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2. Abbreviated terms are spelled out at first use and followed with the abbreviation in parentheses. Avoid overuse of contrived abbreviations.

3. Abstract: Provide an article summary of 300 words or less. Keywords: Include 3 to 5 keywords.

4. Original submissions must have a maximum length of 6,000 words

ARTICLES / 1

"The Impact of COVID-19 on Higher Education in India: Challenges, Opportunities, and the Path Forward

Dr.S.R.Keshava♦

The COVID-19 pandemic has significantly impacted all sectors, including higher education in India. Universities, colleges, and research institutions were closed during the lockdown to curb the virus's spread, forcing a swift transition to online learning. This study aims to explore the effects of the pandemic on higher education, focusing on two key stakeholders: students and teachers. By doing so, it seeks to address a critical research gap in understanding how both groups navigated the challenges of this sudden shift in Primary data was collected from 100 postgraduate students and 40 teachers from Bangalore, all involved in postgraduate courses. The data was analyzed using statistical tools such as percentage analysis, chi- square tests, ranking techniques, and weighted index methods. The findings reveal that the majority of teachers (70%) relied on the Zoom platform for online classes, followed by 22% using Google Meet and 8% using Microsoft Teams. Zoom's popularity was attributed to its ease of use, minimal space requirements, free access, and recording features. The study also highlights differences in how students and teachers accessed the internet for online learning: 88% of students depended on mobile data, while 80% of teachers used Wi-Fi. The remaining 12% of students used Wi-Fi, and 20% of teachers relied on mobile data. Teachers faced several challenges during virtual classes, including maintaining student engagement, acquiring the necessary technical skills, and addressing low attendance rates. Despite these difficulties, the study suggests that a blended approach, combining both virtual and traditional classroom experiences, will likely shape the future of education in India, even in post-pandemic times.

Keywords: COVID-19 pandemic, higher education, students, teachers, challenges, blended learning, mobile data, Wi-Fi, virtual classrooms, online learning platforms.

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INTRODUCTION

The COVID-19 pandemic severely disrupted higher education, as universities, colleges, and research institutions in over 191 countries were forced to close during lockdowns aimed at curbing the virus's spread (UNESCO 2020). In response, many institutions swiftly transitioned to online learning within the first few weeks of the nationwide lockdown. Virtual learning became the primary means of education, though its effectiveness varied widely depending on factors such as teachers' adaptability, students' socioeconomic backgrounds, and the availability of adequate infrastructure. The pandemic's impact on higher education revealed deep inequalities. Students from lower-income households and those without reliable access to technology faced significant challenges, highlighting the uneven access to education across society. These disparities sparked widespread discussion about the future of education and the role of online learning.

In India, higher education has shown resilience in the face of these challenges. As of June 2022, the country had 1,047 universities, comprising state, central, deemed, and private institutions (UGC, 2022). The Gross Enrolment Ratio (GER) in higher education saw an improvement, reaching 27.1% in 2019-20, up from 26.3% in 2018-19 and 24.3% in 2014-
15. During this period, over 3.38 crore students were enrolled in undergraduate and postgraduate programs, with the majority studying humanities, science, commerce, engineering, medical sciences, and IT. Ph.D. enrolments also increased, nearly doubling between 2014 and 2020 (AISHE 2019-20).

Though the pandemic caught the education sector off guard, it underscored the need for greater preparedness and highlighted the importance of addressing existing inequalities within the system.

REVIEW OF LITERATURE

The COVID-19 pandemic brought about unprecedented changes to higher education globally, necessitating a shift toward digital learning and exposing various challenges associated with accessibility and affordability.

Rashid and Yadav (2020) emphasized the critical need for universities to train educators in digital technologies to facilitate a smooth teaching- learning process. They argue that without student- friendly government

policies to ensure the affordability and accessibility of the internet, students in higher education may face significant barriers, particularly those from disadvantaged backgrounds.

Mhlanga, Denhere, and Moloi (2022) observed that the pandemic accelerated the adoption of digital technologies across sectors, including education. Their research highlights the urgent need for digital pedagogy training for educators and suggests that online learning, if properly supported, can level the playing field by increasing accessibility. Despite initial resistance to change, the authors contend that digital tools can complement traditional teaching methods and enhance the overall educational experience.

Similarly, Tari and Amonkar (2021) discussed how the pandemic has fundamentally transformed teaching, learning, and evaluation methodologies. The digitalization of education became a necessity to maintain continuity in learning. They advocate for government-led initiatives to develop necessary infrastructure in remote areas, which is crucial for reducing the digital divide and making e-learning accessible to all students, particularly in rural regions.

Akah, Owan, and Alawa et al. (2022) explored the varying degrees of ICT deployment in public universities, particularly in Cross River State, Nigeria. Their findings revealed significant disparities in access to digital resources such as cloud storage systems and digital bulletin boards. The study highlighted the role of consistent electricity supply in determining the success of ICT adoption for teaching, with data costs also posing a significant barrier for academic staff.

In Madagascar, Zafitsara and Velo (2022) conducted interviews and focus group discussions with students, revealing that the abrupt shift to digital learning was met with several challenges, including a lack of preparation time, pedagogical strategies, and resources. The authors noted that while social networks like Facebook and Gmail were used to continue education during the pandemic, these efforts were not sustained once in-person learning resumed. This discontinuity led to delays in the academic calendar, disruptions in the curriculum, and increased student dropout rates. The high cost of the internet further exacerbated these issues, limiting the effectiveness of digital learning for many students.

These studies collectively highlight the critical need for infrastructure development, government support, and comprehensive digital training for educators to bridge the gap between traditional and online education. The

pandemic's impact on higher education is not uniform, and its effects on students and educators vary based on socioeconomic factors, access to technology, and institutional support. Addressing these disparities is essential for ensuring equitable access to education in a post-pandemic world.

Researchable Questions

The current situation and review of existing literature prompt several important questions that need further exploration:

1. Can traditional campus-based universities successfully integrate technology-driven education into their teaching models?
2. Is online education a challenge to the survival of traditional institutions, or is it an opportunity for their growth and innovation?
3. Does the transition to virtual learning signal a fundamental shift in how education is delivered, akin to a learning revolution?
4. How has the COVID-19 pandemic affected different stakeholders within the higher education system, including students, teachers, and administrators?
5. What new opportunities and challenges have emerged in higher education as a result of the pandemic, and what are the potential paths forward?
6. Can educators accustomed to conventional teaching methods adapt effectively to virtual platforms, and what support do they need to succeed?
7. How do students perceive online classes? Have they found virtual learning as effective in understanding course material as in-person instruction?
8. What specific challenges did both students and teachers face during the rapid shift to online learning, and how can these be addressed moving forward?

Research Gap

While there has been some exploration of the broader impacts of the COVID-19 pandemic on higher education, much of the literature lacks in-depth, micro-level analysis. Few studies focus specifically on the detailed effects of the pandemic

on both students and teachers in the Indian context. This study, *The Impact of COVID-19 on Higher Education in India: Opportunities, Challenges, and the Way Forward*, seeks to bridge this gap by offering a focused examination of the pandemic's effects on two key stakeholders—students and teachers. It aims to provide insights that contribute meaningfully to the existing body of research, highlighting both the challenges and opportunities that have emerged during this period of disruption.

Objectives of the Study

1. To examine and analyze the impact of COVID-19 on higher education, with particular focus on the experiences of students and teachers.
2. To explore and understand the key challenges the pandemic has posed to the higher education sector.
3. To identify obstacles brought about by the pandemic that may be reframed as opportunities for innovation and improvement in higher education.
4. To propose strategies and recommendations for mitigating the effects of COVID-19 on higher education and improving its resilience in the future.

Hypotheses

1. There is a significant relationship between attendance and understanding in virtual mode.
2. There is a notable difference between students and teachers in their preferred internet mediums for delivering, attending, and addressing doubts during online education.

Methodology

In alignment with the research objectives and hypotheses, both primary and secondary data were utilized to gather comprehensive insights.

Secondary data were sourced from well-established reports and institutions. Key sources include the All-India Survey on Higher Education 2018-19 (Ministry of Human Resource Development, Department of Higher Education), as well as

reports from UGC, ISEALC, the United Nations, the World Bank Group, and the Global Education Monitoring Report. These resources provided a broader context for understanding the trends and challenges in higher education at the national and global levels.

Primary data collection focused on gathering firsthand information from 100 postgraduate students and 40 postgraduate teachers in Bangalore. The student sample was divided equally between those studying at private colleges and those enrolled at the university campus. A carefully designed questionnaire was used to collect this data, ensuring that both students and teachers had the opportunity to share their perspectives on the shift to online learning during the pandemic.

To analyze the data effectively, various statistical tools were employed, including percentages, chi-square tests, ranking techniques, and weighted indexes. Visual aids such as bar and pie charts were utilized to present the data in a clear and accessible manner, allowing for a more intuitive understanding of the findings.

Period of the Study

The data for this study was collected during the COVID-19 lockdown in 2020, when online classes were the norm. The data collection process involved conducting telephonic interviews, utilizing snowball sampling to reach participants.

Background of the Study Area

Bangalore, though known for its cosmopolitan nature, hosts a diverse student population at Bangalore University. Many students come from rural backgrounds, and for some, they are the first in their families to pursue postgraduate education. In contrast, a significant proportion of students in private colleges are from second- or third-generation postgraduate families. This diversity of backgrounds provided a rich context for exploring how the COVID- 19 pandemic impacted different groups within the higher education landscape.

Analysis and Findings

Findings

Respondents background

	Students	Teaching Faculty
MA	50	20
MSC	50	20
Category		
SC	24	5
ST	8	4
OBC	48	4
GM	20	6
Place of Residence		
Rural	44	
Town	25	4
District	3	3
Metropolitan	28	33
Gender		
Male	35	10
Female	65	10
Age of Respondents	22 Years 40%	35 to 45 years 45%
	23 Years 60%	46 to 58 years 55%
	24 years and above 5%	

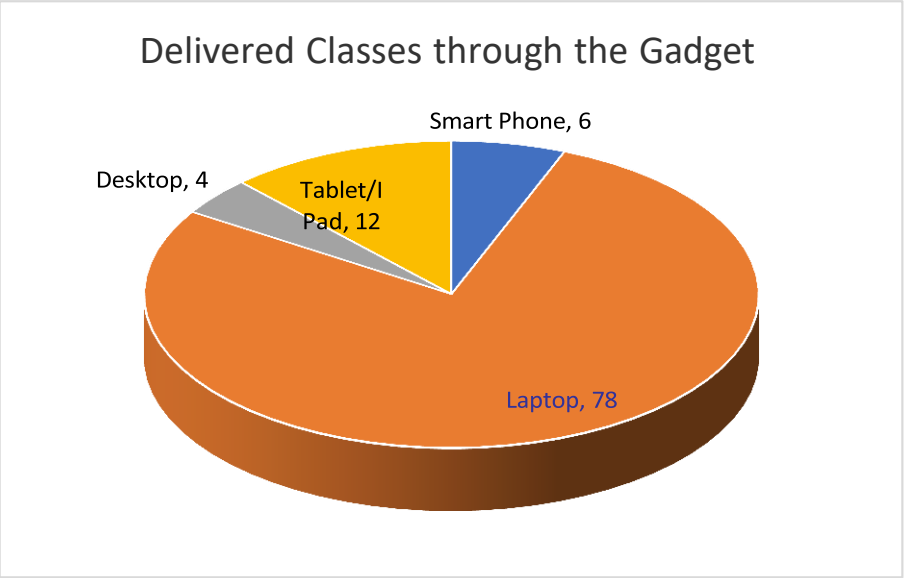
Source: Field Data

The study involved 100 postgraduate students and 40 teaching faculty from various colleges in Bangalore, equally divided between MA and MSc courses. Socially, the sample was diverse: 24 students and 5 teachers from the SC category,

8 students and 4 teachers from the ST category, 48 students and 4 teachers from OBC backgrounds, and 20 students and 6 teachers from the General Merit (GM) category.

During the COVID-19 lockdown, students and teachers were geographically dispersed. Nearly half of the students (49) were residing in villages, 25 were in towns, 3 were in district headquarters, and 28 in Bangalore city. Similarly, 33 teachers were located in Bangalore, with a smaller number (10) living in villages, towns, and district headquarters. Gender-wise, the participants included 35 male students and 10 male teachers, while 65 female students and 10 female teachers participated. The students were primarily aged 22 and 23, while the teaching staff was largely in the 35–58-year age range, representing a mix of mid-career and senior professionals.

Technology and Devices Used



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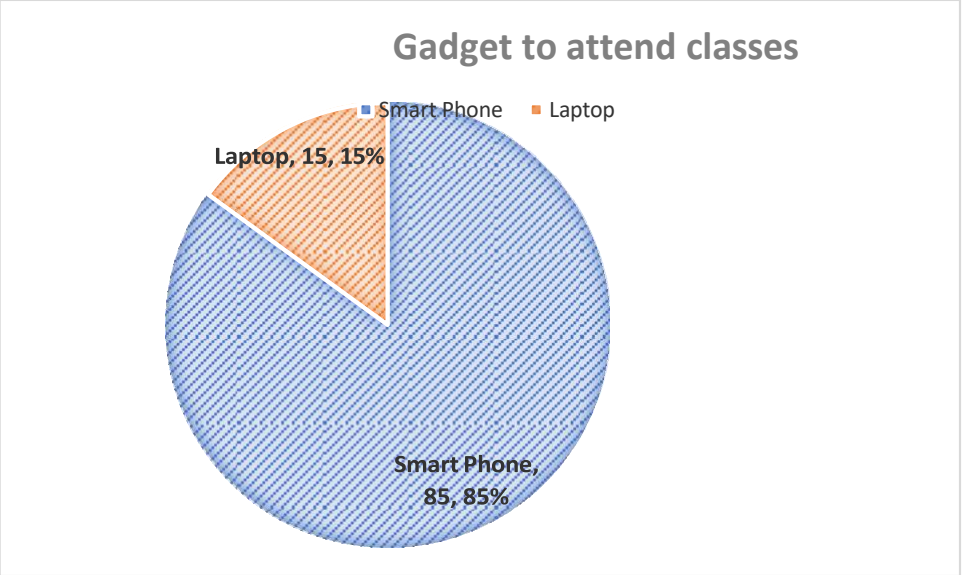
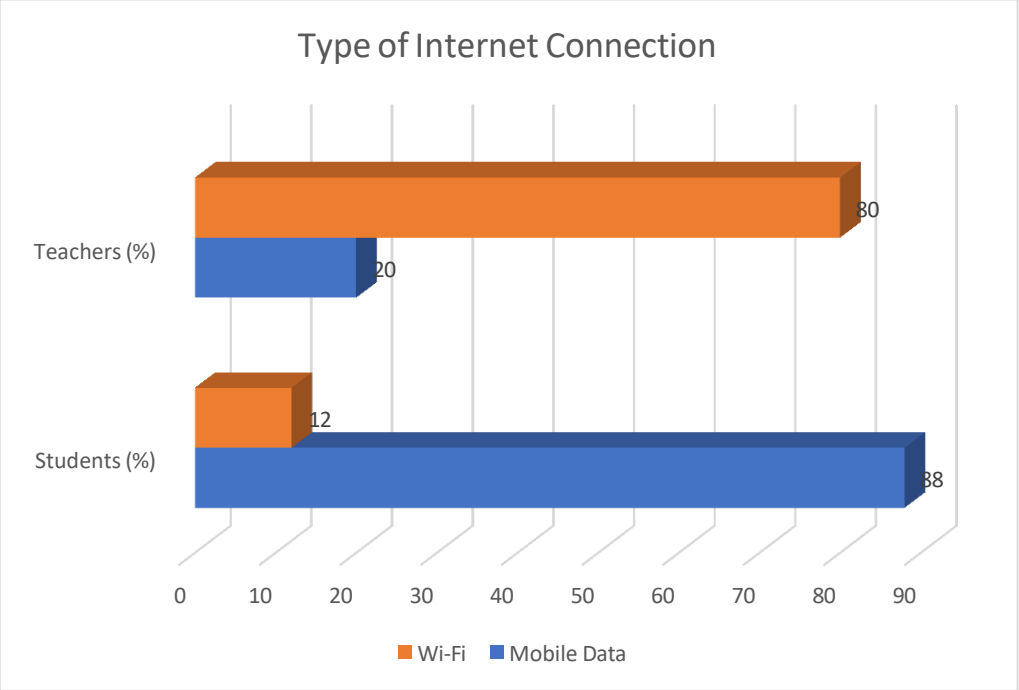


Source: Derived from the above table

Regarding the tools used for online learning, there was a clear divide between students and teachers. While 85% of students relied on smartphones to attend classes, 78% of teachers used laptops, reflecting their need for more versatile devices to teach effectively. Only a small fraction of students (15%) had access to laptops, highlighting the digital divide in terms of access to appropriate technology for virtual learning. Teachers also utilized tech platforms like Zoom,

Google Meet, and Microsoft Teams for lectures, with Zoom being the most popular due to its ease of use and minimal data consumption.

