psychology of Money”, award-winning author Morgan Housel talks about investing, personal finance, and business decisions. Housel is a partner at The Collaborative Fund and is a former columnist at The Motley Fund and The Wall Street Journal. The book delves into the psychology behind our financial weaknesses. The topics are dealt with with a thoughtful mix of anecdotes, research, and advice for the reader, which helps in making the topics easy to understand. One would often come across finance books focussing on technical aspects of money and investments, making it difficult for the reader to keep up with all the jargon. However, Housel addresses the often neglected fact that we are emotional, irrational beings, not Return on Investment (ROI) optimizing machines.



In reality, people don’t make financial decisions on a spreadsheet, rather they are made at the dinner table, or in a meeting room, where personal history, ego, pride, marketing, and odd incentives are scrambled together. Investors and consumers behave with flawed attitudes such as overconfidence, impatience, and focalism. He also explains that earning money and managing money smartly are two vastly different areas. Expertise in one does not necessitate expertise in another. He identifies that every outcome in life is guided by forces other than individual efforts- and these are luck and risk. He points out that luck is something we tend to ignore, despite it being as powerful as risk.

One of the most important lessons being taught in this book is that of getting the goalpost right. If you do not understand how much is enough, you will keep desiring more money, more power, and more prestige- but you'll never be happy. The author cites the example of a convicted felon, charged for insider trading, Rajat Gupta. He illustrates the difference between getting wealthy and staying healthy by using the example of Jesse Livermore, one of the greatest stock traders of all time.

There is no secret trick to becoming wealthy; one needs time and skillsets to do it, and that's the golden rule of compounding. The power of compounding can also be applied to saving money. The financial equation comprises two factors: things within your control, and things outside your control. Investments and trading are beyond one's control. Savings and financial frugality are two things that are within your control. If you control for inflation, your savings rate can be 100% as effective today as it will be tomorrow. He also gives some insights into investing for young people. He suggests that if you earn more than you spend, then the best way to optimize returns is to invest the majority of your funds into a diversified portfolio of low-cost index funds.

This book is a perfect read for someone with little or no background in investing and who wishes to get started with something easy to read. It is deeply insightful and does not rely on exotic investment schemes. While the book does not give you an in-depth understanding of finance, it gives you an exceptional introduction for the same and builds a foundation for future learnings.

THE WHY AXIS: HIDDEN MOTIVES AND THE UNDISCOVERED ECONOMICS OF EVERYDAY LIFE

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This piece on behavioural economics is authored by two revolutionaries, John List and Uri Gneezy. Their theories and methods for determining what really works to solve major socio-economic problems have given us a new perspective on the motivations that drive human behaviour. This can be used to create incentives for people to change their behaviour or get a better deal in the business world.

The authors presented some of their experiments and results to understand topics ranging from how women are less competitive than men; how to get “at-risk” American students to catch up with their wealthy peers; how to reduce gun violence in schools; why people discriminate; how to inculcate healthy habits and how charities could generate more donations.

Most of the experiments were conducted in the United States, but the authors travelled to Africa, India, and China to carry out their studies. An interesting study aimed to understand whether women were less competitive than men by nature or by nurture. The experiment included a task that involved throwing a tennis ball into a bucket from a distance of about 10 ft. Each participant would get 10 tries to land the ball in the bucket. Participants were requested to choose one of two payment options: In the first option, participants would receive the equivalent of $1.50 each time they landed a ball in the bucket. In the second option, they would receive the equivalent of $4.50 for each successful pitch, but only if they were better than their opponent. If both participants succeeded the same number of times, they would both get $1.50 for each success.

But if their opponent proved more apt, they received no payment for the experiment. In essence, they had to choose between two options: one in which their payment depended only on individual success, and one in which they would compete with someone else.

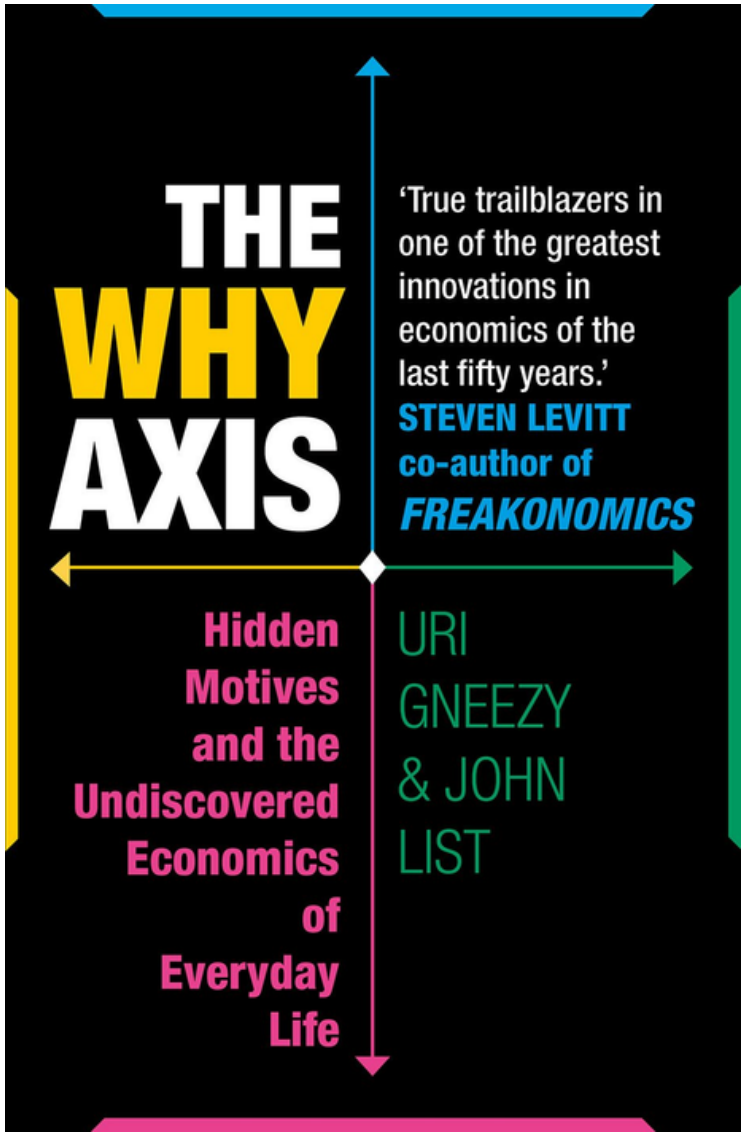
This experiment was conducted in Tanzania with the Masai men and women and also in the Khasi matrilineal society of India, where inheritance flows through mothers to the youngest daughter. The results were surprising. Fifty per cent of the Masai men chose to compete, whereas only 26% of the women did. Similar results were found in the U.S. and other Western countries. On the flip side, 54% of the Khasi women chose to compete, whereas only 39% of the Khasi men competed. Khasi women were more likely to choose to compete than even the patriarchal Masai men. Generally speaking, the Khasi women behaved more like the Masai (or Western) men. It was concluded that given the right culture, women are as competitively inclined as men, and even more so in many situations. Competitiveness, then, is not only set by evolutionary forces that dictate that men are naturally more so inclined than women.

The two authors also conducted a wide range of experiments in Chicago public schools, in areas where virtually all children come from desperately poor and often dysfunctional families. They explored a wide range of ways for students, parents and mentors to improve test scores. The strategy that loss is more motivating than gain was also tested to motivate test-taking students. The test-taking students were given $20 before the test and were made to write what they want to spend the cash on, then allow to keep the cash if their test scores improve. That is better than telling students that they are going to gain $20 if their test scores improve. Here, the feeling of loss of $20 in case they did not perform well was far more effective than the strategy of giving them $20 in case they score well.

Moreover, a great set of field experiments looks at how customers tend to receive price discrimination simply because the seller wants to have more profits and not because of the fact that the seller wants to discriminate against the individuals. It was observed that the customers can often fix the price discrimination – by signalling strongly that they are shopping around or have other available options to buy that good or service from elsewhere.

One such example was disabled shoppers – when they shop without mentioning shopping around or expressing that they have access to alternatives for car repair services, they tend to get much worse deals. In a field experiment, they found that disabled people were given a 30% higher quote for a car repair because it is assumed they would not want to go through the effort of collecting multiple quotes. Surprisingly, if they tell the car repairman that they are receiving 3 different price quotes from different shops, then the repairman gives them an equivalent price quote as able people. This shows how price discrimination is simply motivated by a desire to earn more profits and not discriminate against the disabled person, per se.

And finally, some remarkably interesting experiments teasing out exactly what approach will maximize people's contribution to charity. One question they had was what would result in more giving, saying that the goal was 0% reached, 33% reached, or 66% reached? They found saying the goal was already 66% reached was the most effective. Even though people would need to give less for the charity to satisfy its goal, they extraordinarily gave more, because having the goal partially met provided validation that the charitable cause was valid. Thus, the finding of this experiment can help to redefine philanthropy tactics to generate more donations.



Overall, it was a remarkably interesting book. The most important takeaway is to understand, comprehend and utilize the power of incentives and other tools of behavioural economics to promote and enhance desired behaviour change that can benefit governments, schools, charities and businesses.

SCHOOL OF THOUGHT

THE EUPHORIC RISE OF CRYPTOCURRENCY AND THE PROSPECTS OF INDIA EMERGING AS THE NEW CRYPTOCURRENCY HUB

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As the birth of cryptocurrency crosses a ten-year mark, its soaring prices have attracted millions of investors, with the numbers rising tremendously every year. Its historic growth is something that has stunned investors, corporations, governments and the general public all around the world.