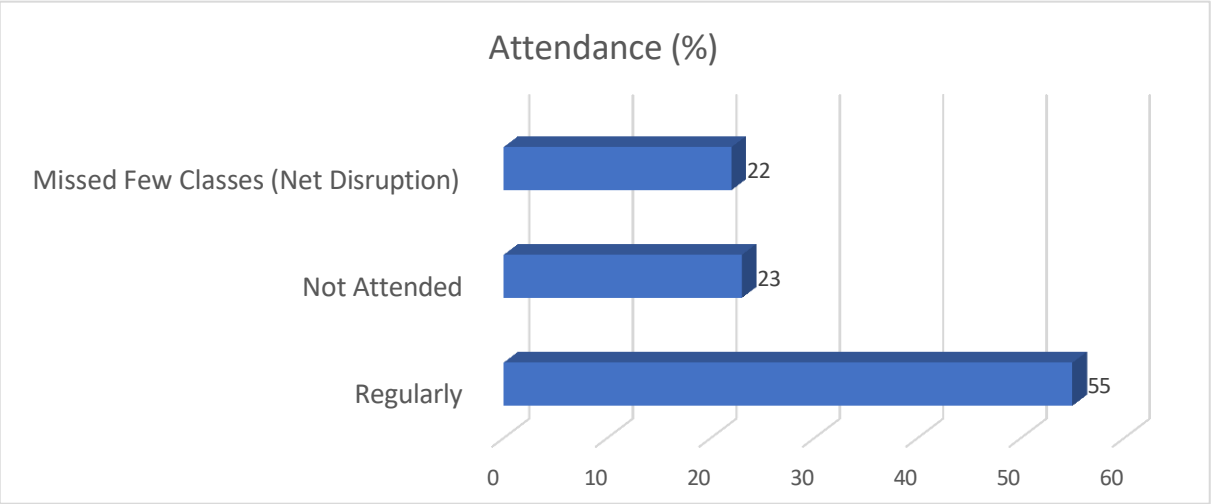
Internet Connectivity



Source: Field Data

Internet connectivity played a crucial role in the effectiveness of online learning. A significant proportion of students (88%) relied on mobile data, while 80% of the teaching staff had access to Wi-Fi, which provided more stable and reliable internet connections. The disparity in internet access affected the quality of education, as students in rural areas or those with unstable connections struggled to maintain regular attendance.

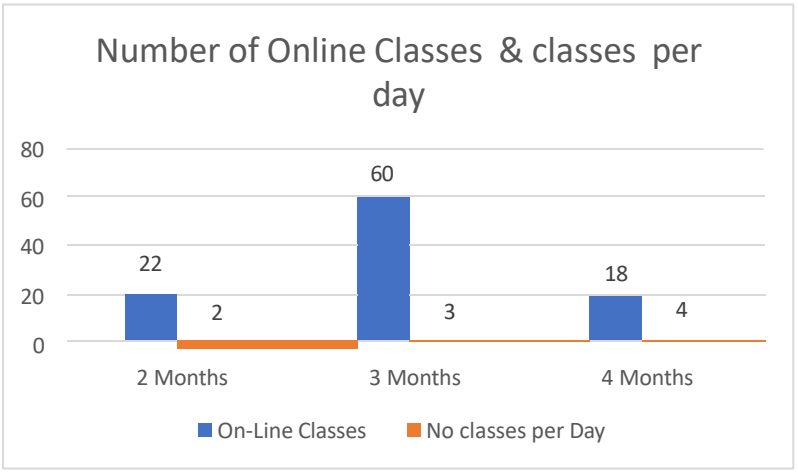
Attendance and Participation



Source: Field Data

Out of the 100 students surveyed, 23 reported that they were unable to attend online classes due to a lack of devices or internet connectivity. Furthermore, 22 students faced intermittent disruptions caused by poor network quality, forcing some to seek better signal in unusual places, such as agricultural fields. Despite these challenges, 55 students managed to attend classes regularly.

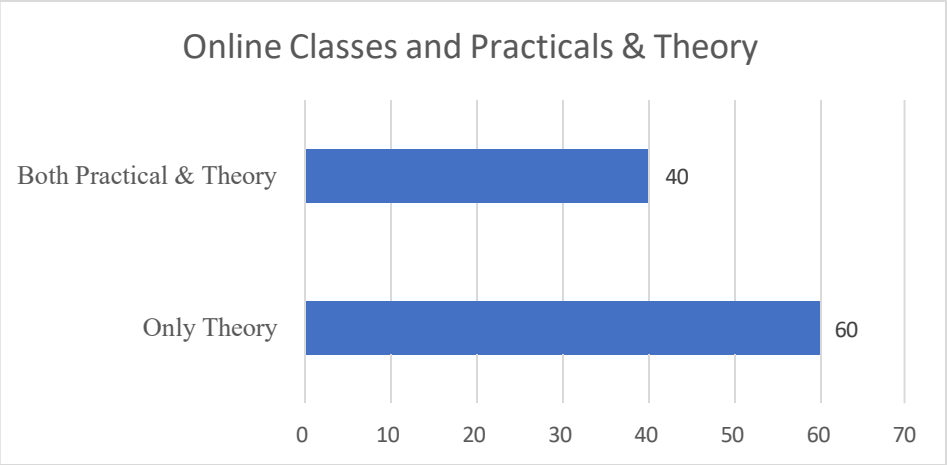
Duration of Online Classes



Source: Field Data

Students experienced varying durations of online learning. Around 30% reported attending classes for 3 to 4 months, with the daily schedule typically ranging from 2 to 5 hours. Despite the continuation of virtual learning for several months, many students faced limitations in the depth of instruction, particularly in practical subjects. Teachers attempted to bridge this gap through online videos and live demonstrations from laboratories, but these efforts could only partially

compensate for the absence of hands-on learning.

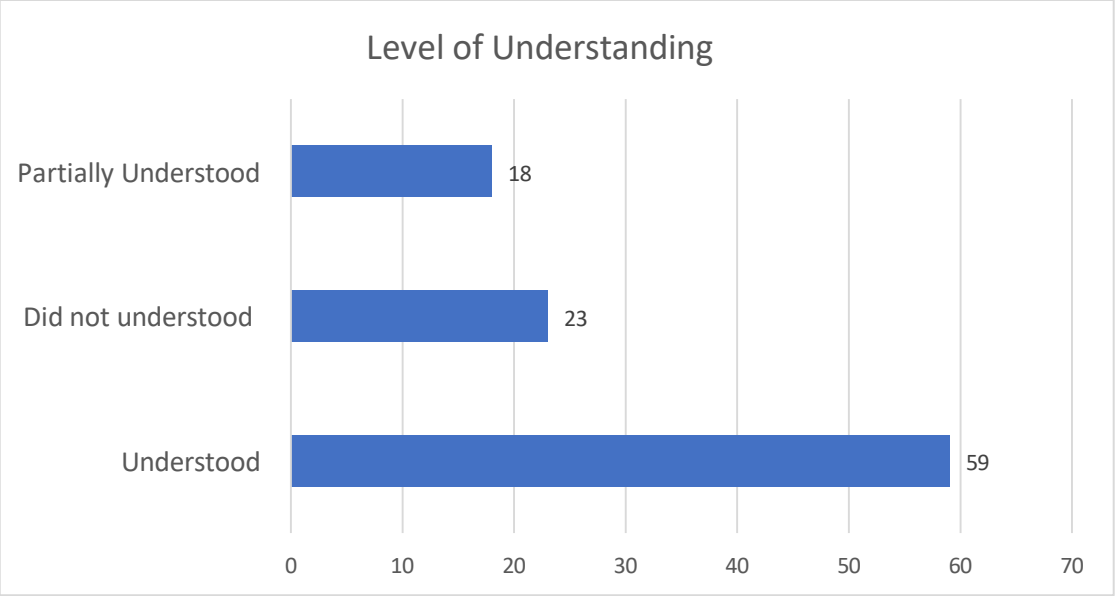


Source: Field Data

During the transition to online education, theoretical content was covered extensively, with around 60% of the curriculum being delivered. Practical lessons, while more challenging, were also incorporated to some extent, with a blend of both theoretical and practical concepts making up about 40% of the coursework. Teachers, through trial and error, gradually devised ways to conduct practical lessons remotely.

In some instances, faculty members took innovative approaches, identifying specific practical concepts that could be taught using virtual tools. A few dedicated teachers even took the extra step of physically going to their laboratories, despite the risks, to deliver live demonstrations. Others used online videos and resources to convey practical knowledge, ensuring that students could grasp key concepts even from a distance. These efforts, though constrained by the limitations of virtual platforms, highlighted the resourcefulness and commitment of educators in adapting to unprecedented circumstances.

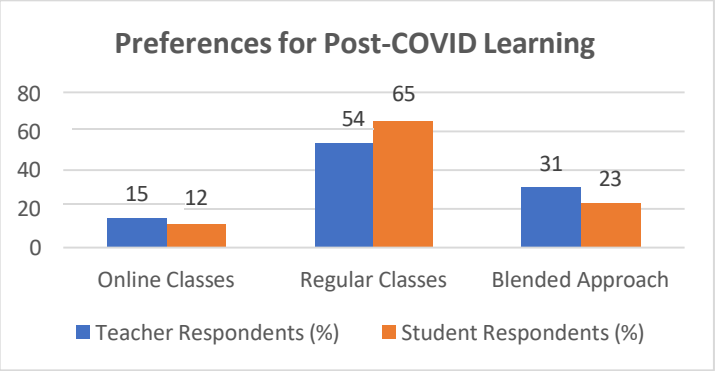
Understanding and Engagement



Source: Field Data

The effectiveness of online education was evaluated based on students' understanding of the material. Among the 77 students who attended virtual classes, 59% stated that they understood the content, 21% partially understood, and 24% admitted they did not fully grasp the lessons. The lack of direct interaction, limited feedback mechanisms, and inconsistent teaching quality were cited as major obstacles to effective learning in the virtual environment.

Preferences for Post-COVID Learning



Source: Field Data

When asked about their preferences for the post-pandemic period, the majority of both teachers (54%) and students (65%) favoured a return to traditional, face- to-face education. The in-person environment was seen as more conducive to active learning and engagement. Only a small proportion of respondents—12% of students and 15% of teachers—expressed a preference for continuing with

online education. Interestingly, a notable minority favored a blended approach (31% of teachers and 23% of students), indicating that hybrid models combining online and traditional methods could be a viable option for the future.

The teachers who preferred in-person classes cited the advantages of classroom dynamics, ease of assessment, and more meaningful interactions with students. Similarly, students highlighted the benefits of campus life, peer interaction, and the structured learning environment that is difficult to replicate in an online setting.

Testing of Hypothesis

Hypothesis 1: There is a significant relationship between attendance and understanding in virtual mode.

Observed Table				Expected Table		
	Attendance	Understanding	Total	Attendance	Understanding	Total
Regular	55	59	114	57	57	114
Partial	22	18	40	20	20	40
Never	23	23	46	23	23	46
Total	100	100	200	100	100	200

Source: Field Data

Chi-square test result: 0.763246

Inference:

Since the p-value of 0.763246 is greater than the threshold of 0.05, Hence the null hypothesis. is rejected. This suggests that statistically, there is no significant relationship between student attendance and their understanding of the material in virtual classes. In other words, attending online classes does not necessarily equate to better comprehension of the content.

Observed Table				Expected Table			
	Listen	Deliver	Total		Listen	Deliver	Total

	the class	Lecture			the class	Lecture	
Smartphone	85	8	93	Smartphone	66.43	26.57	93
Laptop	15	32	47	Laptop	33.57	13.43	47
Total	100	40	140	Total	100	40	140

Hypothesis 2: There is a notable difference between students and teachers in their preferred internet mediums for delivering, attending, and addressing doubts during online education.

Source: Observed Data is Field Data

Hypothesis 2: There is a notable difference between students and teachers in their preferred internet mediums for delivering, attending, and addressing doubts during online education.

Chi square test 1.87703E-13 which is almost equal to 0

Inference:

The p-value of 0.00 is less than 0.05, indicating a statistically significant difference in the choice of internet medium used by students and teachers for online education. Hence the hypothesis is accepted. This result highlights that students and teachers rely on different methods to access the internet for virtual learning—students primarily use mobile data, while teachers tend to use more stable connections like Wi-Fi., which have impact on the connectivity and quality of internet connection.

Challenges

The important challenges faced by the students, teachers, and Management/ Government are provided in the following table

Challenges faced by the students

Challenges faced by Students	% of Responses	Rank
Struggling with unstable or poor internet connections.	31	1
Limited access to smartphones and the internet for online learning.	24	2
Difficulty in understanding concepts delivered through virtual classes.	19	3

Maintaining focus and avoiding distractions during online sessions.	5	5
Financial strain in affording 2.5 GB of data daily for online classes.	18	4
Hesitation or difficulty in asking and resolving doubts during virtual lessons.	4	6

Source: Field Data

Challenges Faced by Students

The shift to online education during the pandemic brought significant challenges for students, as highlighted in the study. Students were asked to rate these challenges based on their experiences, and a weighted average index was used to determine which issues were the most and least impactful. The findings revealed that the primary challenge students faced was poor internet connectivity, a critical barrier to accessing online lessons. Many students also struggled with a lack of adequate resources, including smartphones and internet data, which further hindered their ability to engage fully with online classes. Understanding the subjects taught through a virtual format was another challenge, as the lack of face-to-face interaction made it difficult for students to grasp complex concepts.

Interestingly, despite these obstacles, asking questions and getting their doubts resolved was not seen as a major issue in the virtual environment. This suggests that while technical and resource-related barriers were significant, communication between students and teachers was more manageable, likely due to the use of online platforms that allowed for real-time queries and interactions.

Challenges faced by the Teachers

Challenges faced by the Teachers	% of Responses	Rank
Maintaining student engagement throughout virtual classes.	30	1
Developing effective skills for teaching in an online environment.	16	2
Managing low student attendance during virtual sessions.	14	3
Ensuring students are comprehending the material during online lessons.	11	4
Dealing with slow internet speeds and other technical disruptions.	9	5
Encountering a lack of student response when calling on them by name.	8	6
Preparing alternative arrangements in case of technical glitches or power outages.	6	7

Facing distractions such as background noise (e.g., radio or household chores) when students are unmuted.	4	8
Gaining the technical expertise to download and effectively use various online platforms.	2	9

Source: Field Data

Teachers, too, faced a unique set of challenges as they navigated the transition to virtual teaching. According to the study, their greatest difficulty was maintaining student engagement throughout online lessons. Without the physical presence of students in a classroom, keeping their attention became a constant struggle, especially as distractions at home often competed for students‘ focus.

Additionally, many teachers found themselves grappling with the new skills required for effective online teaching. With little to no formal training in virtual education, most had to learn on the go, relying on trial and error to adapt their teaching methods to the online format. The lack of proper student attendance compounded these challenges, with many students either unable or unwilling to attend online sessions regularly. This not only affected the flow of lessons but also added to teachers' frustrations as they attempted to deliver quality education in less-than-ideal circumstances.

Challenges		
Students	**Teachers**	**Management / Government**
Parents‘ ability to afford the required gadgets	Financing the Infrastructure	Financing the Infrastructure
Financing the infrastructure	Getting training	Motivating the Principal and teachers to take up online classes
Getting quality education	Effective delivery of classes in online mode	Training the teachers
Learning interpersonal & hands-on training	Network connectivity issues	Cutting down the Syllabus
Network connectivity issues		
Getting placements		
Inclusive education		

Source: The researcher has compiled based on primary data and his observation of the

Different HEI’s stakeholders

The study highlights the numerous challenges faced by students, teachers, and

management during the shift to online education amid the Covid-19 pandemic. Students rated their difficulties using a weighted average index, revealing that poor internet connectivity was the most significant barrier, followed by a lack of smartphones or reliable internet access. Understanding the material delivered online also posed a challenge, while asking questions or solving doubts was found to be less of an issue.

Teachers, too, faced considerable obstacles. The biggest challenge was maintaining student engagement throughout virtual classes, followed by the need to develop new skills for online teaching and coping with poor student attendance. The sudden transition to virtual education was particularly tough on students who lacked basic infrastructure like smartphones or laptops, and many struggled to concentrate in home environments with constant distractions and weak internet signals.

Teachers were affected financially as well, with many facing pay cuts or job losses, particularly in privately managed institutions. Some were required to purchase their own devices and internet packages without financial support from their employers. Additionally, the shift to online teaching required teachers to adapt to new technologies, often through trial and error, which created significant stress. The non-teaching staff also faced difficulties, with reduced roles and, in some cases, job terminations.

Management faced financial strain due to reduced or waived student fees, and many had to invest in virtual classroom infrastructure such as apps, devices, and internet connections for teachers. The pandemic created long-term uncertainties, demanding greater adaptability and resilience from all involved.

Way Forward

1. A blended approach combining online and face-to-face teaching can balance the benefits of both modes, as promoted by the NEP 2020, which emphasizes holistic, multidisciplinary education with flexible learning options.
2. Ensuring that economically and socially disadvantaged students have access to devices and affordable internet remains crucial to prevent exclusion from education.

3. Teachers should be trained effectively for online teaching to ensure quality and engagement.
4. Governments and HEIs must work together to ensure no student is left behind due to a lack of online infrastructure, focusing on inclusivity and equity as foundational principles in the post-Covid era.

In conclusion, while Covid-19 presented many challenges, it also accelerated the integration of online learning in traditional universities. The future of education is likely to see a blended approach, where both online and face-to-face teaching methods coexist. The lessons learned during this period will shape how education systems ensure inclusivity, accessibility, and quality moving forward.

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ARTICLES / 2

" Digital revolution in India: An analysis on digitization in Indian economy"

***Akanksha singh &**Dr. Jitendra Bahadur Pal**

Abstract:

The revolution that Indian economy needed came around as ―digital revolution‖ with the introduction of digital India program the digitization in government projects and activities have increased by implementing various e-projects, central government and state governments have started adopting the e-governance to enhance the efficiency of the projects which led to the transparency in government works and helps to perform efficiently. The digital India program includes 3 vision areas: Digital infrastructure, e-governance and services on demand, digital empowerment of citizens. These visionary areas will help the digital India programme transform the Indian economy. The automation in agriculture, service and industrial sector have enhanced the efficiency of these sectors and helps to utilize the resources sustainably and efficiently. The covid 19 has accelerated the digital revolution in India from paying the transaction digitally to buying groceries digitally whole India became digitally dependent and Indian government took this opportunity to transform India digitally.

Keywords: e-governance, covid19, digital economy

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Introduction:

The 21st century is the century of innovations and technologies. The internet era has consumed every aspect of human life. Today smartphones have become the necessity to run day to day business in a human`s lives. The fourth industrial revolution also called the digital revolution which influences the economy enormously. India took the advantage of being digitally independent and expand the economy digitally by launching the ―Digital India programme‖, A flagship programme of government of India which includes 3 vision areas: Digital infrastructure, e-governance and services on demand and Digital empowerment of citizens which includes digital literacy.

The umbrella program of government of India ―Digital India program‖ led us to digitization and technology driven economy to which we are dependent on. The activities like booking a flight to watching a movie and to hold a virtual meeting happened to be via internet servicesthe digital transactions are booming every day. The digital India program aims to deliver e- services to citizens related to health, education, agriculture, justice, financial inclusion and banking other services. India is one of the global leaders in running digital India programs like Adhar program which verifies the identities of 1.2 billion people digitally and holds the world`s largest biometric identification system and have the second largest mobile subscription base. The growth of digitization of the data and digitalization process has removed the boundaries of the economies and has crossed many miles. Digitalization integrates all the digitized data and information in one network and brings on one platform. The Digital Devolution Index (DEI) helps to gauge the progress of digitization of a country in the world. India ranks 53rd out of 60 countries in the world in digitalization index but 15th in case of countries momentum towards improvement in digitization showing positive attitude towards digitization. In this regard the GoIs initiative of 'Digital India Program' has a mission to develop required infrastructure, training and integrates all departments so that

Digital empowerment can be attained. (Keshava S.R. 2018)

A very few of the positive changes that the covid 19 and demonetization has given was the boom in digitization. The statistics have shown a tremendous digital growth during these periods. The data from the RBI shows that India is now clocking around 100 million digitaltransactions a year which is around 5 times

jump from 2016. In June 2021, The UPI in Indiarecorded a total of 2.8 billion digital payments transaction worth over five trillion Indian rupees.

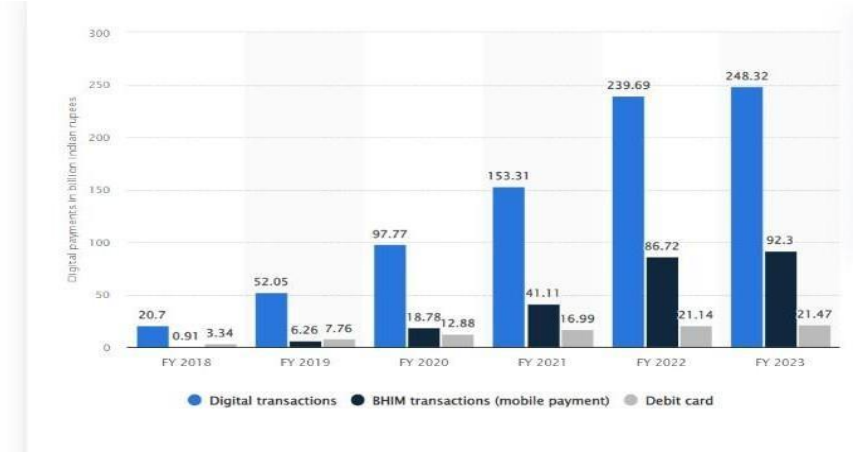


Figure:1

Source: www. Statista. Com

The digital revolution brought many opportunities by providing new job opportunities, cashless transactions, transparency, efficiency which leads to sustainable growth and development to the economy.

Objectives:

1. To analyze the digital India program of the Indian government.
2. To study the impact of covid 19 in digitization.
3. To study the impact of major sectors in India`s digital economy.

Methodology:

The objectives of the research are consummate through the secondary data. The study involves digital India program, various articles and research paper on digitization and studyof various sectors of the Indian economy.

Digital India program:

The government of India started initiative in e-governance during mid 1990s by including major projects such as computerization in railways and banking services etc. After that manystate governments have also adopted the e-governance. The e-kranti: National e-governance plan 2.0 was started in 2006, ―this program helped in transforming e-governance for transforming governance‖.

The campaign digital India was launched by the prime minister Narendra Modi, on July 1 2015. The campaign was launched to make government`s services more accessible to the citizens by improving infrastructure and internet connectivity all over the country. The main focus of e-governance or digital India initiative was to bring transformation by combining Indian talent and information technology for making better India for the future.

The digital India have 3 visionary areas:

1- Digital infrastructure as a core utility to every citizen.

2- Governance and services on demand

3- Digital empowerment of citizens

I. **Digital infrastructure-** The main aim of digital India is ―Digital infrastructure as a utility to every citizen‖ to connect the nation digitally to the remotest of Indian villages and provide high speed internet services.

Digital infrastructure include:

- Availability of highspeed internet services to every citizen of the country.
- Digitally citizen participation through mobile phone and bank account in financial space.

- Easy accessibility through common service centers.
- Shareable private space
- Safe and secure cyber surfing.

II. **Governance and services on demand-** e-governance is a sustained effort made by the government over the years to deliver the public services easily accessible through internet connectivity and provide government services efficiently also to have more transparency and reliability at affordable cost.

The six crucial elements include:

- Integrated services across departments or jurisdiction.
- Availability of services in real time.

Entitlements to be portable and available on clouds

- Digitally transformed services for doing ease of doing business.
- Electronic and cashless transaction
- Leveraging geospatial information system (GIS) for decision making and development.

II. **Digital empowerment of citizens:** The digital India program helps to transform the Indians digitally by providing the digital literacy, digital resources, and collaborate with digital platforms. Empowerment of citizens through:

- Provide universal digital literacy
- Provide accessibility to digital resources
- Documents and certificate availability on cloud
- Accessibility of digital resources and services in Indian languages
- Participate and collaborate with digital platforms.

Program pillars of digital India:

The digital India programme covers multiple government ministries and departments by making these departments come together and coordinate which is being done by the department of electronics and information technology(Deity) with the aim to provide successful implementation of digital India with the help of 9 growth pillar areas: Broadband Highways, universal accessibility of mobile connections, public internet access program , e- governance: government

transformation through technology, e-kranti : e- delivery of services,information for all, electronics manufacturing, IT for jobs, Early harvest programs. All these pillars cover multiple departments and ministries.

- **Broadband highway:** Working on providing digital connectivity to rural areas with the help of optical fiber cable to gram panchayats and also work on improving internetconnectivity in urban areas by solving the issues right away.
- **Universal mobile connectivity:** Working on providing internet services by providingmobile service connectivity to pan India and expand the mobile coverage.
- **Public internet access:** Providing accessible internet connections to common servicecenters and post offices also provide e-services to villages and to remotest of locationin the country.
- **E-governance:** e- governance projects and re-engineer the government services and efficiency.
- **E-kranti- electronic delivery of services:** Digitization in delivering the government services which will improve the efficiency, transparency and reliability in governmentprojects.
- **Information for all:** Providing open data platform to access all the government information in data.gov,in, myGov,in and digital connectivity of government and the citizens.
- **Electronic manufacturing:** Promotion of manufacturing of electronic products in India with the target of net zero imports by 2020.
- **IT for jobs:** Teach the digital skills to youngsters which help them employ in IT and IT enabled jobs. The various initiatives are introduced by the government which will help in reducing the gap and help in skilling the people by providing them trainings.
- **Early harvests:** launching biometric system for the attendance of government employees, establish government email, e-books, e-libraries etc.

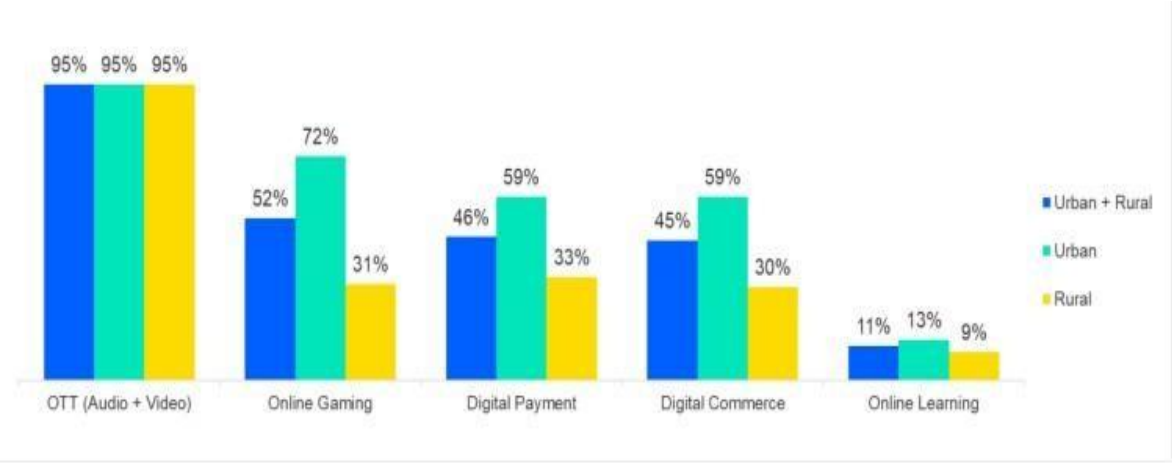
Impact of covid 19 on digitization:

Covid 19 acted as a catalyst for digitization in India and helped save the Indian economy during with the help of digital India initiative by the government. During lockdown when whole world was stuck and inside their homes the internet saved the world by providing services digitally from buying groceries to digital transactions, from teaching online to holding big corporate meetings via zoom the whole world got dependent on the Internet. Thegovernment of India took the opportunity and had launched several e-governance apps to provide services directly to the citizens. Arogya setu App, MyGov App, PMO India App, MADAD App and so on are some of the e-governance apps launched by the Indian government. The consumer`s behavior have changed dramatically in the last 2 years and nowdemand easy, quick and accessible services. The big companies

shifted their strategy or business plans and started running their companies

digitally which is an affordable and accessible way to continue running their business. According to digital India report 2022 there are 658.0 million internet users in India in January 2022 and there were 467.0 million social media users in India in January 2022.

Figure:2



Base: Kantar ICUBE 2020, Active Internet Users, All India 622 Million, Urban India 323 Million, Rural India 299 Million

According to Kantar 2020 report the growth of the internet users has increased in the year 2020 tremendously. The above data shows the usage of internet users on different activities and shows a strong internet base of Indian citizens. The digital

payments, online learning, digital commerce, online gaming has helped the Indian economy to survive. The digitization brought considerable new employment opportunities and now citizens are aware of the new technologies in the market. The edtech business, e commerce business, digital payment appssaw a boom in terms of their business growth and profitability in the covid 19 period and continue evolve their businesses according to the changing market`s demand which made Digital India programme a successful program by the Indian government that supported various companies to run their businesses digitally by focusing on their 9 digital India pillarsand make a digitally empowered economy.

Digitization in agriculture sector:

The agriculture sector is considered as the major sector of India. Agriculture sector employs more than half a population of India. According to the economic survey 2020-21currently theagriculture sector is valued at US$ 370 Billion and contributes 19.9% of India`s GDP. With the challenges that agriculture sector is facing of significant growth in the demand of food, increasing population burden, obstacles in the availability of resources required for agriculture production demands a revolution in agriculture and digital farming technologies iswhat agriculture needs to survive all the challenges. The government of India has taken steps in digital technologies that helps in ensuring higher crop yields and sustainable development by usage of less water consumption and chemicals in farming techniques.

The government of India has initiated many steps to revolutionize the agriculture sector. In September 2021, The union minister of agriculture and farmers welfare, Mr. Narendra singhTomar has issued the digital agriculture mission 2021-2025 with the objective to support thenew technologies like AI, GIS technologies, block chain, usage of drones and robots in agriculture farming.

The ministry of agriculture and farmers welfare has also introduced various digital application to support the digital farming-

1. The government has introduced India digital ecosystem of agriculture (IDEA) a framework for federal farmers. This database helps in linking various schemes and

digitize the land records. The ecosystem will help the government in effective planning.

2. The scheme ―Agriculture infrastructure fund‖ The digital connectivity and optic fiber infrastructure are covered under this scheme. The scheme will provide the post-harvest management infrastructure and community farming assets.
3. National agriculture market (eNAM) is a pan India electronic trading portal that will link the agriculture produce market committee (APMC) and create a unified national market for agricultural commodities with the objective to create online transparent competitive bidding system. As on 29th November 2021 more than 1.72 crore farmersand 2.05 lakh traders have been registered on e-NAM platform.
4. Direct benefit transfer (DBT) central Agri portal – An Agri portal for agricultural schemes launched across the country in January 2013. The portal helps farmer buy modern farm technologies with the help of government subsidies.
5. Digital initiative includes Kisan Suvidha, M- Kisan application, Farmo-o-pedia App, Pushpa Krishi, crop insurance android, Agri market, Shetkari Masik android app etc.

Benefits of digital agriculture:

The digitization in agriculture help recognize the farmers what their crops need. A reliable and monitoring farming technologies will help farmers to have digital analysis of farm cropsand lands and help the farmers to act accordingly in activities like excess pesticides, fertilizers and usage of water consumption during farming.

Other benefits include:

- Reduces environmental degradation and helps in sustainable farming.
- Upliftment in economic status of the farmers.
- Enhance in safe farming activities
- Digitization Helps to lower the production cost of the farming
- Enhance the agricultural productivity
- Promotes the effective way usage of water in farming techniques.

Digitization in industrial sector:

The government of India has initiated many policies to make India a self-reliant country and achieve 1 trillion manufacturing sectors by 2024. The SMARUTH programme is supporting demand creation by leading industry 4.0 such as NASOM,CII and FICCI. Department of heavy industry with its smart advanced manufacturing and rapid transformation hub (SAMARTH)- Udyog Bharat 4.0, make in digital India, make for India. The adoption of digital technologies will help gain productivity in overall business. All the digital transformation in other sectors has recognized the need of digitization in industrial sector by automating the factory in digital transformation of their vertical and horizontal value chains and automation in logistics and manufacturing. The adoption of machine learning enabled demand sensing, AI usage in manufacturing is a step towards digitization in industrial sector.

Benefits of digitization in industrial sector:

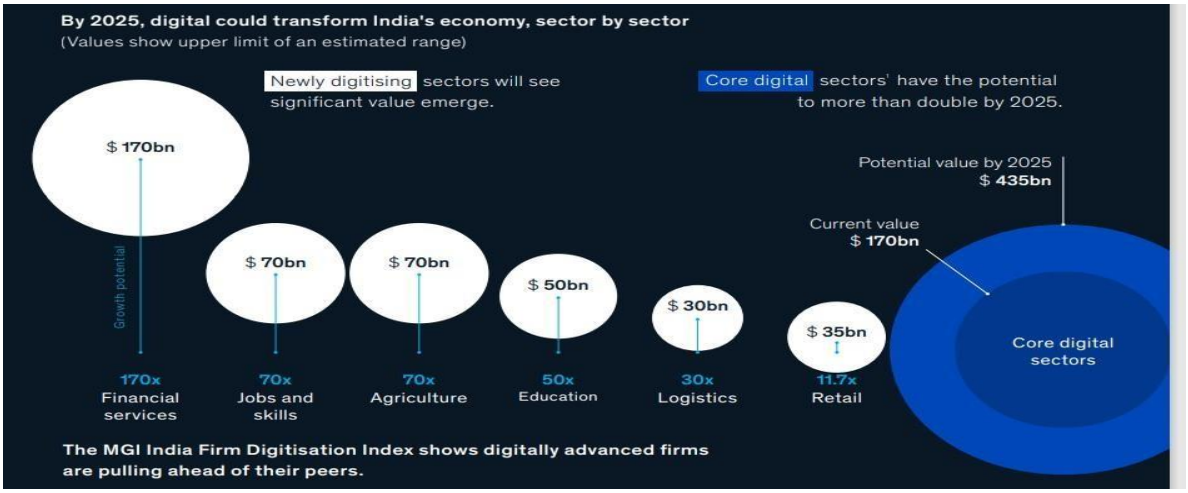
- The digitization or automation in industries will increase the effectiveness in procuring raw material and also help in running smooth function of supply chain management.
- Digitization will help in creating innovative products through product development strategy.
- The market availability of digitization through social media will help in creating wider marketing base and increase their accessibility of products.
- Digitization will help in creating new jobs in industries to run their automated machines.

Digitization in service sector:

The service sector of India plays an important part in growth of the Indian economy and contributes 53% of gross value added at current price in until January 2022 and contributed significantly in foreign investment and in export of goods, the export stood at US$117.6 billion in April-september2021 and also provide large scale employment. The India`s IT service market is expected to reach US$19.93 billion by

2025. The service sector contributes in the development of digitization in companies and government are consistently moving towards the digital functioning on service sector by introducing various programs: In August 2021 the department of telecommunication to introduce a one web satellite communication service, tata tele service collaborated with zoom video communication, The ministry of education and university grant commission introduced an online interaction with stake holders, Elon musk`s spaceX starlink satellite internet service has started accepting orders, healthcare industry is shifting to digital consultation services. According to Mckinsey global India report by 2025 core digital sector like IT and business process management, digital communication services, and electronics manufacturing could double their GDP level to $355billion to $435 billion.