Figure 1: Price Increase in the two biggest cryptocurrencies: Bitcoin (BTC) and Ethereum (ETH)

Cryptocurrency's momentous rise can largely be attributed to it being a **decentralized mode of transaction**. Essentially, this means that no single organization, group or individual holds the power of this currency in its hands. A decentralized currency is backed by every single entity that is involved in its creation. It can be generated by anyone who has sufficient mining resources and hashing power. Over the years, people all around the world have found many innovative ways to mine cryptocurrency like creating mining pools, developing advanced machinery (ASICs) to mine new currency or even setting up large industry-level mining units. An interesting feature of this technology is that every decision made with regards to it is a collective decision of every single party involved (miners, investors etc.). So, all its stakeholders would be responsible for any new change introduced. This ground-breaking idea has been given a huge thumbs-up from around the world and has led to its euphoric rise.

A major chunk of its users are the millennials and Gen Z, and therefore it is safe to assume that the future of the world is popularly accepting the use of cryptocurrencies. The technology that backs cryptocurrency- the blockchain technology, has seen some extraordinary innovation in the past few years. With concepts like *Non-Fungible Tokens (NFTs)*, *Decentraland*, new operating systems, and many different kinds of applications cropping up on the blockchain network, there is no doubt that the usage of cryptocurrency will simultaneously see tremendous growth in the future.

However, since its inception, the government of India has viewed cryptocurrency with much suspicion and has tried to impose stringent measures on its usage. Time and again, they have suggested or introduced policies which can be deemed as "anti-crypto". In March 2021, the government proposed a bill which would criminalize the mining, issuance, possession, trading, and transferring of crypto-assets. Following this, in November 2021, it also proposed a ban on most private cryptocurrencies. The government has cited many security concerns and called cryptocurrency a budding ground for terror funding and illegal transactions. Although there have been certain security breaches in some trading platforms over the years, the safety of the actual blockchain technology is considered to be very strong. With its properties of the **immutable ledger,** which keeps the record of every block intact so if any block is tampered with, the chain is automatically rendered invalid**, a distributed peer-to-peer (P2P) network,** which copies the blockchain across all the networks incase attackers maliciously change the data of a block**, a signature system of public and private keys,** which provides a unique identification code to every user and a **continuously evolving HD wallet system** that ensures greater safety, the security of cryptocurrency has majorly remained intact. Despite the government's resistance, cryptocurrency investment in India has been sky-rocketing. Within just a year (from April 2020 to March 2021), the investment in cryptocurrency increased from **$923 million to around $6.6 billion, which is over a whopping 400%.** In fact, India has about 100 million cryptocurrency traders, which is the largest in the world. Around 9% Indians have claimed to use it.

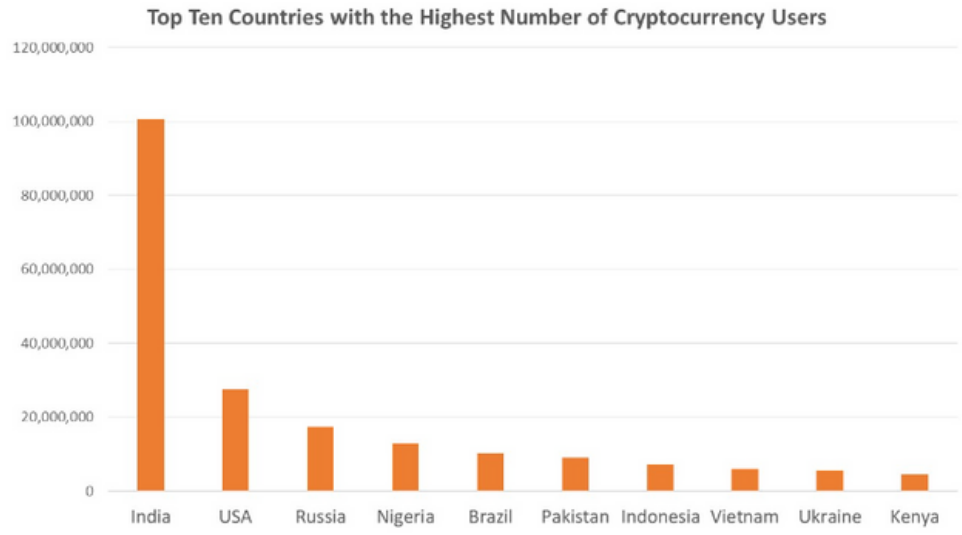

Figure 2: Countries with the largest cryptocurrency users as of 2021

The reason for this unprecedented surge is not just the historic returns that cryptocurrencies offer, but also a general consensus around the world that cryptocurrency is the gateway to the future of transactions. India has a huge potential for emerging as the central cryptocurrency hub in the world. The tech industry in India is already growing rapidly and the start-up culture has been dominating the work arena. With the advent of this new technology, there is bound to be a **rise in job creation** and not just for tech people who are software engineers or data scientists but also for human resource, legal, compliance and sales and marketing professionals. This is because there is still a lot to be uncovered around the cryptocurrency world as there haven't been any standard policies and regulations across industries. India can thus be the primary destination for cryptocurrency startups. One such example is WazirX, which is the largest spot trading digital currency exchange in India. It reported a massive $6.2 billion in cryptocurrency trade in Q2 of 2021.

While there is job creation on one hand, cryptocurrency also has the power to put behind the entire way in which we currently do things in the financial world. The traditional financial systems which require ATMs, huge banking offices that run on 24/7 air conditioning and electricity, paper-currency production and even lockers and large reserves, all of these produce massive amounts of carbon emissions and leave behind a huge carbon footprint. On the other hand, mining cryptocurrency requires only a large amount of electricity as a lot of power is required to back computers performing some heavy calculations to mine a blockchain. India can be one of the largest mining grounds of cryptocurrency worldwide. Moreover, this mining can be carried out entirely **using the vast renewable resources** that the country possesses, a large portion of which remains untapped. Therefore, the growth of the cryptocurrency sector can also fuel India's growth towards a greener economy. This will also support India's goal of becoming a **cashless economy**.

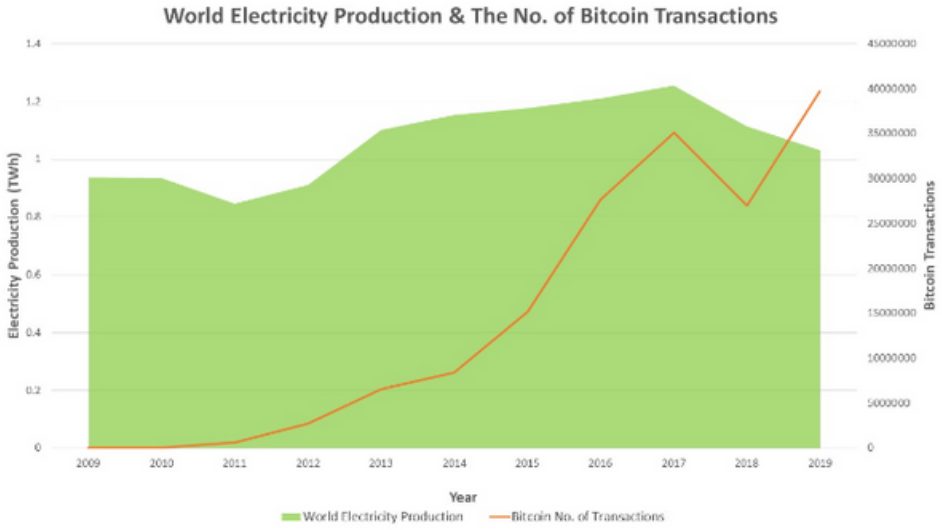

Figure 3: Rising number of transactions in Bitcoin (BTC) and a comparative electricity production worldwide as of 2019

Cryptocurrency is still in its initial stages and there remains a lot to be uncovered about it. By adopting a positive outlook, India can strategically use this opportunity in its favour. As China, which houses the largest mining units of blockchain in the world, continues to crack down on them and impose strict measures on private firms, it can be a golden opportunity for India to direct focus towards itself as the leading developer of cryptocurrencies. Therefore, instead of being wary of it, the government can promote research in this field or at least delegate friendlier policies for its growth in the private sector. This will help India drive the future of development in the cryptocurrency world. It can also help retain its tech workforce. Moreover, further innovation can also **strengthen India's existing financial system** and assist its objective of becoming a digital economy.

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CRYPTOCURRENCY VERSUS THE INDIAN GOVERNMENT

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In the past few months, Indian investors led cryptocurrency start-ups like Coinswitch Kuber and Coin DCX have turned unicorn. While enthusiasts are witnessing this "crypto-hype", the Indian government tends to vacillate between legalising and prohibiting the use of this digital currency. Amidst this dilemma, the zeal of these investors has refused to give in.