Figure:3



Source: Mckinsey global institute digital India report

The above data by the Mckinsey report shows a newly digitize sectors like agriculture, education, energy, financial services, healthcare, logistics, and e commerce or retail sector each of these sectors could reach from $10 billion to $150 billion of a value in 2025. The automation or digital adoption in these service sectors will help in increasing their output by providing time efficient and cost effective services to the citizens and help in improve the demand and supply.

Impact of digitization in major service sector areas include:

- **Digitization in healthcare:** The introduction of automation in healthcare sector has empowered the healthcare professionals and with the spread of covid 19 it became a

necessity to use digitization in healthcare as a form of e-consultation,

videoconferencing service, home delivery of medical services just by clicking in the app and many more covid 19 taught us the necessity of digi health services that is not only benefitting the citizens but also benefitting the healthcare system. The national health policy 2017 recommended the usage of Adhar as a unique identification number for the beneficiaries the usage of smartphones and national optical fibre network for building the national health information architecture. There are numerous e- governance initiative which will help transform the healthcare system and these are national health portal, e-hospital, central government health services(CGHS) portal, ―hum do‖ website, Ayushman Bharat, Pradhan mantri jan Arogya yojana portal, NHP Indradhanush vaccine tracker, National health portal directory services and so on. The integration of robotics results in the increased precision and support in various healthcare services.

- **E-commerce:** The technology has transformed the business in India. The Indian e-commerce market is expected to grow US$188 billion by 2025. The digital India program has accelerated the growth of e-commerce in India. After China and USA India is the third largest online shopping destination. The e- commerce industry is impacting MSME in India boosting the employment, exports, increasing tax collection. As of February2022 the Government e-market place (GeM) portal served

  9.04 million orders worth rupees 193.265 crore (US$26.65 billion) to 58,058 buyers from 3.75 million registered sellers and service providers.

- **Digitization in education:** The digitization has transformed the education in India the covid 19 made every student to learn through technology. To boost the digital education various initiative are introduced by the government: National digital educational architecture (NDEAR), PM e-Vidya Programme diksha, Swayam Prabha e-pathshala portal, Nishatha virtual labs etc. The edtech market have reached US$

  3.5 Billion in 2022 proving that education has no barrier by providing real time teaching experience with the help of internet the government recognized the importance of digitization in education could help reach millions of Indians even in

the remotest of the places just by strengthening the digital infrastructure and providingthe digital education.

- **Digitization in hospitality:** The hospitality and tourism industry are one of the largest sector of service sector end employs large number of people in these industries with the introduction of technologies such as facial recognition, artificial intelligence, data analytics etc; will help to accelerate the revenue in these industry. Various apps such as Zomato, Swiggy, make my trip, oyo which are giant companies run their tech businesses in these industries and showed that the digitization could help make betterand quick services to the people and earn profit too.
- **Digitization in banking and financial services:** Banks and financial institutions andbecoming digitally active that benefits the citizens the providing the them quick financial services and having virtual branches/self- services, end to end process digitization including trading, claims management, offer/order processing) and give seamless experience overall after the pandemic the introduction of various e- services are provided by the banks such as high-speed trading, Analytics-driven forecasting, Digital wallets / savings/ credits.

Conclusion:

The digital revolution of India is a success and its success goes to the digital India program by the government of India the automation in different sectors of Indian economy was happening way before 1990s but the digital India program helped accelerate this digital revolution with the help of its ambitious 3 visionary areas that is digital infrastructure, governance and services on demand and digital empowerment of citizens. The lockdown situation due to covid19 only digitization was holding the economy the government was providing its services digitally, companies were running with the help of internet the businesses of companies shifted digitally this catalyzed the digitization in India and soon everybody was dependent on internet and helped accelerate digital economy to the new heights the automation or digitization inagriculture, service and industrial sector will help create effective work environment and increase the productivity in these sectors and India is soon to be trillion dollar digital economy.

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ARTICLES / 3

Agricultural Development in India vis-à-vis Odisha: Changing scenarios and way forward

Dr. Sarba Narayan Mishra[1*], Avisweta Nandy[2]

ABSTRACT

Agriculture is vital for the progress of the developing nations. In India 54.6 per cent of the workforce is engaged in agriculture. Since independence the economy of India has seen significant changes in various sectors including agriculture. The agricultural policy development in India has been divided into five phases based on significant technological changes and policy reforms. The agricultural production has significantly increased after the _Green Revolution‘ making India a foodgrain surplus country. _Operation Flood‘ has helped India in becoming the leading producer of milk in the world. In fisheries too India has improved its global rankings. In Odisha, there has been outstanding growth in agriculture and its allied sectors with overall increase in production and productivity. However the average farm revenue still remains low. Therefore the government should focus on more
―farmer-centric‖ agriculture and work towards its diversification. The livestock and fisheries sector should also be organised. Proper extension and R&D facilities should be provided so as to further improve it in the direction of ensuring food security. There is ample scope for improvement in the direction of doubling farmers income given the agriculture and allied sectors are integrated efficiently.

KEYWORDS

Agricultural development, Agri-allied sectors, Agricultural productivity, Agricultural household income

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INTRODUCTION

George Washington once observed, "Agriculture is the healthiest, most beneficial, and most honourable employment of man." The world's greatest industry and primary land-use, accounting for around 40% of all available land, is agriculture, which is the only source of human nourishment (Ramankutty et al. 2008). In order for developing nations to develop economically, agriculture is essential. In addition to making a large contribution to the market for industrial goods, it is a key source of food, employment, and foreign exchange revenues (Tripathi and Prasad, 2009; Ajmair, 2018).

Worldwide, but particularly in India, which occupies only 2.2% of the planet's landmass and sustains 15% and 18% of the world's cattle and human populations, respectively, the demand for natural resources increased as a result of the population boom. (Shilpa S. Selvan, 2021). With a predicted decadal growth rate of 18 percent, India's population is projected to reach 1.5 billion people by 2050. Most developing nations, including India, where more than 65.5% of the population lives in rural regions, view the expansion of the agricultural sector as an essential strategy (WB, 2019). According to the Census of 2011, 54.6 percent of the workforce is employed in agricultural and related sector activities, which are expected to contribute 18.8 percent (First Advance Estimates) to the nation's Gross Value Added (GVA) for the years 2021–22. (at the current prices). Given the

significance of the agriculture industry, the Indian government has adopted a number of measures to ensure its sustainable growth. (Ministry of Agriculture and Farmers Welfare, 2021-22).

Since gaining independence, India's economy has seen substantial change, particularly in the area of agriculture. It is no small feat to go from a country with a serious food deficit in the middle of the 1960s to one that is self-sufficient and becomes the world's top exporter of rice and milk in 2020–21. Similar breakthroughs have been made in cotton, fishing, cotton, fruits, and vegetables. All of this was made feasible by the liberal application of contemporary technology, institutional reforms that included smallholders in this shift, and the facilitation of appropriate incentives for growers. Many emerging nations in the south and south- east Asia, as well as the continent of Africa, can learn from this. However, India still has a lot of problems with food security. Children continue to suffer from high rates of malnutrition, and the viability of agricultural output is called into doubt by the country's generally declining water table.

According to the Census of 2011, 54.6 percent of the workforce is employed in agricultural and related sector activities, which are expected to contribute 18.8 per cent (First Advance Estimates) to the nation's Gross Value Added (GVA) for the yea rs 2021–22. (at the current prices).

Given the significance of the agriculture industry, the Indian government has implemented a number of measures to promote its development in a sustainable way (Ministry of Agriculture & Farmers Welfare, 2021-22).

Evolution of Agricultural Policy in India

Since the country's independence, agriculture has been the main industry and source of wealth in India. India's agriculture policy development may be roughly divided into five phases. Around 73 percent of the entire working population was employed in the agriculture and allied industry during India's first ten years of independence, and the sector provided roughly 51.81 percent of the country's national income. However, from 51.81 percent in 1951 to 18.20 percent in 2013–14, agriculture's contribution to the national income has significantly decreased. The first phase runs from 1951 to 1965, during which time industry was prioritized over agriculture primarily. The second phase, which spanned from 1966 to 1981, saw the introduction and widespread adoption of HYV or green revolution technology in the nation. Through a mix of technology, an acceptable policy framework, and suitable institutions, India achieved food self-sufficiency during this time. The third phase spans the years 1981 to 1991 when technology from the green revolution extended across the nation and led to more equitable inter-regional growth. During this time, public investment in agriculture began to slow down. The fourth phase lasts from 1992, when the macroeconomic changes were introduced, to 2004. During this time, the overvalued exchange rate regime was corrected in order to lessen anti- agricultural bias. The state's involvement in agriculture was also attempted to be diminished. This phase of agricultural expansion was negatively impacted by the prior era's fall in governmental investment. The final phase dates from 2005, a year in which numerous projects were started and the state's role in agriculture increased (Singh, 2020).

The government's price strategy for the main agricultural commodities is to guarantee that growers receive fair compensation for their products in order to

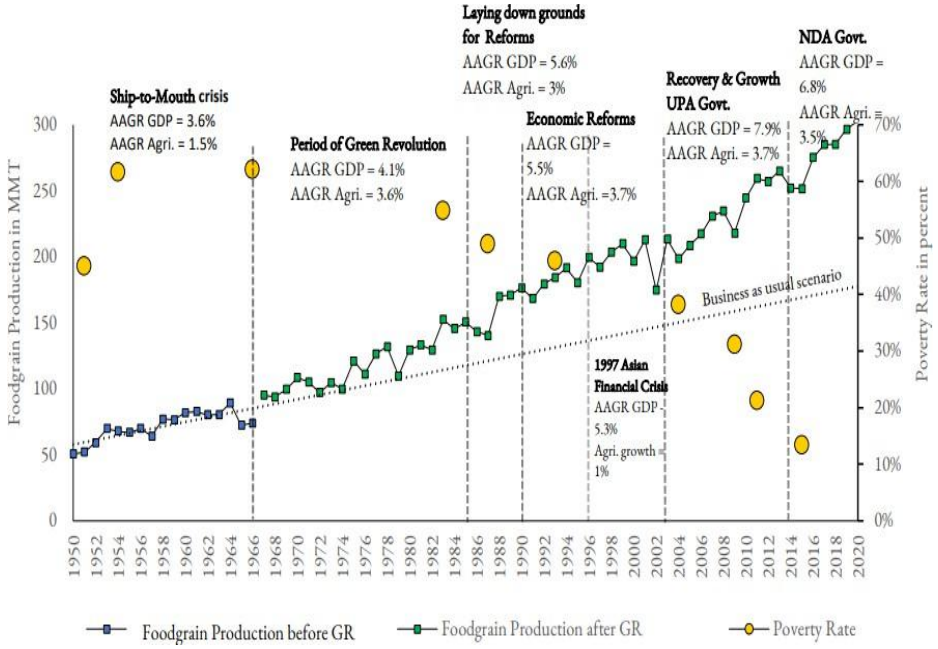
promote increased production and investment, as well as to protect consumers' interests by making supplies available at competitive rates. In order to achieve this, the Government, taking into account the opinions of the relevant State Governments and Central Ministries/Departments, announces Minimum Support Prices (MSPs) for the twenty-two (22) mandated crops as well as Fair and Remunerative Prices (FRPs) for sugarcane at the national level. Agriculture growth is the minimum and necessary condition for Inclusive growth in India. Food security, price stability, income and livelihood of the majority of Indians lie in agriculture. The transformation of the present static rural India into dynamic happening economy is possible only with the overall development of Agriculture in India. Agriculture is the backbone of Indian Economy. The Contribution of Agriculture to GDP which was 51% in 1950-51 declined to 26% in 2003 and during 2006-07 it further declined to 18.5%. It is said that more the development, Lesser will be the share of Agriculture to GDP. (Keshava S.R 2010). Agriculture development is the key to poverty eradication in poverty rich rural India and over all rural development. Agriculture is highly labour intensive with a huge potential to create jobs in rural India. The cost of cultivation data has revealed that labor accounts for 40% of total variable cost of crop production. Hence the revival of agriculture also helps in the rejuvenating of the livelihood for the majority. But the job creation is limited by productivity of the land. Larger the productivity of land, higher will be the job creation; more will be the poverty eradication. If agriculture is not developed, the farmers will be in the midst of poverty and thereby, low standard of living. The farmers who give com to society himself will be hungry as economic stagnation prevails due to lack of agriculture development. Hence agriculture should not be

ignored. (Keshava S.R. 2013). poverty levels have declined drastically, extreme poverty ($2.15/day) dropped from 16.2% in 2011–12 to just 2.35% in 2022–23, a reduction of nearly 86% in terms of proportion. Moderate poverty ($3.00/day) saw a similar sharp decline, from 27.12% to 5.25%, a fall of over 80%. The absolute number of poor people fell from 205.9 million to 33.6 million (extreme poverty), and from 344.47 million to 75.2 million (moderate poverty). This shift represents more than economic change—it symbolises hope, empowerment, and growing social justice. (Keshava S.R. & Hanumantharayappa B. H 2025).

Performance Indicators of Agricultural development

Based on an Autoregressive Distributed Lag (ARDL) technique approach study by Nand Kumar *et al.* from 2021 explores the key variables influencing the performance of the agriculture industry. Using the ARDL technique and time series data gathered from 1991–1992 to 2015–2016, the research explores the key variables affecting the performance of the agriculture industry in India. A long-run association between a few model variables was found using the ARDL-based Bound test. The Bound test revealed that the chosen variables of interest had a long-term link. The study's projected findings showed that throughout time, the use of certified seeds, fertilizer, net irrigated area, and pesticides significantly and favourably impacted the agricultural GDP. However, only two factors—certified seeds and pesticides—have had a major short-term impact on the agricultural GDP. The model is stable according to statistical diagnosis, and there is also no serial association (Nand Kumar, 2021).

Fig-1: Average Annual Growth rate (AAGR), Gross Domestic Product (GDP), Agriculture Gross Value Added (GVA) and Per Capita Income (PCI) of India



Note: Average Annual Growth rate (AAGR) of India's Gross Domestic Product (GDP), Agriculture Gross Value Added (GVA) and Per Capita Income (PCI) is calculated at constant 2011-12 prices. **Source:** The World Bank,2019; GOI 2020; MOSPI 2021.

There are four main ways that an agricultural household can make money. I) revenue from agriculture II) revenue from animal farming III) wages and salary iv) revenue from jobs other than farming. Data on income from "letting out of the land" was also gathered in the most recent set of surveys. According to data from the NABARD All India Rural Financial Inclusion Survey (NAFIS), there are six different ways to earn money: agriculture, livestock farming, other businesses, wage labour, govt./private services, and other sources. Income from "wage labour" and "govt/private services" are combined and referred to as "wages and Salaries" to make it comparable with the SAS data. Some intriguing findings are produced by looking at how farmers' revenue is distributed. Over time, less and less of an income is generated by agriculture. Out of the total income of Rs. 2115 earned in 2002-03, 46% came from crop cultivation, 4% from raising livestock, 39% from salaries and

wages,n and 11.2 % from non-farm activity.

Ritika Juneja *et al.* examined the performance of Indian agriculture during the economic reform and post-green revolution periods. The compound annual growth rate of important food and non-food crops was determined using a semi-log model. The shift in crops and land use patterns were investigated using descriptive statistics. To assess the wise application of chemical fertilizers, the fertilizer use ratio was determined. The results of the study show that although the early 1960s food crisis was somewhat alleviated by the green revolution, it also introduced regional differences in resource consumption, productivity, and cropping patterns. Scarcity in some cash crops is caused by promotional price policies for those crops. The vulnerability of farm revenues in particular and farmers' means of subsistence, in general, is rising as a result of changes in economic, technological, and environmental conditions (Ritika Juneja, 2021).

India has made significant progress during its 75-year development process, as seen by its economic growth and decline in extreme poverty, among other economic indicators. But we still have a long way to go. The NSO 2018–19 data analysis shows that farmer income growth has been substantially less than anticipated. According to the Dalwai Committee report, real incomes had to increase by 10.4% in order for farmer income to double (between 2015- 16 and 2022-23). However, real income barely increased at a CAGR of 3% between the past two SAS rounds (2012–13 and 2018–19), and nothing miraculous is going to happen in the following four years. Agriculture policy, which is now skewed in favour of the crop sector, requires a significant overhaul (Ritika Juneja, 2021) (Fig. 2).