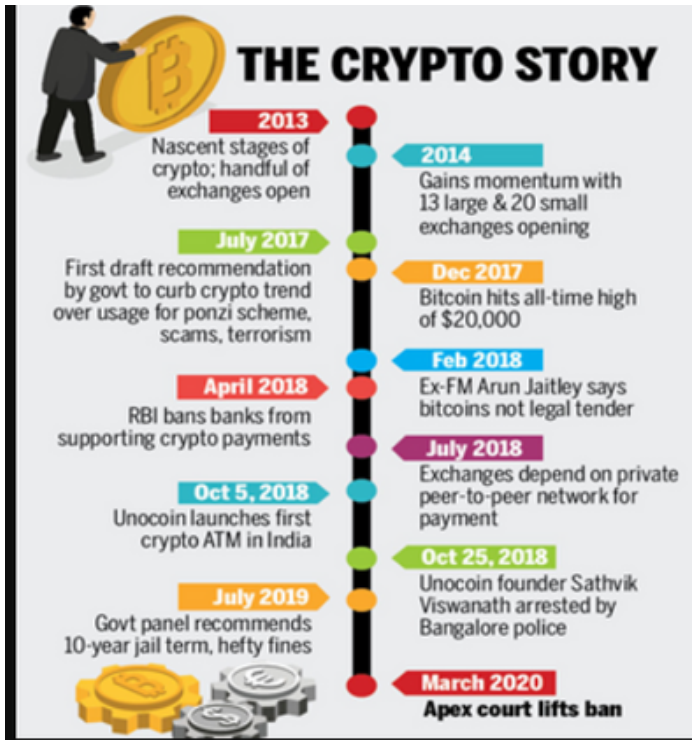
A cryptocurrency is a digitized and decentralized currency issued by a private system that remains out of government purview. This system acts as a facilitator of transactions between two or more parties using blockchain technology. Additionally, it aims to eliminate liaisons like commercial banks, financial institutions etc, and furnish the details of a transaction in a public domain to promote transparency. These include – Bitcoin, Ethereum, Litecoin, Cardano, Polkadot etc. In spite of these advantages, the apex bank has raised concerns in the Supreme Court regarding - operational glitches, potential for fraud and theft, implementation of taxation policies, volatility and the detrimental effects on the environment.

In the course of this commotion, we focus on - the currency's rise to fame, how India can establish and promote a sustainable cryptocurrency ecosystem, the boons and banes of this apparatus, and most importantly – the future.

THE TIMELINE OF CRYPTOCURRENCY IN INDIA

"The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021" has been discussed in the parliament for a prolonged period of time. The first draft by the government created in July 2017 recommended to curb crypto trend over usage as an elaborate Ponzi scheme. It was in April 2018 when the Reserve Bank of India issued to disallow all commercial banks and other financial institutions from facilitating transactions involving cryptocurrencies. Moreover, the government panel went on to recommend jail up to 10 years for parties that deal in cryptocurrencies. Later on, the Internet and Mobile Association of India argued that this industry was put to an end without any formal considerations.

Thereafter, in March 2020, the supreme court bench quashed the central bank's notice on grounds of disproportionality. According to this judgement, RBI failed to display the damage faced by regulated entities. Henceforth, the government had decided to discuss the bill in the budget session. Ever since then, the bill has been debated and cryptocurrencies are under no regulation in India, which makes it a grey area for Indian investors.



imgsource: https://vesim.ves.ac.in/vesimblog/student-blog/397-growth-of-cryptocurrency-in-india.html

THREE-STEP PROCESS TO ESTABLISH A CRYPTO ENVIRONMENT

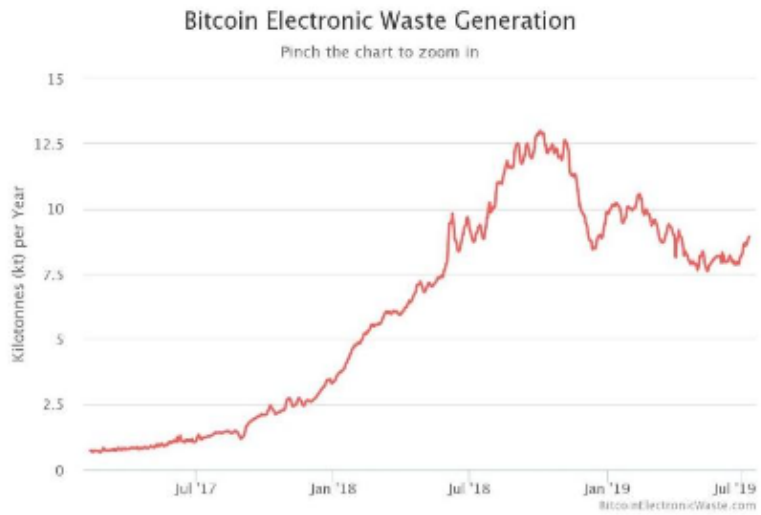
The former deputy governor of the apex bank - Rama Subramaniam Gandhi has suggested a three-step process to address the legal impediments and help ameliorate the cryptocurrency ecosystem in India. These steps are assetization, organisation and monetisation. “With the implementation of these steps, India will revolutionize the blockchain and crypto culture in India ", he said at the HODL 2021 meet. He further addressed tax related snags such as absence of capital gains tax. He proposed that these exchanges have a depository information mechanism which records the purchase, sale and use of cryptocurrencies by the involved parties. However, in order to ensure the anonymity of assets, the exchange needs to disclose detailed information, that is, who sells to whom, and who buys from whom. “The primary concern of the government will be assets an investor bought by a particular investor," he said, beaming at the money laundering aspect of cryptocurrency. On the monetisation front, Gandhi commented that once the Indians get familiarised by the system, adoption will be done on a wide scale. Other issues relating to payment structure will be addressed soon after.

THE RESERVE BANK AND ITS “CRYPTO CONCERNS”

With the introduction of this digital currency, we can rejig the financial structure of India. It brings numerous advantages such as fund transfers between two or more parties without the involvement of a middleman, the transactions take place with a minimal processing fee. Additionally, currencies, with time, tend to decline in value. This causes governments to recklessly increase the money supply in the economy and in turn, add to the ever-increasing global debt.

On the other hand, cryptocurrency offers protection from inflation, the source code specifies a fixed number of currencies to be released in the world. Hence, as the demand for this fixed commodity increases, its value will keep up with the market and prevent the occurrence of inflation. As per blockchain data firm – Chainalysis, Indians have already parked a sum of 6.6 billion dollars in purview of these advantages.

On the flip side, Shaktikanta Das led -reserve bank of India has raised umpteen concerns for the same. In April 2018, the apex bank stated, “In view of the associated risks, it has been decided that, with immediate effect, entities regulated by the Reserve Bank shall not deal in VCs or provide services for facilitating any person or entity in dealing with or settling VCs.” The bank vehemently expressed problems such as technical snags, proneness to hackers. Moreover, terror financing and transfer of funds for unethical causes become facile. Another issue raised was the fatal effects on the environment. Cryptocurrency servers require a stable and high-speed internet to facilitate transactions. According to the financial express Bitcoin generates 242.50 grams of average e-waste per transaction. This accounts for nearly 11.5 kilotons of e-waste in a year.



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THE FUTURE: WILL CRYPTOCURRENCY EVER BE CLASSIFIED AS AN ASSET CLASS?

In layman's terms, an asset class can be defined as a group of financial instruments that are administered by rules and regulation under a governing body. “Cryptocurrencies have a potential future and even though they have fluctuating values, these digital assets might find a way to become an effective means of payment”, said Raghuram Rajan, former governor of Reserve bank of India. Cryptocurrencies were created in the aftermath of the 2008 financial crisis. The purpose was to establish a common monetary system that will eradicate the incompetence of the centralised financial system. But at present, cryptocurrencies are viewed more as a commodity for quick returns rather than as a currency.

According to Reuters, the Indian cryptocurrency market has flourished from a mere five million people in 2018 to approximately 15-20 million people in 2021. Thus, in terms of a digital asset, cryptocurrency demands will keep on rising.

On 17th august 2021, finance minister - Nirmala Sitharaman announced that the first draft of the act was submitted and a cabinet approval under the chairmanship of economic affairs secretary is awaited. Following this statement, Shaktikanta Das stated that “the government and the RBI are committed to financial stability”, he further added that the government is in agreement with “major concerns” about the cryptocurrencies.

THE INDIAN DIGITISED CURRENCY – A RAY OF HOPE

While the future of other cryptocurrencies remains highly unlikely, the apex bank has taken an indigenous approach by declaring India’s own digitised currency will be launched soon.
Top banks have offered a digital central bank currency (CBDC). Ravi Shankar, director of statistics at RBI, said authorities are working on a phasing-out strategy. He added that the central bank is formulating some considerations regarding the scope and legal framework and is likely to coexist with cash and digital payment methods. The verdict on the cryptocurrency bill will be announced at the upcoming 2022 fiscal budget session.

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IS NUDGE A DESIRABLE PUBLIC POLICY TOOL? LEVERAGING BEHAVIOURAL ECONOMICS OF 'NUDGE' TO COMBAT COVID-19

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We make a lot of decisions everyday, a majority of which are influenced by external factors. When you buy a burger, you are most likely to buy fries and soft-drinks when they are offered as suggestions. The instagram notifications you receive on your lockscreen make you want to open the application immediately as it instills a sense of F.O.M.O.(fear of missing out) in you. The notification icons are purposely designed to be red and bright badges, so that they attract your attention. Companies use subtle 'Nudge' techniques to make their customers spend more time and money on their products, thereby increasing profitability.

Nudge theory is a concept in behavioural economics that influences human behaviour by creating human biases. A nudge can be defined as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008).
Behavioural nudges are alternatives to using standard government interventions in markets to influence the choices that people make in their everyday lives. The citizens are not forced into any option and that they have the entire range of choices open to them. Small changes are made to gently push them towards a more desirable alternative.

In recent years, "nudging" has also become a standard behavioural intervention at the individual level and for the design of social policies. Nudging is a public policy strategy that employs positive and negative reinforcements to change a population's behaviour(EurekAlert!, 2020). It gets people to act as per the government's wants, thereby improving social welfare. This approach to public policy was advocated by Thaler and Sunstein in their book Nudge: Improving Decisions about Health, Wealth and Happiness in 2008. Since then, nudging has become an important part of many countries' policy toolkits.

Indian government's think tank NITI Aayog has set up a 'nudge unit' that works towards bringing about behavioural changes and recommending policy corrections to help make the programmes more effective. Swachh Bharat Mission, GiveItUp campaign for gas cylinder subsidy, and Beti Bachao Beti Padhao are some of the campaigns where nudge has been used successfully in recent years by the Indian government.

Figure 1: Push notifications used as nudges

Source: Business Insider

The Center for Disease Dynamics, Economics, and Policy (CDDEP) anticipated in March 2020 that India would have between 12.5 crore and 24 crore people infected with Covid-19 by February 2021. However, as of March 25th 2021, the total number of cases in India was only 11.7 crore. India successfully tamed Covid-19 during its first wave. Much of this success is credited to swift government actions. The **Indian government employed several nudge policies** and attempted to educate people, raise awareness and emphasize the pandemic's severity.

The Indian government used the nudge of 'Nationalism' to fight the virus. On 24Th March, Prime Minister Narendra Modi appeared in front of the media to address the covid situation and declared a nationwide lockdown. He said '...21 days is critical to break the infection cycle...or else the country and your family could be set back 21 years...'. In India, policy nudges were initially implemented that were focused on evaluating the risk of incoming travellers from China and new restrictions were placed on travel, discouraging people from visiting public spaces and strict social distancing were a must. The Prime Minister's constant public appearances played a major role. He nudged the nation to stay at home, adhere to lockdown rules, tackle fake news about the virus and improve immunity through yoga and Ayurveda. His nudging was creating the 'herd effect' (Debnath & Bardhan, 2020). It was essential in persuading people to engage in "Covid suitable behaviour" (Debnath & Bardhan, 2020). Social distancing norms were implemented nationwide.

Warnings and Covid protocols were regularly reiterated on television channels and radios. Masks were worn in public places, hospitals set up isolation wards and massive production of PPE kits, sanitizers and masks were observed.

A lot of nudges were made with social media advertisements, SMS forwards and broadcast media and were targeted to generate internal motivation by using triggers that potentially produces lasting desired behaviour in repeat settings. A pre-call covid message was played across all networks as a default caller tune. This is an example of **choice default** where people are entered into a default setting unless they chose to opt out of it. Such default nudges have proven to be remarkably successful according to various studies. The government even harnessed nostalgia to keep people entertained at home during lockdown by broadcasting popular '80s and '90s TV shows on the national channel, Doordarshan. The Ministry of Human Resource Development also encouraged India's start-up and innovation communities to join the fight against COVID-19 by creating initiatives like the 'Fight Corona IDEAthon'(Debnath & Bardhan, 2020).

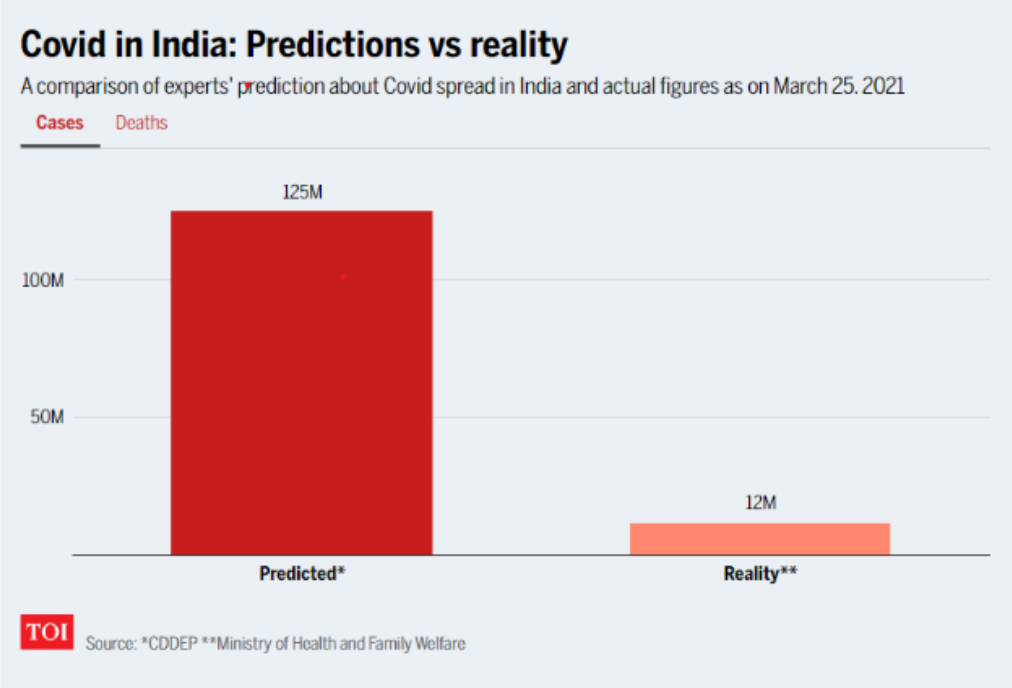

Figure 2: Covid in India: Predictions vs reality

Source: Times of India

Given its large population, India had managed to hammer down the curve more efficiently compared to other countries. To understand the scale of India's achievement, if the US had a population the size of India, it would have 12 times the number of fatalities that India has seen. The Time magazine called this a failure of political leadership at all stages- a distrust of scientists, the media and expertise in general; and deeply ingrained cultural attitudes about individuality amongst the U.S. citizens. (Time, 2020).

This nudging **campaign's long-term positive influence** helped the country become acquainted with the "New Normal." Even after lockdowns were lifted citizens were cautious and used masks and sanitizers as preventive measures. A McKinsey and Company COVID-19 survey conducted in India in November 2020 revealed the success of this Nudge campaign. It was shown that 68 % of consumers were concerned about visiting a crowded outdoor location and attending huge events. Had it not been for the extensive Nudge campaign by the Indian Government, the COVID-19 pandemic could have infected an even greater percentage of the Indian population during its first wave.

However, the second wave of the Delta variant was far more severe in India. After the exemption of covid norms during the later phase of the first wave, Indians portrayed a very **relaxed and casual attitude** towards the pandemic. India was ostensibly battling the extreme deficit of oxygen supply and hospital beds. The 'herd effect' established by the nudge policies wore off as people started attending social events, politicians conducted rallies and religious activities were organised despite Covid warnings. India was reporting nearly 3-4 lakh cases a day. Oxygen supplies were critical, hospitals turned away patients and crematoriums had run out of space (The Lancet, 2021).

Insights from nudge theory can allow policy makers to **improve the design of public policies** since it only influences people to make better decisions instead of limiting their choices. However, nudge does involve some amount of 'trickery' and people do not realise that they are being influenced. It can be used as a tool by the authorities to **manipulate common people**. Some nudges have only **short-term effects** (as evident in the case of India's second covid wave). Therefore, in the use of nudge in public policy, care needs to be taken to see that the **theory is not misused to the detriment of the individuals**. It is **a low-cost alternative** that can be used to **improve policy effectiveness by gently guiding people in the right direction**.

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INDIA'S ROADMAP TO GREENER ECONOMY: AN OPPORTUNITY BEING MADE FEASIBLE

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A green economy is defined as one which can achieve sustainable growth without emitting large volumes of carbon and causing harm to biodiversity. While the common notion towards achieving a greener economy has always been switching to cleaner forms of energy, it can also be achieved by efficient usage of energy.

Being a developing country, India has not shed much thought on the sources of energy that will be fuelling its development. Although it is the 3rd largest emitter of carbon among all the countries and contributes to 6.8% of global emissions, it also happens to be home to about 18% of the world population. Taking the latter into consideration, the country's emissions per capita is significantly lower than that of the USA, China, and Russia.

However, the country is making significant efforts towards the path of a greener economy.

A SHIFT AWAY FROM FOSSIL FUELS

While many of the global economies are shifting towards EV, India has taken a greater step by not shifting towards EV, but rather shifting away from crude. This can be seen in the government's growing interest in flexible fuel vehicles and green hydrogen.

In a recent announcement, the government has made it mandatory for all car manufacturers to produce flexible fuel vehicles (FFVs) instead of just the ones that function on diesel or petrol. Although this is being done to reduce our dependence on crude which in tandem will reduce our import costs, FFVs are less harmful to the environment than petrol and diesel vehicles. This is so because the FFV functions on ethanol which emits lower volumes of carbon and other harmful toxins like benzene.

There has also been some emphasis given towards green hydrogen as a source of energy in the Indian market. It is so because green hydrogen is deemed to be the cleanest source of energy since the by-product of burning hydrogen is only water vapour. However, producing hydrogen is energy-intensive. One of the ways to do this is by extracting hydrogen from water using an electrolyser, which requires a lot of effort because of the stability of the water molecule. The hydrogen procured through this procedure is termed green hydrogen.

With the Rs. 15,000 crore production linked incentive (PLI) being pushed for electrolyser manufacturing in India, the aim of the government is to bring down the costs of producing green hydrogen in the country. With Sentient Labs recently releasing the country's first indigenously developed Hydrogen fuel cell bus, the future of the feasibility of hydrogen as a source of energy in the country seems to be bright.

BUILDING THE INFRASTRUCTURE FOR EV MOBILITY

With the growing popularity of electric vehicles among the public at large, the vehicle manufacturers are also embracing themselves for the surge in demand for these vehicles. Simultaneously, the government is also taking steps that benefit the stakeholders of the EV industry, be it the consumer or the producer.

For the consumer, the government had introduced Faster Adoption and Manufacturing of Electric Vehicles (FAME II scheme). Under this scheme, vehicles are provided with demand incentives that bring down the purchase price of the vehicle. This scheme was introduced in FY 2019-20 for 3 years. However, earlier this year the scheme was extended till the end of FY 2023-24. To date, the FAME II scheme is restricted to only electric two-wheeler, three-wheeler, four-wheeled passenger cars, and goods carrying vehicles. It is being speculated that the government may extend this scheme for the purchase of personal EV cars and e-bicycles as well.