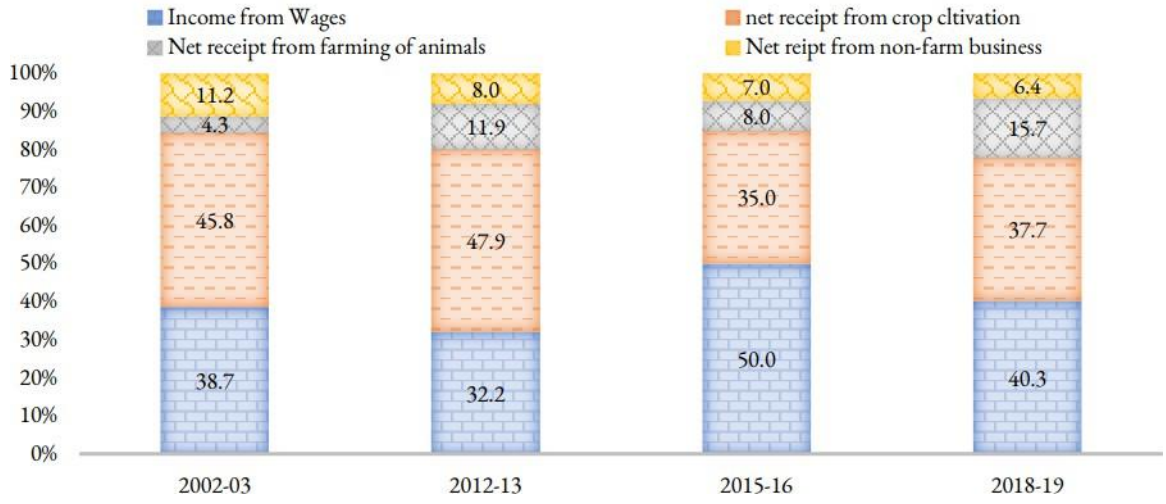
Large differences in agriculture household income between states are revealed by disaggregated state-level analyses. According to SAS 2018–19 data, farmers in Meghalaya earned the most money ($29,348), followed by those in Punjab ($26,701), and Haryana ($22,841), Arunachal Pradesh ($19,225), and Jammu and Kashmir ($19,225). (Rs.18,918). Farmers in eastern India were found to be the poorest, with the lowest incomes among all the states coming from Bihar (Rs. 7,542), West Bengal (Rs. 6,762), Odisha (Rs. 5,112), and Jharkhand (Rs. 4,895). In Odisha, the average farm revenue per month is Rs. 4663. (individual agriculture household).

Table 1: Average monthly income per agriculture household in Odisha

Components	Average monthly income per agriculture household 2012-13 (in Rs) – 70th round NSSO	Average monthly income per agriculture household 2018-19 (in Rs) – 77th round NSSO
Income from wages	1716	2649
Income from leasing pout of land	NA	29
Net Receipt from cultivation	1407	1569
Net receipt from farming of animals	1314	416
Total Farm Income	4437	4663
Net receipt from non-farm business	539	449
Total income from All Sources	4976	5112
Total Consumption Expenditure	4307	--

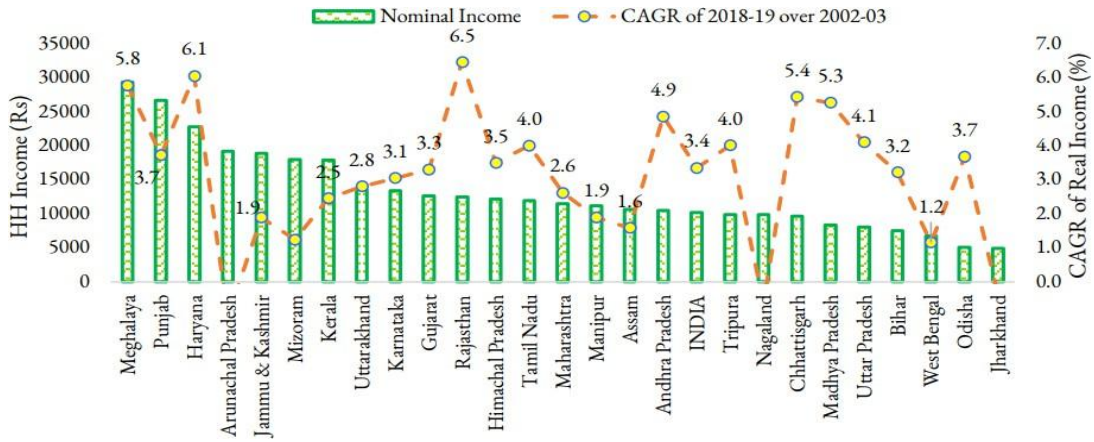
Source: - Key indicators of Agriculture situation in India, 70th & 77th round NSSO)

Fig-2: Average monthly income per agriculture household in India



Note: For comparability across rounds ―income from leasing out of land‖ is excluded while analysing 2018-19 data. **Source:** SAS and NAFIS

Fig-3: CAGR of 2018-19 over 2002-03 in India



Source: SAS, 2018-19

The scenario of Agricultural development

Expanding the area under cultivation was India's main source of agricultural growth during the 1950s and 1960s, claim Tripathi and Prasad (2009). The headcount ratio (HCR), measured by a per day per capita income of USD 1.9 (at PPP of 2011–12 prices), rapidly decreased from more than 70% at the time of

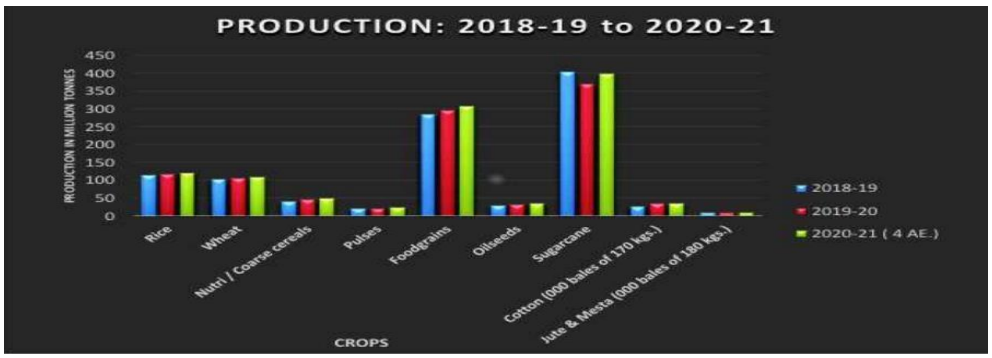
independence to 54.8% in 1983 to 45.9% in 1993 to 38.2% in 2004 and to 13.4% in 2015. (World Development Indicator, 2019). According to recent estimates, the HCR for poverty in 2017 ranges from 8.1 to 11.3 percent (Gulati, 2021).

The country launched the "Green Revolution" in 1966–1967, a new agricultural policy that was primarily focused on using agricultural technologies to boost agricultural production. This new agricultural strategy's execution led to a significant increase in production and productivity in the agricultural sector. A key component of this plan was the High Yielding Variety (HYV) package. Liberalization, deregulation, privatization, and globalization of the Indian economy were the key goals of the audaciously begun economic reform process in India in July 1991. Being a WTO member, it is thought that the process of economic reforms indirectly impacted the agriculture sector as well as other industries through devaluation of the currency, trade liberalization, and industry deregulation (Tripathi and Prasad, 2009). A decrease in the sector's contribution to total development from 28.5% in 1991–1992 to 17.8% in 2019–20 is a hallmark of the agriculture sector's post-economic reform performance (MAFW, 2020). Despite the new agricultural strategy that the Indian government implemented in 2000 to achieve an output growth rate of 4% per annum, the real growth rate of the agriculture sector even after the stipulated term was found to be less than 3% (Nand Kumar, 2021). The agriculture and related industries provided roughly 18.8% of India's GVA at current prices during 2021–2022, according to the First Advance Estimates of National Income, 2021–2022, published by the National Statistical Office (NSO), Ministry of Statistics & Programme Implementation. According to the Fourth Advance

Estimates for 2020–21, the nation would produce a record 308.65 million tonnes of

food grains, an increase of 11.14 million tonnes over what was produced in 2019–20. Additionally, the production of food grain in 2020–21 is greater by 29.77 million tonnes than the average output during the preceding five years (2015–16 to 2019– 20). A record 127.93 million tonnes of rice were produced overall in 2020–21 more than the expectation of 122.27 million tonnes. It exceeds the average production of the previous five years, which was 112.44 million tonnes, by 9.83 million tonnes. A record 111.32 million tonnes of wheat were produced in 2020–21 which was more than the expected 109.52 million tonnes. Compared to the average wheat production of 100.42 million tonnes, it is higher by 10.90 million tonnes. (Ministry of Agriculture & Farmers Welfare, 2021-22).

Fig-4: Gross agricultural production in India (in million tonnes)



Source: Department of Agriculture and Farmers Welfare, India

India is now the world's largest producer of poultry meat, milk, cotton, pulses, and spices. It is also the world's second-largest producer of wheat, rice, fruits, and vegetables. Additionally, it is the biggest exporter of beef, spices, and rice. Modern technologies that were backed by the appropriate institutions and incentives made all of this possible. The use of high-yielding varieties of rice and

wheat, together with irrigation, fertilizers, and a favourable price policy, brought

about the infamous Green Revolution in India, and this is still the most important factor (Gulati, Paroda, Puri, Narain, & Ghanwat, 2021).

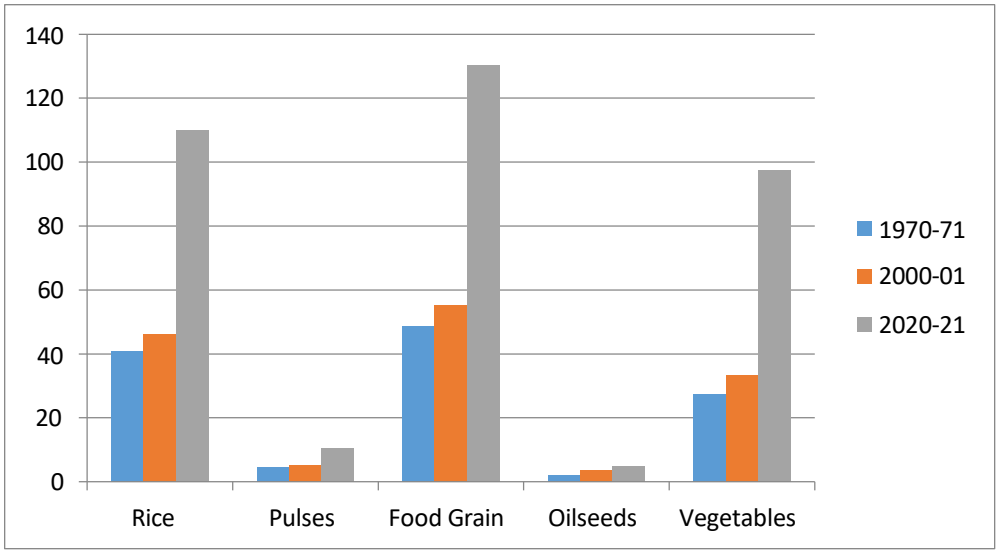
The predicted output of food grains in Odisha in 2020–21 is 130.39 MT, which represents a surplus of 31.51 MT. The output of pulses and oilseeds, however, is insufficient.

Table -2: Total agricultural production and productivity in Odisha

Crop	Production in Lakh MT/Bales*		Productivity (kg/ha)		Overall % Growth Productivity
	2001-01	2020-21	2001-01	2020-21	
Rice	46.14	109.99	1041	2730	162
Maize	2.17	8.32	1235	3195	159
Ragi	1.52	1.37	801	1105	38
Pulses	5.07	10.44	365	548	50
Oilseeds	3.74	4.79	531	907	71
Cotton*	0.65	5.51	283	547	93
Vegetables	33.37	97.55	9369	14228	52
Sugarcane	21.02	15.02	66951	72268	8

Source: Department of Agriculture& Farmers' Empowerment, Govt. of Odisha

Fig-5: Growth in agricultural production in Odisha



Note: Growth in agricultural production in Odisha (in MT)

Source: Department of Agriculture& Farmers' Empowerment, Govt. of Odisha

The nature, scope, and scale of climate change vary depending on the area and place. As a result, local analysis, planning, and administration are needed to address the concerns of climate change and the problems that result from it. Both annual and perennial horticultural crops need to be analyzed and understood in relation to regional climate change, which might be handled through innovation, technological review, and improvement to provide efficient solutions to the difficulties (Malhotra and Srivastava 2014).

Horticulture-based farming systems have a high capacity to store carbon for the purpose of reducing climate change. Instead of throwing away horticulture waste at local landfills, it might be composted, lowering the amount of methane released into the atmosphere, which contributes to global warming (Malhotra, 2016).

The scenario of Livestock Sector

The institutional innovation of "Operation Flood" fundamentally altered the system of milk collecting from smallholders within a cooperative framework, homogenization, pasteurization, and distribution to megacities as away as 1,800 kilometers. The invention made it possible to carry goods via a planned retail network in bulk coolers with temperature controls set at 3.9 degrees Celsius (Gulati, Paroda, Puri, Narain, & Ghanwat, 2021). India now holds the top rank in the world for milk production, surpassing the USA, whose production averaged around 100 MMT, which climbed from 23 MMT in 1973–74 to 208 MMT in 2020–21. India's chicken industry, which was a backyard system in the 1970s, saw a remarkable transformation into an integrated and commercial sector, mostly driven by private

entrepreneurs. Between 2000–01 and 2019–20, poultry in India grew at a rate of growth projected to be over 10% per year thanks to institutional innovation in contract farming and vertical integration of farm operations.

Table 3: Total livestock production in the country

Year	Milk (Million Tonnes)	Eggs (Million Nos.)	Wool (Million Kgs.)	Meat (Million Tonnes)
2013-14	137.7	73,438	47.9	6.2
2014-15	146.3	78,484	48.1	6.7
2015-16	155.5	82,929	43.6	7.0
2016-17	165.4	88,137	43.5	7.4
2017-18	176.3	95,217	41.5	7.7
2018-19	187.7	1,03,318	40.4	8.1
2019-20	198.4	1,14,383	36.8	8.6
2020-21*	209.9	1,22,049	36.9	8.8

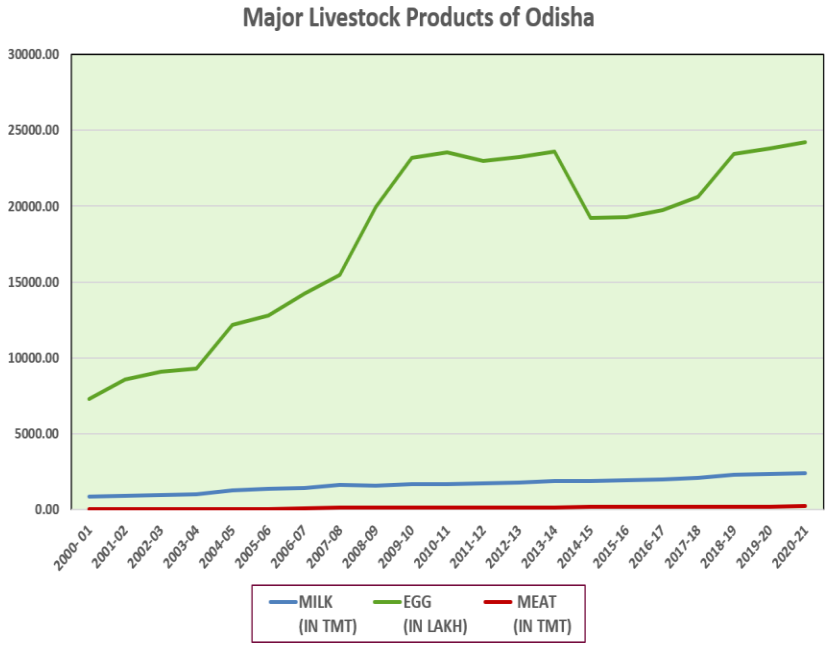
Source: State/UT Animal Husbandry Departments

In Odisha, the backyard sector contributes 44,815 eggs every day. Odisha's desire for native breeds like Kadaknath and Asli has grown significantly in 2020. The market for brown eggs is also very popular. Odisha has developed livelihood and entrepreneurship programs/schemes to advance the ARD project in a direction for the people's economic benefit. Small and landless farmers have been provided with chicken units with a capacity of 200–500, 10+1 small goat units, or 2-4 cow units. Similar equipment has been built for medium-level farmers, including 1000 capacity, 30+2 small goat units, 10 cow units, a small hatchery unit, and a unit for raising chicks. Medium to big farmers can purchase broiler units with capacities of 4,000–10,000 birds, 50–5 goats, and for more experienced business people, NLM units and MKUY units.Only 1.17 percent of the nation's milk is produced in Odisha, which also has 6.82 percent of the nation's female cattle. To 96.01 lakh eggs per day

in 2021–2022, egg production has increased by 22.46 percent. Dairy intake has gone

from 94 grams per day (2004–2005) to 144 grams per day on average (2021-22). Compared to 0.5 to 1 litre during the 1990s, the average output of indigenous cows has climbed to 4.5 litres. In comparison to the 1980s, milk production from cross-bred cows increased by 26.5 percent, to an average of 8 litres. The public has accepted value-added milk and milk products well, and by 2021, that acceptance is more than 20% as well as the hike in price. (FAO, 2013). Sweet Dahi (40.55%), Sweetened Flavoured Milk (28.72%), Toned Milk (24.76%), and WMC were found to be the most lucrative products in Odisha (22.46 %). According to an OMFED study, the profitability of Rabidi and Butter Milk Sip is 19.22% and 19%, respectively. In Odisha, paneer is the top value-added product after milk.

Fig-6: Major livestock products of Odisha



Source-Directorate of Animal Husbandry and Veterinary Sciences, Odisha

The scenario of Fishery Sector

A significant industry in India, fishing employs millions of people and helps

to ensure the nation's food security. With a contribution of 1.07 percent to the national GDP and 5.30 percent to the GDP of agriculture, India now ranks second in aquaculture and third in fisheries production.