For the producers, the government earlier this year announced a PLI of Rs. 26,000 crores to benefit the auto manufacturers who are shifting their focus towards the production of electric vehicles. This, along with the FAME II scheme and the PLI for Advanced Chemistry Cell (ACC) worth Rs. 18,000 crores, has the potential to bolster the EV market in India.

Buying a new electric vehicle is not the only option the government wants to leave to the public. Recently the Delhi government announced that diesel cars older than 10 years can be allowed on the roads, given that its engine is swapped with fully electric drivetrains. It is planning to do so by enrolling various EV conversion kit manufacturers to execute the conversions. Although this framework is only adapted by the government of one state, it should be considered by others as well because it puts a lower onus on the pockets of the consumer.

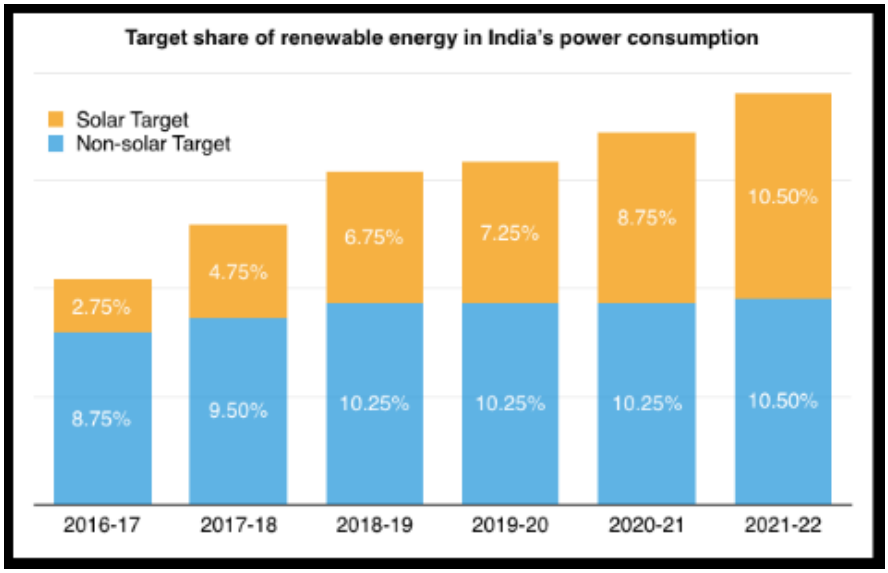
MAJOR CONGLOMERATES LEADING TOWARDS A GREENER FUTURE

For India's success in the adoption of renewable energy, the participation of its major companies is imperative. A successful adoption is possible only if their innovation is in harmony with the government's efforts.

A major role to play amongst all the corporates is that of Reliance Industries Limited. The company has pledged to invest Rs. 60,000 crores in new initiatives over the next 3 years, and an additional Rs. 15,000 crores in the value chain, partnerships, and future technology. They are planning to set up Dhirubhai Ambani Green Energy Giga Complex in Jamnagar, which will span over 5000 acres and be amongst the largest of the facilities available to produce renewable energy around the world.

The company, which makes 60% of its revenue from hydrocarbon fuelled energy operations, has pledged to achieve net-zero emissions by 2035, a target that is 15 years earlier than what global energy powerhouses like Shell and BP have set for themselves. To manufacture and integrate all the critical components of the New Energy ecosystem, Reliance is planning to set up four Giga Factories. Its components include a solar photovoltaic module factory, energy storage battery factory, electrolyser factory, and fuel cell factory.

A couple of important acquisitions in the solar segment from its end include REC Solar Holdings and Sterling & Wilson Solar. These acquisitions can help it to achieve the capacity of 100 GW of solar energy at Jamnagar by 2030. With it foraying into the production of green hydrogen as well, Reliance is targeting to produce it at a rate as low as 1 USD/kg.



A graphical representation of the share of renewable energy in India's power consumption over the years (Source: CleanTechnica)

Adani Group is also planning to invest $70 billion through its various channels over the next decade in a bid to become the world's largest renewable energy company. Adani Green Limited is already the world's largest solar power developer and is planning to invest $20 billion to build a 2 GW/year solar manufacturing capacity by 2022-23. The company has recently signed the world's largest green power purchase agreement and is aiming to be the world's largest renewable energy producer by 2030.

Adani Transmission Limited, which happens to be India’s largest private sector power transmission company is planning to increase the share of renewable energy procured from 3% in the present to 30% in FY2023 and 70% in FY2030.

Tata Power, JSW Energy, and NTPC are a few more companies whose role will be imperative in the path towards a greener economy.

CONCLUSION

Although India is largely dependent on thermal power in the present, its renewable energy sector is the fourth most attractive renewable energy market in the world. While the sector has become attractive from the investors' perspective and the government wants to build a ‘green city’ backed completely by renewable energy in each state, the country does seem to have a promising future regarding the usage of clean energy.

INTERVIEWS

INTERVIEW WITH DR. JOYEETA GUPTA

INTRODUCTION

Dr. Joyeeta Gupta is professor of environment and development in the global south at the Amsterdam Institute for Social Science Research of the University of Amsterdam and IHE Delft Institute for Water Education in Delft. She was the co- chair of the Earth Commission from 2019 to 2021 and is currently a member of the Amsterdam Global Change Institute.

Q1. Ma'am, your work on inclusive development argues for a socially inclusive governance framework where social actors have the freedom to operate, collaborate and exert agency. In this context how can organizations like the UN. and even citizens. push the government to adopt policies derived from the inclusive development theory in the age of neoliberalism?

The shift from sustainable development to inclusive development arose out of the need to address environmental issues beyond economic terms. Hard sustainability requires finding a point at which social, economical and ecological concerns are addressed. But let's take the case of climate change- if the fossil fuel economy is worth 200-300 trillion dollars, then even if we attempt to value social and ecological issues in fictitious monetary terms (for example, if we value the environment at 125 trillion dollars), the decision will always lean towards economic benefit. A plethora of other factors however, such as the social and ecological consequences of an increase of merely 2 degrees in temperature when observed reveal the debilitating effects it has on the productivity of citizens and add a winning perspective to the fossil fuel battle. It still remains difficult to sell the argument to low income developing countries, and even rich countries. In the meanwhile, the perceived need for low income countries to transform into rapidly emerging economies pushes them into a trap of fossil fuel dependency, a dependency that powers their short-term GDP growth. The problem is aggravated by the fact that GDP does not take into account the depreciation of the environment. A ray of hope is that many governments have realised this and are now willing to consider replacing GDP with a better concept. However, talks on sustainability still continue to be centred around economic factors which is disappointing.

Q**2. Your paper "Why Equity is fundamental in climate change policy research" talks about how justice is central to the intersection of climate change and human wellbeing, and to political systems at all levels. The adoption of the 2015 Paris Agreement challenged the common understanding of the principle of equity in the climate change regime. Do you think justice or equity play an important and substantial role in the designing of the international climate change laws in present times?**

Over the years the climate change treaties have failed to remain as equitable as they were in the beginning. The Paris Agreement shows that we have now reached a post equity stage where every country is asked to volunteer what they are willing to do. Rich countries such as Canada and USA, who were supposed to take the lead in the last 30 years to reduce their carbon emissions of greenhouse gases, did not ratify the Kyoto Protocol or the Doha Amendment, and thus did not have any legally binding emission reduction targets. While the idea of voluntary commitment suits the developed countries, it may discourage developing countries from doing their best, even though all countries will suffer from the impacts of climate change. Even if a hindrance were to be caused to the purchase of fossil fuels from developed countries, an example being the border tax adjustment proposal put up by the European Union. Developing countries could easily just trade with each other by 2026. This shows that there is a strong reason to push for justice from a north-south perspective.

From India's perspective, we cannot afford to lose time asking for justice and must take action as soon as possible. Being a tropical country, India is more likely to be adversely affected by climate change. The melting glaciers, rising sea levels and temperatures, and changing monsoon patterns will affect water supply and heat, influencing the ability of people to work, farm and cope. Though we should continue to demand for justice, it shouldn't be at a cost to future generations.

Q3. Ma'am, the carbon markets associated with the cap and trade policy that incentivizes businesses to innovate & reduce emissions has been found largely inefficient, facing issues like very low carbon prices, ineffectively low penalties and fines, false reporting by businesses, and lax enforcement by countries. Why are we still continuing with the same inefficient system and introducing more of the same without any changes and what better alternatives do you suggest in its place?

Carbon markets only work as long as both the parties have legally binding targets. Moreover there has always been an inherent incentive to cheat on both sides. Suppose under the Clean Development Mechanism, a developed nation were to provide a bus to a developing country at a discounted value. The developing nation would replace its worst possible bus with the new one in order to gain more from the exchange, consequently ensuring that the developed nation gets the maximum credits from the transaction. Hence both the parties have an incentive to cheat at the baseline. The system partially worked in the past since rich countries had targets and were buying cheap emission reductions from poorer ones who did not have targets. It meant that rich countries could continue with their exuberant lifestyle by buying cheap emission reductions from elsewhere.

I personally did not think that the system would work out in the first place and the only advantage of it has been that it has opened the eyes of the business community towards climate change. With all countries adopting voluntary targets, poorer countries will wish to use the cheapest options themselves, leaving only expensive options for foreign investor. This will most likely lead the foreign investors to reduce emissions at home. Though domestic markets may exist since it is within a controlled arena, globally the system does not seem viable.

With regards to domestic policies, it is imprudent to expect the 15 super rich nations to provide compensation to the 150 developing countries over the coming centuries of battle against climate change. Even the loans provided will have to be repaid at high interest rates and in foreign currency. It seems much smarter for developing countries to prioritise battling climate change using their own resources.

Q4. Your paper "The multi-level governance challenge of climate change", talks of how even developed countries are facing difficulties using existing regulatory frameworks to battle climate problems. How do you think India is faring in this domain? Do you think decentralization of power and a more localized response towards climate action would be better for a country like India?

You need all the levels and you need all the actors. Although the global target is 2 degrees Celsius and as low as 1.5 degrees Celsius if possible, India cannot afford to run the risk of contributing excessively to climate change since we have plenty of low lying coastal areas, we will face major water shortages and since most of the work in the informal sector occurs outside in the hot sun. India must have its own fallback plan independent of the international negotiations. Climate change will have a huge impact on water which is already a challenge for India. I think we need to have massive demand-side management for fossil fuels in India and you make a shift to other renewable forms of energy. When I was in school in Delhi, ours was the only country with a Ministry for Non Conventional Energy, but over the years we seem to have fallen behind in the race towards alternate sources of energy. There is still scope for wind energy, tidal energy, geothermal energy, water energy and that's where the emphasis must be. The issue is that in India, energy and water, and even the environment are state subjects requiring all the states to work together simultaneously to address both mitigation and adaptation. In the Netherlands, financial support is provided to municipalities to combat climate change and they often use this to hire climate experts. In such a way, proper mobilization of resources and people takes place. In the same way, India will not get the change it wishes unless it is able to mobilize its village panchayats, district heads, and the central government towards the same cause. The focus needs to be more on the well-being of people, than chasing after GDP growth at the cost of the well-being of people.

Q5. Through your paper "The power sector in China and India: greenhouse gas emissions reduction potential and scenarios for 1990–2020", which was published in 2004, you have elaborated on the quantification of the technical potential of various options to reduce emissions of greenhouse gases from the electricity sector in China and India in the year 2020. However China still remains the world's biggest coal consumer with 50% of it's energy production reliant on coal. In view of the present scenario, how do you reflect on the numbers you predicted in your paper back in 2004, and what are your future projections for China?

I don't even remember what I did 20 years ago so I am not going to even try to answer that part of the question. But, what I can say to you is that China is the world's largest producer of solar panels and wind energy. So it is doing a lot. Also, since China is a dictatorial country, it is much easier for it to impose laws which it does too realizing how grave the situation is. Water has become a major problem for China especially since they share the Himalayas with India and climate change is only going to make matters worse. China has heavily invested in solar energy and will definitely explore other alternate sources. Though there remains no doubt that the country is using a large amount of coal, and so are Germany and the US. In China's defense, it is in a better position to move away from fossil fuels as it has over the years developed an exemplary public transport system which is crucial to reducing fossil fuel consumption. A big mistake they made was to reduce their investments in the public transport systems in the 2000s. However increased investments have now resolved the case and will pave the way for electricity based public transport systems further reducing carbon emissions. India needs to invest heavily in public transport systems and making them user friendly for all.

Q6. I would like to ask a follow up question here. On one hand, we talk about how dictatorships might be better placed in implementation of climate change policies more effectively while on the other, we talk about adopting a decentralised approach to climate change. Which power-sharing model do you feel is better in this regard?

Between a dictatorship and a democracy, I am all for democracy since it is infinitely better as long as it is genuine. As far as centralisation and decentralisation is concerned, we need both. We need decentralisation on finance, power, knowledge and the ability to act, but at the same time we also need a centralised vision of where we are going.

There are many ways in which you can reduce your production and consumption of commodities, and these visionary ideas have to be implemented by the central government for everybody. Ultimately we need multi level governance and simultaneous processes.

Q7. Especially in the current scenario where we are facing a time crunch to achieve the SDGs, how do you think we can redirect the government's attention to equally prioritise inclusive development?

A: This duty falls on the youth and the NGOs of today. Only social movements strong enough to put pressure on the government can cause a shift in the system. For this you need to find allies and mobilise people who relate to the cause. 'Fridays for Future' is a good movement that involves schools children in the climate dialogue. Do note that science should also play a significant role in these movements. Social movements have successfully been using courts to push for stronger action. India used to have a stronger judiciary. Perhaps the judiciary can still be a place to claim for stronger action on climate change. Bhutan has been experimenting with using Gross National Happiness as an indicator of well being.

Q8. Ma'am, how do you think we can maintain the 3 dimensions of inclusive development which as highlighted by you are social, ecological and relational inclusiveness?

A: The most important element is perhaps relational inclusiveness. In economics we often learn about poverty reduction but not wealth reduction. This is particularly important since the wealthy often have an overwhelming control over how a country is run. The government is more responsive to their demands. Tax justice is crucial to relational issues. Another thing to have an eye over is conspicuous consumption of the rich and whether it is worth it. Pension funds must also be watched as they invest their money on a lot of problematic projects such as arms, fossil fuels among other things.
Relational inclusivity also includes gender equality. During a UNEP discussion, in response to the argument that gender emancipation can be a sustainability multiplier, certain men countered that carbon emissions would only increase as more women around the world were given the right to drive vehicles. What is forgotten here is that maybe men should drive less or even better, both should be using public transport.

In a country where majority of the women are restricted to household chores, a shift to vegetarianism which is globally considered healthy and environmentally less taxing can be made only if women too are actively engaged.

Q9. The recent COVID-19 outbreak saw people appreciate and reflect on the synergy between health and environment. What are your thoughts on the same?

Essentially almost all environmental challenges have a health impact, be it heat waves, 7 million people dying from air pollution or 3.2 billion people affected by land degradation. Health has been the motivating factor for dealing with the environment in rich countries since they spend massively on the public health system and pensioners. In the USA though, where most services are privatised, there is no inherent motivation to reduce the negative environmental impacts on health. The public private partnership within the Indian health system makes it difficult to understand how health issues can significantly motivate the government towards environmental action. To sum up, the Health-Environment nexus will not show up unless the GDP accounts for loss of health and public health is seen as a public good requiring heavy investment. Though it may seem difficult for developing countries to prioritize public health, in the long run they will have to due to the subsequent damages to the economy, an example being how over use of fertilizers reduces soil yield, exacerbates eutrophication and affects human health.

Q10. Considering that a lot of stakeholders tend to lean towards economic growth, what incentives do you think can be given to them to see tangible actions in the domain?

It is unlikely that any government will have enough resources to divert everyone’s profit motive through incentives. We just don't have enough carrots to change everyone's behaviour. This brings us to rules and regulations which have proven to be much more practical. Today there are 1800 court cases on climate change worldwide. Companies are legally bound to take responsibility on social issues through CSR. Another way to deal with the above is through suasive instruments that persuade people to change their behaviour through normative forcing. An example of this is how the dissociation of cigarette smoking with being smart and cool in the west has resulted in the next generation indulging lesser in the same.

Q11. Could you give us a brief about the work being done by the Earth Commission?

The scientists are trying to define a safe target on phosphorus, nitrogen, biodiversity, climate change and water as well as produce a couple of arguments from a justice perspective. One of them is that meeting the social SDGs would require crossing planetary boundaries on a number of areas in an unequal world. We need a transformation in the global economy so that we achieve the poverty reduction strategies within the safe targets for each biophysical domain. Ultimately, the real challenge is in getting people on board with these new changes.

INTERVIEW WITH MS. YAMINI AIYER

INTRODUCTION

Ms Yamini Aiyer is the President and Chief Executive Officer of the Center for Policy Research, New Delhi and the Founder of The Accountability Initiative. Her research interests include public policy, public finance, social policy and federalism.

Q1: One of your Articles, titled "Solution when the solution is the problem", discusses the dilemma of enforcing transparency and accountability without distracting the bureaucracy from its main goal: implementation. Is there any scheme or policy that has come close to achieving the equilibrium between transparency and implementation?

Citizens' rights and their ability to exercise them are the most crucial checks and balances to the coercive state system in a democracy. They hold the government accountable and demand that it works effectively. The state is set up in such a way that local governments have little power. The power of finance is concentrated at the top. Giving citizens rights and demanding those rights from the state is the solution. The objective is to deepen citizenship. It's also worth thinking about the state structure. Additionally, technology has also been employed to solve the state's implementation challenges in the last 5-7 years. It can keep a better track of the current state. However, it does not necessarily empower the state to protect citizens' rights, and as a result, the solution becomes the issue. As a result, I was attempting to argue that we need to include the state in our discussions.

Q2: An interesting point mentioned in your article titled 'Countering the next wave of Covid-19' was that we need to build on our federal institutions to combat the successive waves. How can the communication between the central and state government improve from what it was in the second wave of Covid-19?

It all comes back to the state's and power structure's design. The Indian system is a sort of quasi-federal state in which a state does not have enough power. The entire covid story unfolded in a complex division of powers between health, finance, disaster management, and the centre. States must naturally take charge because covid-19 affected states differently, sometimes in a spatially concentrated manner. However, as of the beginning of March 2020, it was the national government that decided to take on the entire responsibility of covid management. The national government declared a state of emergency and made key decisions without first establishing a coordination structure. As a result, when a country like India locks down a complex, thoroughly linked economy, it affects everyone in a variety of ways. Instead of figuring out the minuscule details, the centre could have enabled interstate cooperation. A ramification of the centre's lack of coordination was Indian states closing down their borders. Ironically, after learning from the first wave, the centre decided not to announce another nationwide lockdown during the second wave. It delegated responsibility for covid management to the states, which was a wise decision. With more fiscal power during the first wave, the centre should have provided more resources. Instead, the federal government increased state borrowing limits and encouraged them to borrow from the market. That was a mistake since during the second wave, different states were attacked by covid at different times and had varied demands that necessitated specific treatment.