Table 4: Total fisheries production in the country

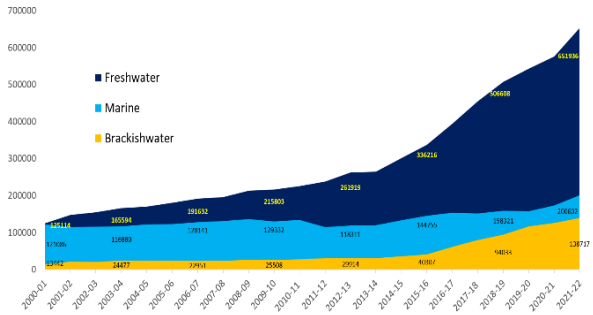
Year	Marine Fish Production(In Lakh tonnes)	Inland Fish Production(In Lakh tonnes)	Total(In lakh tonnes)
2014-15	35.69	66.91	102.6
2015-16	36	71.62	107.62
2016-17	36.25	78.06	114.31
2017-18	37.56	89.48	127.04
2018-19	38.53	97.2	135.73
2019-20	37.27	104.37	141.64

Source: Department of Fisheries, States Government / UTs Administration

Odisha, an eastern Indian state on the Bay of Bengal coast, is one of the top maritime states for fish production and now comes in fourth overall behind Gujarat, West Bengal, and Andhra Pradesh. Inland and marine fisheries resources are abundant in Odisha, which is also home to the second-biggest coastal lagoon in the world and the largest brackish water lagoon in Asia (Chilika Lake). The state has a continental shelf area of 24,000 km2, 0.683 million ha of freshwater resources, 0.418 million ha of brackish water resources, 480 km of coastline, and significant potential for fisheries growth. Fish production has greatly increased, from 0.386 million tonnes in 2010–11 to 0.758 million tonnes in 2018–19, generating around 31,000 million in export revenue in 2017–18 (Soibam Ngasotter *et al*). Odisha produces 6% of all fish produced in India, placing it as the country's fourth-largest fish producer (Handbook of Fisheries Statistics, GoI). 9.91 lakh metric tonnes of fish were produced in 2021–2022. According to the Odisha Economic Survey for 2020–21, the contribution of the fishing industry to state GDP in 2020–21 is around 2.43 percent. Fish is eaten by 94.75 percent of the state's population (NFHS-5).

Consumption of fish per capita grew from 12.24 kg in 2015–16 to 16.34 kg in 2020–21. (National Average 9.00 Kg). Fish production increased four times during the course of 20 years, from 2.60 lakh metric tonnes in 2000–01 to 9.91 lakh metric tonnes in 2021–22. Aquaculture productivity has increased horizontally. There are numerous and different fisheries resources (both marine and inland) that can be leveraged to increase the revenue returns from fishery activities by adopting technical modifications, expertise, infrastructure, etc. In addition, the fisheries industry had considerable development of over 4.5% between 2000-01 and 2019-20 (Department of Fisheries, 2020) and supplied about 14% of India's agricultural exports due to the country's extensive coastline of over 8,000 km (in FY 2020-21).

Fig-7: Total Fisheries production in Odisha



Note: Total Fisheries production in Odisha **Source:** Fisheries and ARD Department, Government of Odisha

Suggestive measures

1. As per various researches, a time-wise increase in agricultural GDP has been identified by the use of certified seeds, net irrigated area, pesticides, and fertilizer remarkably. Hence the policy framework should be focused in this direction.

2. More growth in cereals, as well as vegetables, were there as compared to pulses and oilseeds. A record increase in production of rice and wheat was found in 2020-21. Hence there should be proper and incentives for the farmers tending towards crop diversification.
3. Horticultural waste can be a boon for the reduction of climate change if it could be utilized properly and purposefully.
4. People have chosen paneer the most after milk as the value-added product for their consumption. There has been More than 20% growth in accepting the value-added products. Therefore, the public policies must aim at proper value addition.
5. Although it is a less organized sector in Odisha, the fishery sector and its production increased horizontally. Therefore the fisheries sector needs to be more organised and should holistically work with other sectors of agriculture in ensuring food security.
6. Agri-household earnings are still relatively low, mostly due to small holding sizes therefore the food system needs to shift from being "tonnage centric to farmer-centric."

CONCLUSION

According to M.S. Swaminathan, "If agriculture goes wrong, nothing else in the country will have a chance to go right." The Indian economy has a number of difficulties, including those related to food security, declining soil quality, water scarcity, inadequate food storage facilities, and land degradation, among others. The recent pandemic scenario has had an impact on the agricultural sectors and will likely lead to significant changes in the future. These changes must be acknowledged and planned for in order to fulfill future needs (Shilpa S. Selvan, 2021). Modern technology that offers up-to-date weather information is first and foremost required. Second, the government ought to support organic farming methods and homemade biofertilizers. Third, a thorough study should be conducted

to comprehend the farming needs of marginal farmers, and technology will be

developed based on the feedback system. In order to secure the food items during the time of harvest and release them during the off-cropping season, private investors should be invited to establish a food chain mechanism. India requires land reforms, with the identification of true farmers and land consolidation being given first priority. (Ritika Juneja, 2021). The Union Budget for 2022–23 includes money for direct MSP payments totaling Rs. 2.37 lakh crore to wheat and paddy farmers, as well as financial aid for agroforestry and the promotion of natural farming. The budget targets a number of important concerns, including generating livelihoods, raising agricultural incomes, and strengthening climate resilience. Through digitalization, R&D, and harnessing the strengths of agri-techs and FPOs, the multifaceted interventions in the agri-allied sector will pave the way for Next Generation Agriculture. Cropping intensity must be increased, and HYVs and hybrids must increase crop productivity. Intercropping in orchard crops needs to be encouraged, as does high-density planting and protected agriculture under poly greenhouses or shade nets. Agriculture's diversification toward high value: The necessity of the hour is for nutrient-dense cereals, oilseeds, pulses, F&V, floral design, etc. It is necessary to facilitate improved post-harvest infrastructure, an effective supply chain, and better market access. Farmers must better realize their prices, and there must be a strong connection between inputs, production, and markets. Access to direct markets and strengthening of the value chain will improve farmers' terms of trade. Priority should be given to marketing through cooperatives and FPOs (including FPCs). Fishermen are more accustomed to living in rural areas and would be open to establishing local producer organizations (VPOs). Access to finance without collateral is necessary in order to concentrate on the incomes of

fishermen. The achievement of the stated goal of doubling farmer income will depend on allied agricultural areas like dairy farming, poultry farming, and fisheries. Farmers should receive appropriate and ongoing training in the new technology on a regular basis to maximize their knowledge and skill acquisition. To achieve greater results, cooperative societies and SHGs will be founded.

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Fig. 1

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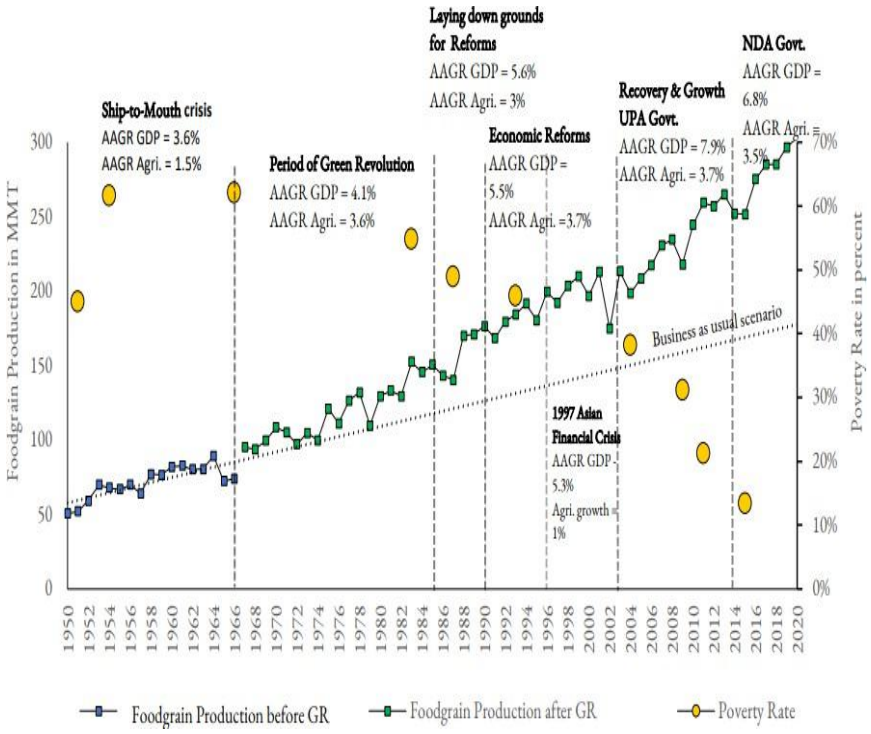
Fig. 2



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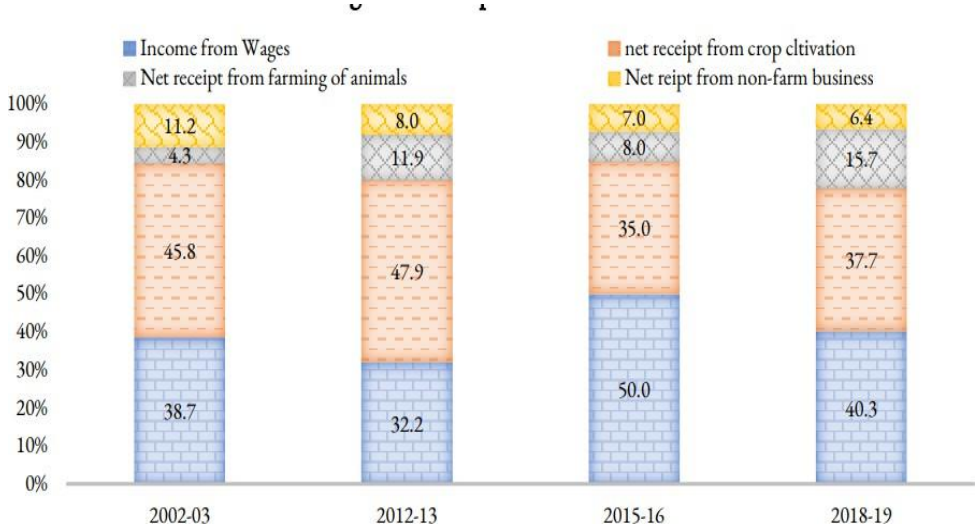

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Source: SAS and NAFIS

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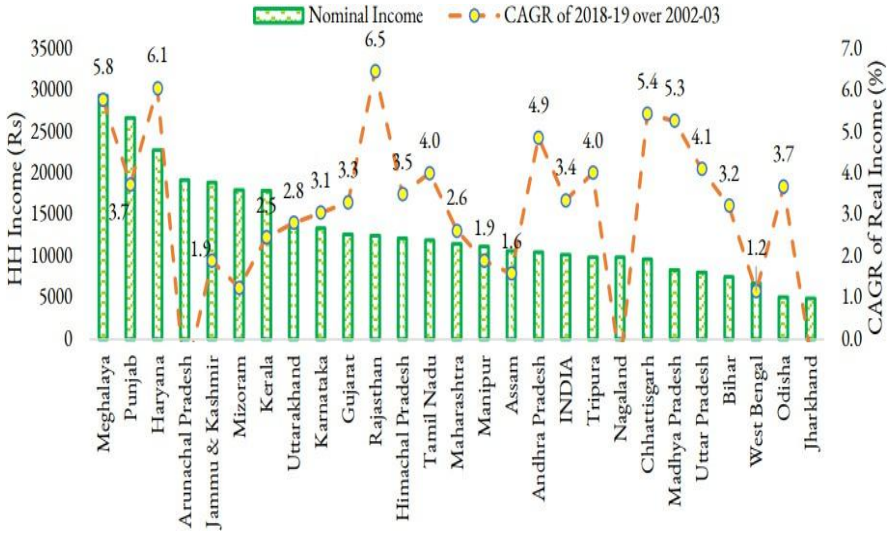

Source: SAS, 2018-19

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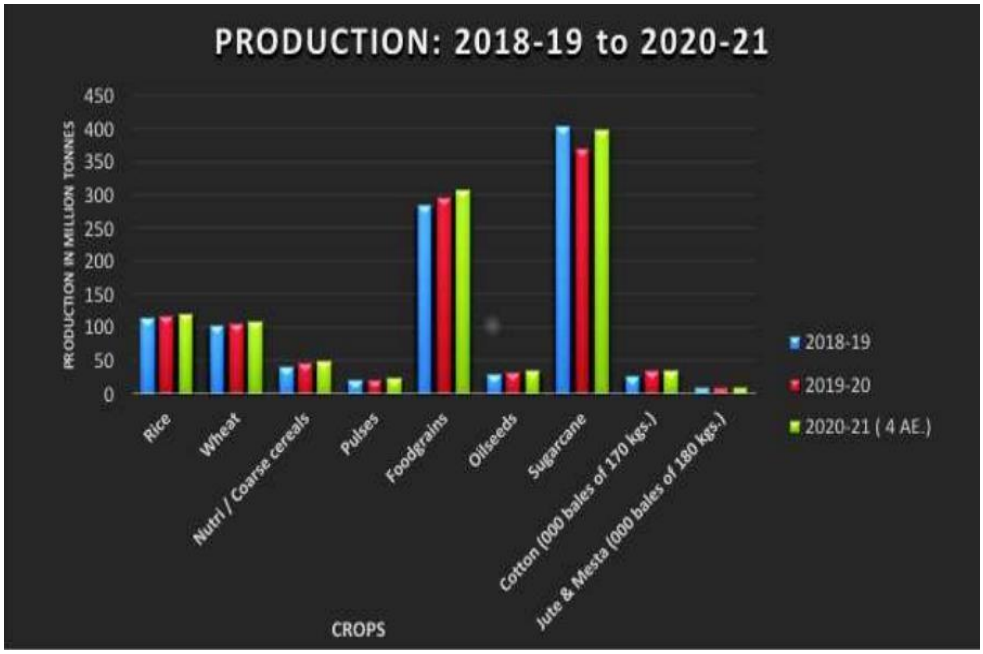
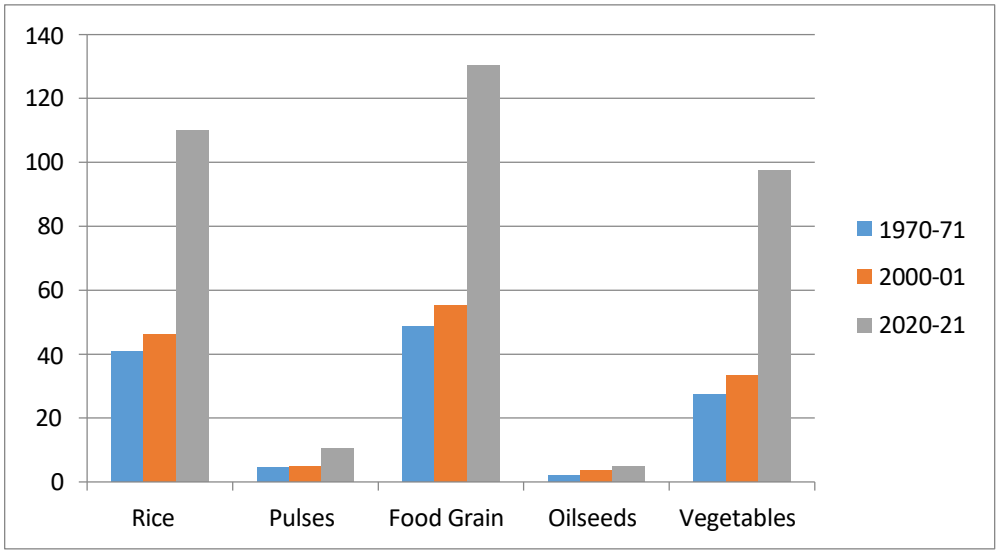


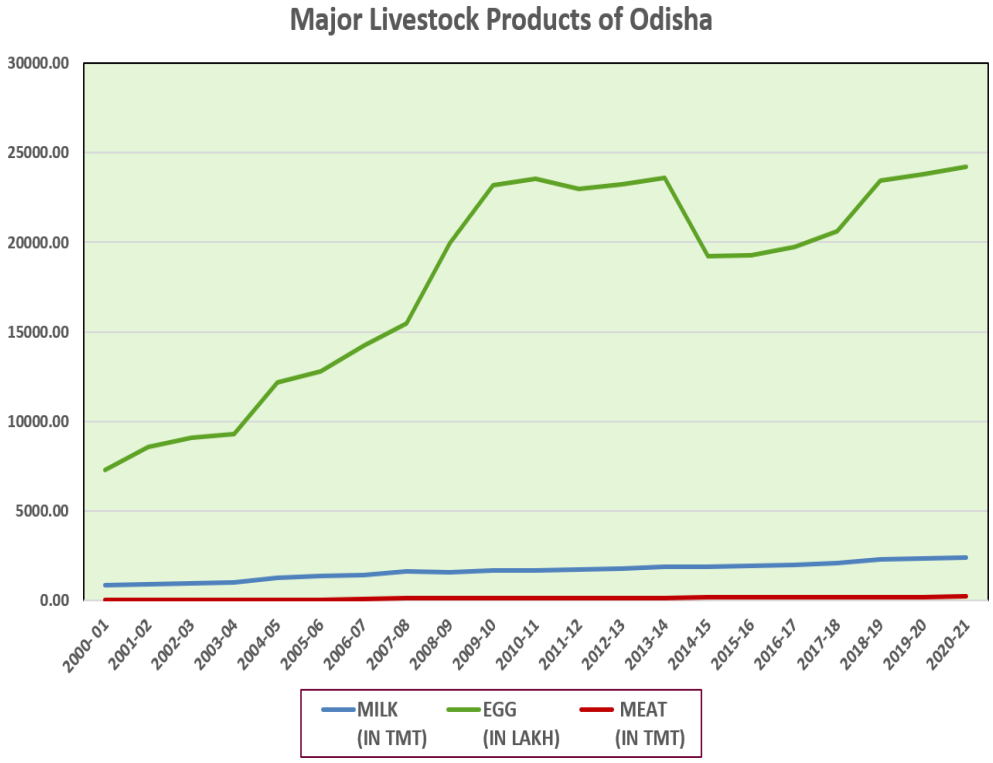
Source: Department of Agriculture and Farmers Welfare, India