Q3: My question arises from the intersection of your subject of expertise- Social Policy. We know that India's population is young, and "growing"; and that effective family planning measures are the need of the hour. So, I want to ask whether you see the demographic dividend of India as an "asset" or a "liability", especially because you have written extensively on our poor health infrastructure as well as our unemployment trends.

I will correct you by saying that for India the real challenge is not population since we are heading towards population stabilization in the northern part of the country. The real challenge for India is access to reproductive rights. The choice is at the heart of this question. Structural inequalities are much sharper, particularly in the case of gender but it is about both men and women being able to make informed decisions for themselves.

Shedding light on the demographic dividend, the country has reached a sweet spot where it has a young and productive population. If this is harnessed well, it will lead to a genuine dividend that pays well for the next generations too. Unfortunately, India has not utilized its dividend well in 3 ways. Firstly, our economic model was based on growth but every economy generally shifts from an agriculture-based economy to manufacturing and consequently the service sector. In India's case, we skipped manufacturing altogether. This enabled a consumption-led growth model and we have hit the upper limit on that now. The heart of the issue is the jobless growth structure. The opportunity here is to build people's capacity to lift them from the "vulnerable population" into the "middle class". This requires investment in social protection, education and health. Building the state's administrative capacity to deliver should be at the heart of economic policy going forward. Even pre-covid the latest PLFS (Periodic Labour Force Survey) showed that we saw a movement back to agriculture rather than out of agriculture. All of this shows we've hit the ceiling on economic growth and we now need innovative ways to move out of this.

Q4: In your editorial "Employment U-Turn: Rural India is India's main employer" you talk about the reversal of India's structural transformation back to agriculture in the pandemic year when agriculture stood as the only sector which grew. However, do you envision this trend as a unique result of the pandemic year due to a multitude of reasons like a good monsoon, a negative growth of other sectors, etc? Or do you expect this to continue in future? If so, what does it mean for both the Indian economy as well as the Indian rural economy?

Agriculture's expansion throughout the Covid period was the result of several distinct conditions, as you correctly pointed out. Even though we had an inconsistent monsoon this year, sowing in the June season was slightly lower than the previous year due to the second wave but still, agriculture grew and incomes rose. However, agricultural incomes are not particularly high, and there is a lot of state variance in terms of agricultural incomes, according to the most recent study on the situation assessment of agriculture households. Agriculture is to date the primary source of income for many households.

As a result, it is critical to remember that no economy can thrive without increasing agricultural output. Ultimately, you need to have a mixed set of incomes. Ultimately, you need to have a mixed set of incomes. The route forward is to shift to non-farm revenue sources, leaving huge farmers with large incomes behind. Even while unemployment was high during covid, it might have been worse because most migrant workers migrated to rural India and ended up farming on their half-acre-one-acre plots. In the CMI data, you can see an intriguing shift where a big number of employees who previously reported themselves as casual wage labourers are now representing themselves as self-employed, with subsistence agriculture accounting for a significant portion of this. This shift back to agriculture is an indication of deep distress. We must commit to increasing agricultural productivity and establishing an enabling framework for people who choose to leave agriculture, ensuring a smooth transition from farming to non-farming. One does not happen without the other.

Q5: Ma'am, now that the situation has normalized, do you think this trend will continue and do you think any external intervention is needed to move out of the trend?

Well, I believe the situation has stabilised in the sense that the economy is performing well in terms of corporate profits. However, if you assess the economy in terms of the majority of the population's well-being and ability to increase their income, we are still in serious trouble. Covid-19 has left a profound scar on the labour market, with the scars being most obvious among the poorest 50%, and particularly the bottom 20%. We are still in a very serious problem if we define the economy as citizens' well-being or citizens' capacity and ability to participate in the market. NREGA demand is higher than it was in June and July when the sowing season was still in full swing and the impacts of Covid were still being felt, resulting in lower labour demand. We've arrived at a point where, assuming government coffers are as healthy as the first two-thirds of economic data suggest, it's up to the government to do something to boost demand throughout the economy. We suggest that, given the situation of the economy in 2020, the government would not be able to be unduly generous because it would run into severe debt, with long-term consequences that would be worse than short-term consequences.

Q6: My question pertains to how fiscal federalism is moving towards being a zero-sum game in India. In recent years, even though the percentage of the divisible pool of tax revenues allotted to states has increased, there has also been a significant increase in the number of cesses and surcharges that have been imposed by the centre. Since revenues from cesses and surcharges do not have to be shared with the states, the Union government has thus come to depend more on these than on taxes to collect additional revenues. This arrangement has inadvertently led to a lot of chaos, mistrust and misunderstanding. What is your perspective on this state of affairs, and whether you think increasing the tax shares of states, giving an impetus to India's tax to GDP ratio or moderating cesses and surcharges might present a feasible solution to this problem of tax sharing.

In the larger scheme of things, there is no question that India does need to improve its tax to GDP ratio. However, at the current moment, there is deep distrust between the centre and state. Frankly, if you take a historical view on federalism, states have played their role in not holding on to the principles of federalism and fighting for federalism only when it's convenient. The central government has been suffering from a violent fiscal crisis. Its projections of taxation and its actual revenue collection have never actually been met effectively. To deal with this fiscal crisis, the centre has done two things: one, it has actively and carefully, through the imposition of cesses and surcharges, as you rightly pointed out, tried to reduce the number of resources that it needs to share with the states and it has also increased the state's contribution into centrally sponsored schemes, where states have no say. Another important point: when GST was under stress, it played a very unfair and distrustful game. It left the entire thing to the states. Eventually, it came back because the states pushed back very hard by borrowing and lending to states, whereas, the centre should have borrowed and given the money to states as it has greater fiscal powers and assets. There is a lot more than the centre has in terms of fiscal and monetary powers than states do and this was the moment for the centre to play its role. It's in this very deep environment of trust deficit that it becomes much harder for the centre to renegotiate many things with states. The GST compensation cess is a big question. July is not far. The centre has kept July 2022 as the time when this current compensation period runs out. The centre has kept postponing this and has kept kicking the can down the road over the last few years to avoid figuring this out. There are very serious issues that need to be resolved against the backdrop of politics which is very centralised. People like me have been arguing now and we have driven ourselves hoarse; that what we need is a structure that would enable this negotiation to take place regardless of political processes because politics will always play out and we have to recognise that that's the nature of politics and that it is something I personally welcome. These issues get contested through politics. However, when you do not have institutional mechanisms, then the everyday life of governance and decision making gets very deeply impacted and the trust deficits become so vast that it becomes very difficult to bridge these gaps. Without that, we will not be able to go forward.

Q7: Ma'am, I had a question about what you have spoken so far about centralisation during Covid-19. In "The Indian State and the broken Social Contract" it was mentioned how during the pandemic the focus shifted from the health system to managing lockdowns because there was a huge lack of health infrastructure in our country. How do you think the suggested solution, NEED (National Empowerment Emergency Disaster Council) would have changed this scenario?

For context, NEED is a proposal put together by several of my colleagues at the Centre for Policy Research in order to create a mechanism that would allow governments to get a kind of flexible formula-based financial evolution. We already knew that covid manifests itself in a variety of ways and that demands will range from state to state based on the nature of the covid wave and the economic impact. We weren't dealing with a health crisis as much as we were dealing with an economic problem even in the first wave. In terms of health, this type of structure would improve interstate cooperation for the deployment of health facilities in two ways.

One, we know that the government's ability to offer high-quality care varies greatly across the country. So, in a broad sense, there are several arguments for this, but Bihar's health infrastructure is shattered, whereas Kerala's is significantly superior. When you have this kind of interstate coordination, there could be a lot of learning that can be shared across the board. Another factor to consider is that infrastructure requirements will also differ. My colleagues at the Centre for Policy Research and I put some thought into this much later, towards the conclusion of the second wave. We discovered a set of districts that we refer to as "permanently at-risk districts," where covid waves remain consistent. In other districts, the wave would come and go over time. As a result, certain types of infrastructure (covid-specific) must be constructed in permanently at-risk areas. The infrastructure, on the other hand, can be moved t other districts. Again, an interstate council, where frequent interaction may have been possible, could have made a huge difference.

Q8: We have seen during the budget allocation that the expenditure on health and education is far less than what is done on defence. Also, when we talk about national security, we view it through the military lens but does it not have more aspects to it? According to you, has the Indian state adequately prioritised domestic security issues?

Domestic security is very closely associated with national security. We are saying this a lot in the context of what is happening in Kashmir right now. The two intersect very strongly. India's national security and frankly India's position in the globe are very closely intertwined with our strengths and weaknesses at home. Some colleagues and I are a part of an independent group of policy analysts, former diplomats, security analysts and academics that came together amid the covid waves and said that we need to rethink and ask questions about crucial aspects of our national security. There are too many changes in the world and as a public, we need to deliberate these. We argued that the foundation of India's source of power in the globe and the legitimacy to engage in the globe. If we are not secure and strong at home, we will not be able to be strong and secure around the globe. Good foreign policy is a strong domestic policy. We need to be looking at the home as much as we are looking externally to be a powerful nation.

Q9: In the publication India's Path to Power, strategy in a world adrift, it was highlighted that India needs to aim for strategic autonomy and should keep its interests at the forefront without getting influenced by the power wielded by other countries. How does the formation of the Quad fit into this narrative? Since we know that First, formally establishing 'Quad' as a military block to contain China will go against India's policy of non-alignment. Second, joining the military block with the USA undermines India's interest in Central Asia, where Russia is the key defence partner.