Fig. 5



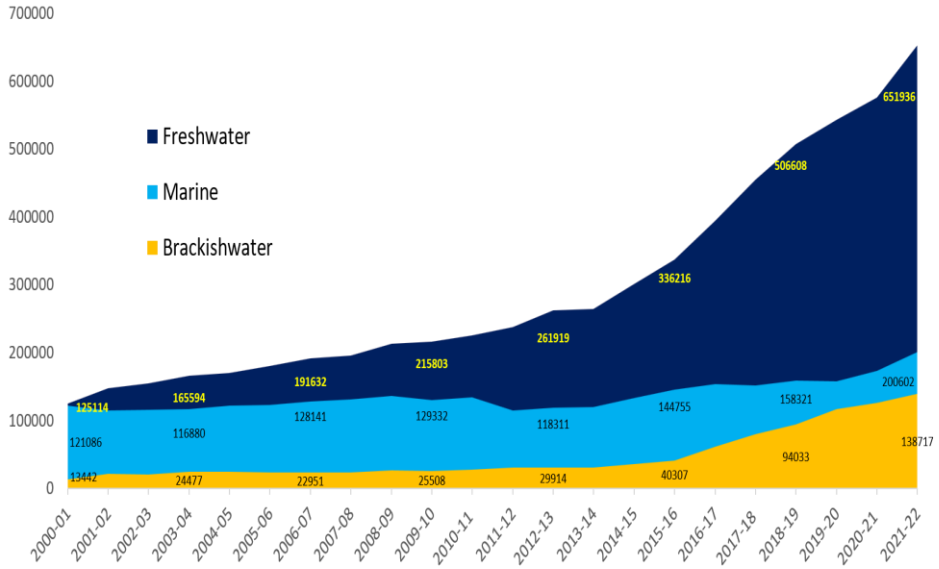
Note: Growth in agricultural production in Odisha (in MT) **Source:** Department of Agriculture& Farmers' Empowerment, Govt. of Odisha

Fig. 6



Source-Directorate of Animal Husbandry and Veterinary Sciences, Odisha

Fig. 7



Note: Total Fisheries production in Odisha
Source: Fisheries and ARD Department, Government of Odisha

ARTICLES / 4

Analysis of Exclusion and Poverty in Nagaland: A Multidimensional Fuzzy Logic Approach

Krishnendu Das* & Dr. Prashant Kumar Ghosh**

Abstract

Poverty remains an important area of research in South Asia. In India, even after almost seventy-five years of independence the dimension wise distribution of poverty is very much shocking. Especially for the case of Northeast Indian States, poverty and inequality vary a lot. This indicates exclusion of this region from rest of the India. The cultural aspect and the isolated features in Northeast India are quite responsible. Measuring poverty in multi-dimension wise is to give the overall or macro view of the situation, but the use of fuzzy logic enhances the capacity of usual multidimensional measurement for micro view. Present study analyses the poverty and inequality among the districts of Nagaland in different aspects of life. The purpose of the study is to give a microscopic view of poverty in Nagaland. Across the dimensions, the unequal distribution of deprivations causes many anomalies in the State. The empirical findings critically analyses the different contributing factors.

Keywords

Poverty, Unidimensional, Multidimensional Poverty Index, Fuzzy Sets, Nagaland, Deprivation, Northeast India, Women, Youth.

JEL Codes

D63, E24, I14, I32, I24.

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Introduction

Poverty has been in existence in South Asian countries for a long time with higher intensity. As India is one of the important countries in South Asia, there is no difference in India regarding poverty and inequality. The impact of poverty can be seen in different parts of India but with different intensities and causes. Northeast India has received comparatively less attention than the rest. The two very general causes are geographical and cultural for the isolation of this region. In the present study, we would like to focus on Nagaland as it is an important state in Northeast India. Recent data and reports have been showing different tendencies.

Nagaland is a landlocked state in Northeast India. On 1st December 1963, it became the 16th State of India. Nagaland is a Himalayan Mountain State. The terrain is hilly and landslides are very regular, hence the transport costs are very high in the region. This results in a high cost of living in the state. As per Census 2011, there are roughly 16 major tribes in the 11 different districts of Nagaland, also these major tribes are subdivided into many clans. Though Indian English is the official language of the State, the major languages spoken are approximately 24. Unlike the other states, Nagaland has granted autonomy in most areas. This isolated feature has abled to protect of tribal tradition and culture in the region.

The government‘s role has not been very supportive in Northeast India, which led to critical social issues and conflicts in the region (Bhattacharya, 2011). Though Nagaland got its statehood in the early sixties, the process of development was unable to take place properly due to many rebellious activities. Year after year many separatist groups were formed and dissolved mainly for the demand for ―Greater Nagaland‖. During this period peace and harmony in the region have been hampered a lot. Most young people keep fighting for the separatist groups without knowing the proper cause (Tariq, 2011).

Nagaland is one of the smallest states in India, where 49.23 percent of the total population is in the workforce, and out of which 56.71 percent are in agriculture & allied services, 12.85 percent were in the household industry and 38.95 percent were in other works (Nagaland, 2011). Agriculture & related activities are the main occupations in the rural areas of Nagaland. Traditional Jhum practice, for cultivation, suffers from inadequate irrigation, rough weather, and soil management. The poor level of infrastructure in the region hinders the mobility of foods. Most of the tribal people in rural areas are mainly dependent on agriculture but the government‘s extension machinery has been facing challenges in intervening due to the customary laws and administrative practices of the tribes. Unlike most of the other small states of India, Northeast states are very weak in the industrial sector. According to the Small States Profile Ranking in India: 2009, Delhi was at the top and Meghalaya was at the bottom (10^{th}). Nagaland‘s position was 7^{th} (from top) (Bhattacharya, 2011).

Education is the backbone of any society. Educated youth can lead society with their vision and mission for further betterment. As per the report of MHRD (2016-17), the primary dropout rates, Arunachal Pradesh (23.25 %) having the highest in India (6.35 %), and Nagaland (20.95 %) holds the very second position followed by Meghalaya (17.69 %). For the case of upper primary dropout rates, Nagaland (18.28 %) holds first place in the region followed by Meghalaya (17.59 %). Nagaland (31.28 %) again holds the highest position in the region for the dropout rates at the secondary level followed by Mizoram (30.67 %). Although the literacy rate in Nagaland is quite impressive, youth have been facing tremendous difficulties to find a proper jobs. Due to weak industrialization and infrastructure, most of the educated population was unwillingly forced to depend on agriculture and allied activities (Kikhi, 2006). There will be a two-fold situation, unemployed intelligent people may become dangerously violent and that will be a significant waste for the country to have idle educated people (Puttaswamiah, 1977). This

two-fold situation is happening in Nagaland. Various public media (mainly in Northeast India) has been reporting different social unrests related to the youth. Many antisocial and violent events took place in the region (Nagaland), where the presence of the youth was prominent (Nongkynrih, 2009).

Lack of industrialization, infrastructure, and the very isolated & excluded feature of the state of Nagaland, paved the way for unemployment and social unrest. Which causes poverty. The 5.77 percent of poor people in India resided in the Northeast region, whereas this entire region accounted for only 3.58 percent of the total Indian population (Ray & De, 2005). As per the NITI-Aayog's Report of the Task Force on Elimination of Poverty- Nagaland, the poverty line defined in 2011-12, there were approximately 2.8 lakh poor persons (14 percent of the State's population), in rural areas, 6.1 percent in urban areas, 32.1 percent of the State's population were below the poverty line. Overall 92.69 percent of deprivation in Standard of Living, 20.26 percent of deprivation in Health, and 34.55 percent in Education in Nagaland (Jamir & Ezung, 2017). Nagaland ranked 5th among the eight Northeast States in India regarding the share of BPL population but surprisingly it got 3rd rank regarding multidimensional poverty (Bagli, 2017). As per 61st round, NSS (2004-05) data Nagaland (9.71 %) ranked 1st in rural areas and also in urban areas for headcount ratio among the Northeast States, but later Nagaland's (19.9 % in rural & 16.5 % in urban) rank came down to 4th place as per 68th round NSS-2011-12 data (Khan & Padhi, 2017). Nagaland also has a long tradition of deprivation and vulnerability like insurgency and ethnic conflict.

Poverty measures and different approaches

The poverty measurements have been focusing mainly on income and non-income approaches. The dollar-a-day international poverty line was introduced by the World Development Report (1990). The income-focused approach identifies poverty by specifying a cut-off _Poverty-Line', defined as the level of income below which people are diagnosed

as poor. The income approach is one-dimensional, so it is easy to calculate and interpret but very difficult to analyze. As per Sen, poverty is not having a lack of money, it's way bigger than this. Poverty is multidimensional deprivation an individual suffers. So, considering only one dimension (income or expenditure) may lead to manifold confusion. To address this issue a new multidimensional measurement of human deprivation was introduced by the Human Development Report (1996) as the Capability Poverty Measure (CPM), which was not income focused. For better understanding, both the approaches (income & non-income) were incorporated to form the Human Development Index (HDI) by UNDP. The measurement of poverty has two distinct but interrelated exercises, viz; (1) identification of the poor, and (2) aggregation of the statistics regarding the identified poor to derive an overall index of poverty (Sen, 1981). To complement the HDI, Human Poverty Index (HPI) was 1st introduced in the Human Deprivation Report (1997). HPI had two parts HPI-1 for developing countries (low-income) and HPI-2 for a group of selected high-income countries for identifying regional disparities. In 2010, it was replaced by the Multidimensional Poverty Index (MPI). As per the traditional approach to poverty measurement, partitioning the population into the simple dichotomy of ‗the poor' versus the ‗non-poor' is an oversimplification. Poverty is not a simple attribute that characterizes an individual in terms of its presence or absence rather the relative hardship or well-being of a person is a matter of degree (Cheli & Lemmi, 1995). The Unidimensional (income) poverty index cannot capture all the essence of poverty or deprivation as poverty has many dimensions like well-being, employment, nutrition, health, education, etc. whereas the MPI will do better in the understanding the root causes of poverty & policy measures to curb the issue (Banerjee, Chaudhuri, Montier, & Roy, 2014). Poverty not only causes difficulties in doing livelihood practices but in many cases, it can disable people from making proper cognitive actions. People behave in a less capable way under poverty which surely helps to sustain poverty (Mani, Mullanathan, & Zhao, 2013).

It has been recognized that the multidimensional approach toward poverty is sufficiently good over the unidimensional approach, but the identification of the poor remained a problem to be solved (Cheli & Lemmi, 1995). Poverty is a collective situation in society but in reality, somehow it is related to individual behavior with a lot of ambiguity to address. We need a more sophisticated method for dealing with the uncertainty problem of poverty (Betti, Cheli, Lemmi, & Verma, 2008). Zadeh introduced the fuzzy set theory to incorporate the degree of uncertainty of the members of a set by distinguishing their crispness and fuzziness (Zadeh, 1965). Fuzzy logic mainly deals with ambiguity and vagueness. Cerioli and Zani (1990) were the first to use Fuzzy logic in the measurement of poverty. Poverty qualifies for the fuzzy logic as its intrinsic character is very much vague and unclear (Betti & Verma, 2007). We simply cannot declare that a person is certainly poor, if we do so then there comes an important question is it possible to make that individual non-poor by giving a few rupees? There is no simple answer to this question due to its vagueness (Qizilbash, 2006). We need detailed information for identifying poor households and their intensity but, it is very much impossible to gather specified information regarding income and consumption of basic needs, so, the fuzzy character is intrinsically present in the information (Chakravarty, 2011). In India the poverty is much complicated and complex issue. It not only the requires integrated approach of developing skills among the poor, providing employment, increasing nutrition level, providing health facilities and infrastructure facility. But also require proper will on the part of the policy makers and the bureaucrats to implement the well prepared polices. (Keshava S.R. 2013)

Need for the Study and objectives

We have already discussed the situation in Northeast India in different aspects and especially in Nagaland regarding insurgency and conflicts, livelihood, women participation,

youth, and poverty as per various articles and reports published by different researchers and organizations. Not much holistic and in-depth study has been done in this region (Nagaland) so far. All the studies discussed earlier, have not considered the use of fuzzy logic for detailed district-wise analysis in Nagaland. The majority of the studies discussed above were done mainly by using different rounds of NSS (National Statistical Survey) data. We have mentioned the cause and significance of the use of fuzzy logic in the measurement of poverty analysis suggested by the researchers.

Our basic objectives are to analyze the existing deprivation in the districts of Nagaland using fuzzy logic and to see the dimension-wise response of the indicators as well as the sub-indicators for the period 2015-16. By this, we want to see the impact of exclusion on Women's participation, educational attainment, social justice, and problems of youth, sustaining the poverty in the region.

Materials and Methods

For the present study, we used mainly the unit-level household data from the National Family Health Survey 2015-16 (NFHS-4) also, we have used other data from sources available for the study like the Census 2011 of India report, NITI-Aaygo‘s Report of the Task Force on Elimination of Poverty- Nagaland, National Family Health Survey 2015-16 (NFHS-4) report on Nagaland, etc.

In the present study for calculation of the Multidimensional Poverty Index, we used mainly the Alkire-Foster methodology (Alkire & Foster, 2011). To incorporate the Fuzzy logic in the calculation of Multidimensional Poverty, we used the methodology used by Das (Das & Pal, 2019) previously developed by Costa, Degum & Costa, and Costa & Angelis (Costa, 2002) (Dagum & Costa, 2004) (Costa & Angelis, 2008). Now the existing methodology of Alkire and Foster (2011) is to be blended with the Fuzzy logic for measuring Fuzzy Multidimensional & Unidimensional Poverty. Here n is the cardinal number of the crisp set

A. A is a representative sample of the population.

The m-order vector of attributes X considers attributes for various dimensions of poverty. Subset B (of A) is a set of poor households. The degree of the membership to the set B of the i^{th} household represented by the poverty ratio of the i^{th} household. B contains any household (a_i) must have some degree of membership according to the attributes vector or in other words if any household does not possess at least any of the attributes of X.

The membership function to the fuzzy set B can be defined as

$$\mu_B(X_j(a_i)) = x_{ij}\ ,\ 0 \le x_{ij} \le 1$$

In particular, $x_{ij} = 1$ if and only if the i^{th} household doesn't possess the j^{th} attribute; $x_{ij} = 0$ if and only if the i^{th} household possesses the j^{th} attribute; $0 < x_{ij} < 1$ if and only if the i^{th} household possesses the j^{th} attribute with some intensity, which belongs to the open interval (0,1).

The poverty ratio or the degree of membership of the i^{th} household to the fuzzy set B can be defined as the weighted average of x_{ij}

$$\mu_B(a_i) = \sum_{j=1}^{m} x_{ij}\, W_j / \sum_{j=1}^{m} W_j$$

Here W_j, attached weight to the j^{th} attribute. $\mu_B(a_i)$ measures the degree of poverty (relative deprivation) of the i^{th} household. The weight W_j captures the intensity of the vulnerability of X_j. Its nature is an inverse type.

Cerioli & Zani (1990) suggested a form for W_j

$$W_j = log\ [n / \sum_{i=1}^{n} x_{ij}\, n_i] \ge 0$$

Here n_i, the weight attached to the i^{th} sample observation.

So, the poverty ratio of the population μ_B be

$$\mu_B = \sum_{i=1}^{n} \mu_B(a_i)\, n_i / \sum_{i=1}^{n} n_i$$

The above formula can be considered as a weighted average of the poverty ratio of the i^{th} household.

The Unidimensional poverty ratio for the jth indicator is the weighted average for x_{ij} with the considered weight n_i be

$$\mu_B(X_j) = \sum_{i=1}^{n} x_{ij}\, n_i / \sum_{i=1}^{n} n_i$$

In the present study, we divided the m-order vector attributes X into three main dimensions as suggested by Alkire and Foster (2011) for a multidimensional approach, which are Health, Education, and Standard of Living. More specific breakdowns and indicator-wise classification of crisp and fuzzy can be seen in Table 01.

Using the Fuzzy logic, we changed the character of the indicators from crisp to fuzzy. In Table-01 we showed the distinction between crisp indicators with or without deprived conditions (either 1 or 0) and newly constructed Fuzzy indicators with their membership values belongs to an open interval (0,1). That means the Fuzzy indicators can assume any values between 0 to 1 under different intensities of deprivation.

According to the Alkire-Foster methodology, we need to calculate the Multidimensional Headcount ratio (H)

$$H = q/n$$

Here q is the number of households that are multidimensionally poor and n is the total number of households in the population (Alkire & Foster, 2011).