At one level Quad is still not a military alliance, though it may become one. I believe that a part of strategic autonomy is to join alliances and stay independent after carefully measuring the political atmosphere. You need to make alliances keeping in mind that your interests are to be kept above all other interests. In the sense that, even your allies will not protect you.

if it's not in their interest. Above all of this, India needs to articulate and recognise that its legitimacy to be a power player is not going to come from bravado or bullish loud claims or trying to become allies of the United States. It is going to come from its ability to project its legitimacy and what we do at home. The best way to protect our borders and our security interests is to ensure that we protect the foundational pillars of who we are. Then, everyone will want to ally with us rather than us being marginal players in other alliances.

Q10: Ma'am, my question pertains to the National Education Policy. In your publication Outlays to outcomes: understanding pathways to improve learning outcomes, you discuss in the context of Bihar, the whole process of planning, budgeting and decision-making system with regards to the education system. The National Education Policy heralds a new chapter for our education system. Do you think that the policy encompasses the idea of inclusivity? What are your predictions about how the policy would shape up and whether it would deliver on its promises?

In midst of this unprecedented crisis, the policy almost feels somewhat irrelevant. India now holds the distinction of being the second or third country with the longest school closure, especially for primary school. What is worrying about this is how little we seem to care. While gym owners are on the streets, teachers do not seem to protest or care. It raises the question of who we are as a society and how we view education? Ultimately, we will only be able to build an education system when parents and governments think together. We have not been able to move forward in that regard. In that context, National Education Policy is an important political and policy idea that recognizes that we have built an education system in which two crucial things have failed. One, children go through foundational years and do not necessarily acquire basic foundational skills and secondly, we have designed a system where the teacher is incentivised to teach the first three rows of the class. It is essentially a sorting system. It identifies the best and enables the best to succeed. The fact that the National Education Policy recognises these two limitations is an important step forward. We don't do much in the pre-primary sector and we do not invest enough in primary education. The New Education Policy is pushing us there. However, the larger questions of how one breaks the classroom consensus, remain a big concern.

INTERVIEW WITH MS. LAVANYA GARG

INTRODUCTION

Lavanya Garg holds an MA in International and Development Economics from Yale University and a BA (Hons.) in Economics from Lady Shri Ram College. Currently, she is Chief of Staff and a Senior Manager at Good Business Lab (GBL), a not-for-profit proving the business case of worker wellbeing programs in low-income settings (which she joined as the first employee in 2017).

She provides strategic inputs on running GBL to the co-founders & CEO, develops and implements organizational policies & culture as the People Operations head, and builds key stakeholder relationships as the Partnerships head. She is passionate about wellbeing, gender, and creating thriving workspaces using design thinking and people-centred, systemic approaches.

Q1. Mentioning something that happened with Starbucks, it was observed that when it spent more on Healthcare than on coffee in 2010 and partnered with the company Lyra Healthcare to provide mental healthcare, it increased its profits. This is in line with a Deloitte study that also revealed that investing in mental health can get an ROI of up to $65 for every dollar spent. Do you think including mental health plans will have a long term economic benefit for companies?

Definitely, yes. To give you some context, I work at Good Business Lab and essentially our goal is to convince businesses to invest in workers' well-being. Mental health is a crucial part of well being. One of our ongoing projects is a Buddy Project that aims to alleviate loneliness among migrant workers by pairing them up with a buddy who has worked at the factory for slightly longer than them and comes from a similar social and cultural background. Garment factories in Bangalore employ several migrants coming from Orissa, who are leaving behind their social ties, coming to a new city, and probably working for the first time. We have observed that there are high levels of loneliness among migrant workers.

Internally, at GBL we invest a lot in employee well being. It would be hypocritical on our part if we didn't. .We provide support if people seek mental health services like therapy. This is crucial for building long term resilient businesses and we are witnessing this in companies all across the world – Covid-19 highlighted the need for this more than ever before.

Q2. Do you think that the benefits of running these programmes outweigh the costs?

There is enough research showing that they do. Well-being is much broader than mental health. It includes being able to communicate in the workplace, being able to make decisions, and being able to manage time. We have done several randomized controlled trials, and in one specific trial where we rolled out soft skills training programmes for 2700 female garment workers, the workers who got the training were more likely to pay for their children's education, had higher self-efficacy and were more productive at the workplace. We also found that the programme generated a net ROI of 250+%. The firm almost made up for the cost of investment in the programme. McKinsey's research shows that organisations that facilitate a positive employee experience are 1.39 more likely to promote organisational outperformance. 90% of employees stay in a workplace when their well-being needs are fulfilled. There is a Forbes statistic that indicates that employees who feel their voice is heard are 4.6 times more likely to feel empowered to perform their best work.

Through another GBL project, we found that enabling worker voice at the workplace for factory workers to communicate their satisfaction/dissatisfaction reduces the likelihood of quitting by 20%. At GBL, we are trying to establish this link and look at different facets of well-being and implement as many of these policies in house. We have a buddy system for our new employees. Their buddy won't be their manager or someone they work with directly. A buddy is essentially a friend. This helps a lot more in the remote work environment. An anonymous grievance redressal form is also in place. There is an individual, department and organisational well-being budget. People can get reimbursed up to a limit under this for the purchase of bicycles, gym subscriptions, etc. We also partner with organisations like *Therapize* or *Mind Clan*. They conduct sessions with our employees.

Q3. Continuing our discussion about employee well being and mental health, what do you think is the importance of caring about mental health in blue-collar and white-collar workplaces?

It is so important! For example, I don't have a work personality or a separate personality. I bring who I am to work. If I am having a personal issue it will affect my work. It is not fair to see people as machines in any context, blue-collar or white. I started doing therapy 3 years back because of which I can establish better interpersonal relationships and am aware of my strengths and weaknesses and blindspots. This helps me a great deal at work! A founder's personality and strengths and weaknesses often creep into the organisational culture. Thus, it's personal but also societal and political.

Q4. What other incentives can we give in the workplace for mental well-being and efficiency?

Flexible work hours may not be possible in manufacturing contexts but people generally prefer to work at a place where they can control how they spend their time. This is also a feminist issue because women have competing demands on their time, women do most of the unpaid care work in India and also across many other countries and need more autonomy over their time to balance these different demands. Another important point that's often not talked about is limiting work hours. A culture of overwork is unhealthy for anyone and biased at a structural level for people who are less privileged and have more responsibilities. At GBL, all that we care about is your output and quality of output, I have colleagues who work at different times. Unless there is fieldwork or meetings, people can structure their timings themselves. This requires a deep sense of trust.

Q5. A lot of countries are looking at 4-day workdays. Mental health in the context of developing countries like India is not a widely discussed topic, so how do companies working in this direction measure their progress as mental health is a qualitative idea?

There are tools to measure mental health in the psychology and organisational domain, which we often use in GBL factory research. This can be done qualitatively too – when we started the people operations vertical at GBL, we interviewed our employees to understand their needs. These needs were factored into our priorities. OKRs is a quantitative metric drive framework we widely use that clearly states your goal and how you measure progress. We also regularly send out team engagement forms (which have quantitative measures such as how comfortable an employee feels talking about their mental health with a manager on a scale of 1-5). This further feeds into the goals we set. For us, the key is to have feedback loops, not be fixed about what works and what doesn't and to follow a flexible approach.

Q6. Several companies are working to increase gender diversity in the workplace. What role does gender play in economic and mental productivity for individuals as well as organisations?

Everyone has unique mental health experiences. But often these mental health struggles are situated within a certain structural and systemic context – you can't separate the two. Women are underrepresented, especially in positions of power, they have competing demands on time due to a disproportionate burden of domestic responsibilities.

When I talk to a female garment worker, the usual story is that she wakes up early in the morning, cooks for the family, gets children ready and then comes to work and that is a uniquely female experience in the South Asian context. Policies like 5 days work week, and flexible work hours can make it easier for women to enter the workplace and stay in the workplace. There, of course, needs to be organizational systems to include underrepresented groups and to create a culture of inclusion and care through training and sensitization. Leading with empathy and kindness is not always seen as a strength in a certain environment. But, if we lead with kindness it will lead to employees sticking with the organisation. We witnessed this at GBL – despite the "Great Resignation" and social sector turnover rates being high, our employee turnover rate was ~9% last year.

Q8. From an organisational perspective, how do you strike a balance between workplace stress and the protection of mental health?

We do have to strike a balance between our well being and productivity needs. We have a well-being budget and a performance management process at GBL. If we feel that someone is not acting on the feedback we put them on an underperformance report. In terms of stress specific to the question, a lot of stress is not necessarily about the situation but people's reactions and expectations of the situation. The idea is to create a work culture where people feel safe making mistakes. Eventually, that helps produce high-quality work and people are more creative.

Q7. J.M. Keynes had predicted that workers would enjoy more leisure time due to technological advancements by 2030. Recently, we have observed that productivity increases with a decrease in working hours; but what we see now are longer working hours and more rigorous work expectations. Why is it that most firms still do not realise the importance of labour well-being and how does Keynes' prediction relate with the current scenario of work-leisure balance?

At GBL, we don't believe in overwork and not taking vacations. Stating that is one thing, and then building systems to enable that is different. It goes to the core of a societal question. If you have a boss whoseAt GBL, we don't believe in overwork and not taking vacations. Stating that is one thing, and then building systems to enable that is different. It goes to the core of a societal question. If you have a boss whose self-worth comes only from work, then they will promote overwork. We train our managers to be conscious of mental health. We expect managers to create a safe working space. I have been someone who is very ambitious. I was burnt out last year due to overwork and I think it is important to take breaks. Taking time away helped me come back rejuvenated. There is a shift in the narrative from hustle to self-care culture, and that is happening for sure.

Ecolloquial 2022