Average intensity (A)

$$A = \sum_{i=1}^{n} C_i(k)/q$$

Here $C_i(k)$ is the censored deprivation score of the i^{th} household. $C_i(k)$ is defined as

$$C_i = W_1 I_1 + W_2 I_2 + W_3 I_3 + \ldots + W_j I_j + \ldots + W_m I_m$$

Here $I_j = 1$ if the i^{th} household is deprived in the indicator j and $I_j = 0$ if the household is surely not deprived in the indicator j. We may consider any household as poor if $C_i \geq k$, where k is the poverty cutoff and the value of k suggested by Alkire-Foster was to be considered any household lacking in at least one of the dimensions mentioned. That means
we may consider a household poor if that particular household is deprived in at least one of the given dimensions (Health, Education, and Standard of living) (Alkire & Foster, 2011). Multiplying both headcount ratio and average intensity, we get the Multidimensional Poverty Index (MPI=H×A), but as we are combining Alkire and Foster's (2011) methodology with Fuzzy logic, we simply denote the Fuzzy Multidimensional Poverty index by MPI*.

Results & Discussion

We have used the Fuzzy Multidimensional Poverty Index (MPI*) and the Fuzzy Unidimensional Poverty Ratio for our calculation. We have discussed the different membership values for different indicators as well as for different sub-indicators (Table-01). We have calculated the Headcount ratio, Average intensity, and Fuzzy Multidimensional Poverty Index (MPI*-overall) for different districts of Nagaland (Table-02). We also calculated different Headcount ratio, Average intensity, and MPI* for male and female household headship (Table-02a & Table-2b). We used the Fuzzy Unidimensional Poverty

Ratio for the different indicators and sub-indicators for critical

analysis (Table-03, Table-04 & Table-05).

The top three districts having the highest Headcount ratio are Mon, Tuensang & Longleng. Whereas the top three districts having the lowest Headcount Ratio are Mokokchung, Kohima & Zunheboto (Table-02). According to the Headcount Ratio of the Nagaland, roughly 44 percent of households out of the entire population are deprived at least in one dimension out of the three mentioned in Table-01 (Standard of Living, Education, and Health). The district Mon has roughly 71 percent of households whereas the district Mokokchung has roughly 23 percent of households under Multidimensional poverty. This shows severe inequality among the districts regarding the Multidimensional Headcount Ratio. The top three districts having the highest Average Intensity are Mon, Longleng, and Kiphire. Whereas the districts having the lowest Average Intensity are Mokokchung, Wokha, and Kohima. In the district Mon, an average deprived household experiences 45 percent of deprivation. Whereas in the district Mokokchung an average deprived household experiences 37 percent of deprivation. Which shows lesser inequality among the districts regarding Average Intensity. The impact of the Headcount ratio and Average intensity together can be seen in the Fuzzy Multidimensional Poverty Index or MPI*. The top three districts having the highest MPI* are Mon, Tuensang, and Longleng and the top three districts having the lowest MPI* are Mokokchung, Kohima, and Wokha. The visible inequality in MPI* among the districts is mainly due to the headcount ratio rather than the average intensity. That means the distribution of deprived households is pretty much uneven but they are experiencing deprivation quite similar in manner. That surely indicates an unbalanced development process has been going on in the state.

The headcount ratio for Nagaland is surprisingly low in female household headship. Approximately there are 46 percent of households live under multidimensional poverty under male headship, whereas only 29 percent of households under female headship. More or less all districts have a low headcount ratio for the case female headship, except the districts Mon and Longleng (Table-02a & Table-02b).

To see the deprivation more clearly indicator-wise breakdown is necessary. The district Mon (77.61%, 91.09% & 14.47%) ranks top regarding assets, housing, and electricity respectively whereas regarding drinking water, sanitation, and cooking Peren (72.71%), Tuensang (41.46%), and Longleng (95.93%) respectively rank top as per the proportion of deprived households (Table-03). The district Mokokchung (19.18% & 11.63%) ranks last regarding assets and sanitation respectively, whereas Kohima (44.35% & 0.55%) ranks last in housing and electricity respectively as per deprived proportion (Table-05). For drinking water and cooking Tuensung (38.18%) and Dimapur (43.38%) respectively rank last as per the proportion of the deprived households (Table-03). This result shows there exists severe inequality in assets, housing, drinking water, and cooking among the districts. Whereas for sanitation and electricity the distribution of the deprivation the inequality is low, though there exists a higher degree of deprivation. Among all the districts Mon (45.21%) had the highest and Mokokchung (16.33%) had the lowest proportion of deprivation for the case of school attendance. Whereas the deprivation in years of schooling among all the districts is very high but the inequality was low (Table-04). Child mortality is low in all the districts with almost negligible inequality. Though the district Phek ranks top and Dimapur ranks as per child mortality. For the indicator of nutrition, males are less deprived than children and females. The district Mon (21.26% & 13.80%) score highest in the deprivation of child and female nutrition respectively and for male‘s health Peren is top of the list (Table-05).

Figure-02, 03 &04 are the graphical representations of the MPI* (overall), Multidimensional Headcount ratio & the Multidimensional Average Intensity for all the districts of Nagaland during 2015-16. It can be seen from the above figures the distribution of multidimensional poverty is quite a at par with the headcount ratio instead of average intensity. Multidimensional poverty was high in the districts which share an international border. This may be due to the result of insurgency in the state. Comparatively the western districts are less poor than their counterparts on the eastern side. At the same time, the northern districts are also experiencing high multidimensional poverty than the districts in the south (Das & Pal, 2019).

The findings from this study show that severe inequality is present in the headcount ratio (MPI* overall). More severe inequality in the headcount ratio for MPI* (male household head) than MPI* (female household head). Less inequality in average intensity for all the cases. As Fuzzy Multidimensional Poverty Index is the manifestation of headcount ratio and average intensity together, the headcount ratio dominates the MPI* (for all cases). For the Standard of living dimension Assets ranks first, then Drinking water, Cooking, Housing, Sanitation, and Electricity comes last regarding the degree of inequality in the proportion of deprived households in the districts. For the Education dimension, School attendance has more degree of inequality than Years of schooling. Similarly, in the Health dimension Child's nutrition ranks 1st then Female nutrition, Child mortality, and Male nutrition comes last. The distribution of deprivation varies a lot among the districts in almost every indicator.

As per the report on Multidimensional Poverty Index in India published by NITI AAYOG,

2021, the headcount ratio of Nagaland was 25.23% whereas Bihar was at the top with 54.91% and Kerala was at the bottom with 0.71%. This fact signifies that Nagaland was having moderately high poverty among the other States of India, which also reflects the exclusion. That report further confirms the findings of the study with the fact that Mon (MPI-0.224) was the most deprived district and Mokokchung (MPI-0.033) was the least deprived among other all the districts of Nagaland (NITI_Aayog, 2021).

According to the NFHS-4 Report on Nagaland (2017), the percentage of household headship was very much unequal in the state even after a long period of independence. Overall 84.20 percent of households come under male headship whereas only 15.80 percent of households are under female headship. Generally, it can be said that lesser household data may statistically show lesser variability. This somehow defines the comparatively low poverty under female household headship than males in the result of the present study. This result also signifies women were unable to get social rights that were quite exclusive from the rest of India.

One of the shocking results of the present study tells about educational status in the state. Roughly 84 percent of households have at least one person (age 14 or above) not completed minimum years of schooling, though the school attendance is pretty much low than years of schooling. This result statistically shows the situation of youth is a matter of concern. Many young students face problems from their families as parents often ask them to quit their studies and start traditional farming or crafting work in the village. Because if they complete their studies, they may not be that much interested in doing traditional work (Nongkynrih, 2009). The increasing rate of unemployment due to weak industrialization influences the dropout rate in Nagaland. Most of the students are convinced to join the separatist group. Which may cause the dropout rates to be high (Kikhi, 2006) (Tariq, 2011) (Amer, 2017)

The present study shows the deprivation and vulnerability of women in Nagaland. The

impact of this social and economic exclusion has been tremendously painful. There were roughly 1800-3500 sex workers in Dimapur, the commercial capital of Nagaland.

The spread of HIV among the sex workers has been increasing and this resulted in the state, holding the top 2nd place regarding HIV prevalence state in India. The cause of joining the profession is mainly due to chronic poverty, death of parents, family rejection, etc., (Devine, Bowen, Dzuvichu, Rungsung, & Kermode, 2010). The socio-cultural and economical status of women was very much vulnerable, evidenced by too early sexual debut, low or no educational attainment, unemployment, abuse of conservative male parents, and drug use. They have been trying to overcome the socio-economic disadvantages by engaging themselves in sex work, which is pretty much a destructive situation in any society (Bowen, et al., 2011).

The present study shows the problem of severe inequality and poverty in different districts of Nagaland, which are the reflection of unemployed educated youth. The industrial sector in the region has been struggling, causing widespread unemployment. There are many challenges associated with Micro and Small enterprises. Keeping the fact that after more than seventy years of Independence this sector suffers from a lack of modern technology, skilled labour, inadequate bank credit, and insufficient marketing networks (Jamir I. , 2014). As many researchers have pointed out that poverty is the manifestation of diversified actions from the social and economic perspectives. The problem of multidimensional poverty, women‘s deprivation, regional insurgency, and unemployed educated youth are very much cyclically affecting each other. Especially in Nagaland, the customary laws for social norms and attitudes are influencing the entrepreneurial mindset of educated youth (Solo & Nagi, 2017).

After repeated efforts by the government of India in Nagaland as well as other parts of

Northeast India, things are changing slowly but miles to go. The major things to be taken care of are women's participation in society, better employment opportunity for the educated youth, and infrastructure development in the region. Further research is needed for a better understanding and analysing the deprivation & exclusion situation in Nagaland.

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Appendices

Table-01

Indicators wise Membership values

STANDARD OF LIVING			
Crisp Indicators	*Fuzzy Indicators*		*Fuzzy Deprivation Membership Values (Poverty Ratio)*
Assets	Rural/Urban	Radio	0.00462962962963
		Cycle	0.00462962962963
		Sewing Machine	0.00462962962963
		Watch	0.00462962962963
		Fan	0.00462962962963
		Chair	0.00462962962963
		Own this house	0.00462962962963
		Cot/Bed	0.00462962962963
	Urban	TV	0.00154320987654
		Refrigerator	0.00154320987654
		Bike	0.00154320987654
		Car	0.00154320987654
		Water pump	0.00154320987654
		Telephone/Mobile	0.00154320987654
	Rural	Agricultural land	0.00154320987654
		Animal drawn cart	0.00154320987654
		Irrigated land	0.00154320987654
		Live stock	0.00154320987654
		Thresher	0.00154320987654
		Tractor	0.00154320987654
Housing	Floor material		0.01851851851852
	Wall material		0.01851851851852
	Roof material		0.01851851851852
Drinking Water	Source of water		0.02469135802141
			0.01234567901231
	Time		0.01851851851852
Electricity			0.05555555555556
Sanitation	Toilet facility		0.01851851851852
			0.00925925925925
	Shared toilet		0.02777777777777
Cooking (fuel & place)	Type of fuel		0.03703703703703
	No Separate kitchen		0.01851851851851
EDUCATION			
School Attendance	Member attended school 2015-16		0.1111111111111
	Educational level 2015-16		0.0555555555556

Years of Schooling	Highest educational level		0.0555555555556
	Highest years of schooling		0.1111111111111
HEALTH			
Child Mortality	Age at death (≤5)		0.1666666666666
Nutrition	Child	Severe	0.0370370370377
		Moderate	0.0185185185182
	Women	Severe	0.0370370370371
		Moderate	0.0185185185182
	Men	Severe	0.0370370370374
		Moderate	0.0185185185182

Source: Author's calculation from Alkire-Foster (2011) & Costa (2002).

Table-02

District wise distribution of overall Fuzzy Multidimensional Poverty Index (MPI*)

DISTRICTS	HEADCOUNT RATIO (H)	AVERAGE INTENSITY (A)	MPI* (Overall)
Dimapur	0.378742046521	0.396077659123	0.150011263198
Kiphire	0.502751854511	0.424820590076	0.213579339495
Kohima	0.289984029204	0.394239874078	0.114323267158
Longleng	0.542428861789	0.429800441023	0.233136164021
Mokokchung	0.232323232323	0.374082906011	0.086908149881
Mon	0.708511001194	0.448013527160	0.317422512677
Peren	0.530070611152	0.415102980473	0.220033890550
Phek	0.449853504620	0.418489823460	0.188259113731
Tuensang	0.614160700080	0.422130802257	0.259256149039
Wokha	0.352523098792	0.392740735313	0.138450181034
Zunheboto	0.344854268765	0.411570561800	0.141931865135
Nagaland	0.444011162653	0.416605776879	0.184977615360

Source: Author's calculation from NFHS-4 (2015-16) unit level household data.

Table-02a

District-wise distribution of Fuzzy Multidimensional Poverty Index of households with Male headship

DISTRICTS	HEADCOUNT RATIO (H)	AVERAGE INTENSITY(A)	MPI* (Male Household Head)
Dimapur	0.396681749623	0.396899106452	0.157442631971
Kiphire	0.512072434608	0.426446667118	0.218371583061
Kohima	0.311183584726	0.394097082538	0.122636542874
Longleng	0.540533333333	0.430097628126	0.232482104590

Mokokchung	0.232821341956	0.373781354007	0.087024276438
Mon	0.704968383017	0.449434028214	0.316836780143
Peren	0.559160839161	0.415345393052	0.232244878521
Phek	0.461538461538	0.420538692054	0.194094780948
Tuensang	0.629965947787	0.423660187860	0.266891491784
Wokha	0.377403846154	0.391558790813	0.147775771004
Zunheboto	0.364655172414	0.411194951270	0.149944365851
Nagaland	0.462611479534	0.417817986671	0.193287396990

Source: Author's calculation from NFHS-4 (2015-16) unit level household data.

Table-02b

District-wise Distribution of Fuzzy Membership Poverty Index of households with Female headship

DISTRICTS	HEADCOUNT RATIO (H)	AVERAGE INTENSITY (A)	MPI* (Female Household Head)
Dimapur	0.291232372777	0.390619790134	0.1137611288334
Kiphire	0.320197044335	0.373886853804	0.119717465504
Kohima	0.179104477612	0.395537463865	0.070842530841
Longleng	0.580645161290	0.424222679382	0.246322846093
Mokokchung	0.228187919463	0.376637228872	0.085944065649
Mon	0.768292682927	0.426018308462	0.327306749184
Peren	0.334586466165	0.412380605498	0.137976969509
Phek	0.348583877996	0.394979056344	0.137683331187
Tuensang	0.388663967611	0.386763760195	0.150321137566
Wokha	0.157232704403	0.415009700078	0.065253097496
Zunheboto	0.171284634761	0.418580117132	0.071696342481
Nagaland	0.295038295038	0.401382693067	0.118423265420

Source: Author's calculation from NFHS-4 (2015-16) unit level household data.

Table-03

District-wise distribution of Fuzzy Unidimensional Poverty Ratio for specific indicators under Standard of Living

DISTRICTS	STANDARD OF LIVING					
	ASSETS	HOUSING	DRINKING WATER	SANITATION	ELECTRICITY	COOKING
Dimapur	0.223388888889	0.525555555556	0.537222222222	0.378333333333	0.018333333333	0.433888888889
Kiphire	0.639125151883	0.718104495747	0.601458080194	0.289185905225	0.018226002430	0.900364520049
Kohima	0.276572064552	0.443516972732	0.603784084585	0.373400111297	0.005564830273	0.538119087368
Longleng	0.701694915254	0.793220338983	0.923163841808	0.389830508475	0.022598870056	0.959322033898
Mokokchung	0.191831683168	0.549504950495	0.440594059406	0.116336633663	0.006188118812	0.626237623762
Mon	0.776169265033	0.910913140312	0.557906458797	0.239420935412	0.144766146993	0.952115812918
Peren	0.576484018265	0.764840182648	0.727168949772	0.385844748858	0.031963470320	0.856164383562
Phek	0.616812227074	0.888646288210	0.525109170306	0.246724890830	0.014192139738	0.89956331877
Tuensang	0.601049868766	0.692913385827	0.381889763780	0.414698162730	0.028871391076	0.914698162730
Wokha	0.405000000000	0.455000000000	0.721250000000	0.305000000000	0.027500000000	0.722500000000
Zunheboto	0.535377358491	0.774764150943	0.716981132075	0.271226415094	0.005896226415	0.867924528302
Nagaland	0.464193347008	0.653794702577	0.607776687773	0.320877552840	0.027022206368	0.738785338446

Source: Author's calculation from NFHS-4 (2015-16) unit level household data.

Table-04
District-wise distribution of Fuzzy Unidimensional Poverty Ratio for specific indicators under Education

DISTRICTS	EDUCATION	
	SCHOOL ATTENDANCE	YEARS OF SCHOOLING
Dimapur	0.335000000000	0.850000000000
Kiphire	0.370595382746	0.833535844471
Kohima	0.229271007234	0.845854201447
Longleng	0.319774011299	0.862146892655
Mokokchung	0.163366336634	0.824257425743
Mon	0.452115812918	0.831848552339
Peren	0.371004566210	0.831050228311
Phek	0.306768558952	0.823144104803
Tuensang	0.410761154856	0.841207349081
Wokha	0.232500000000	0.826250000000
Zunheboto	0.247641509434	0.859669811321
Nagaland	0.308213680549	0.840542227771

Source: Author's calculation from NFHS-4 (2015-16) unit level household data

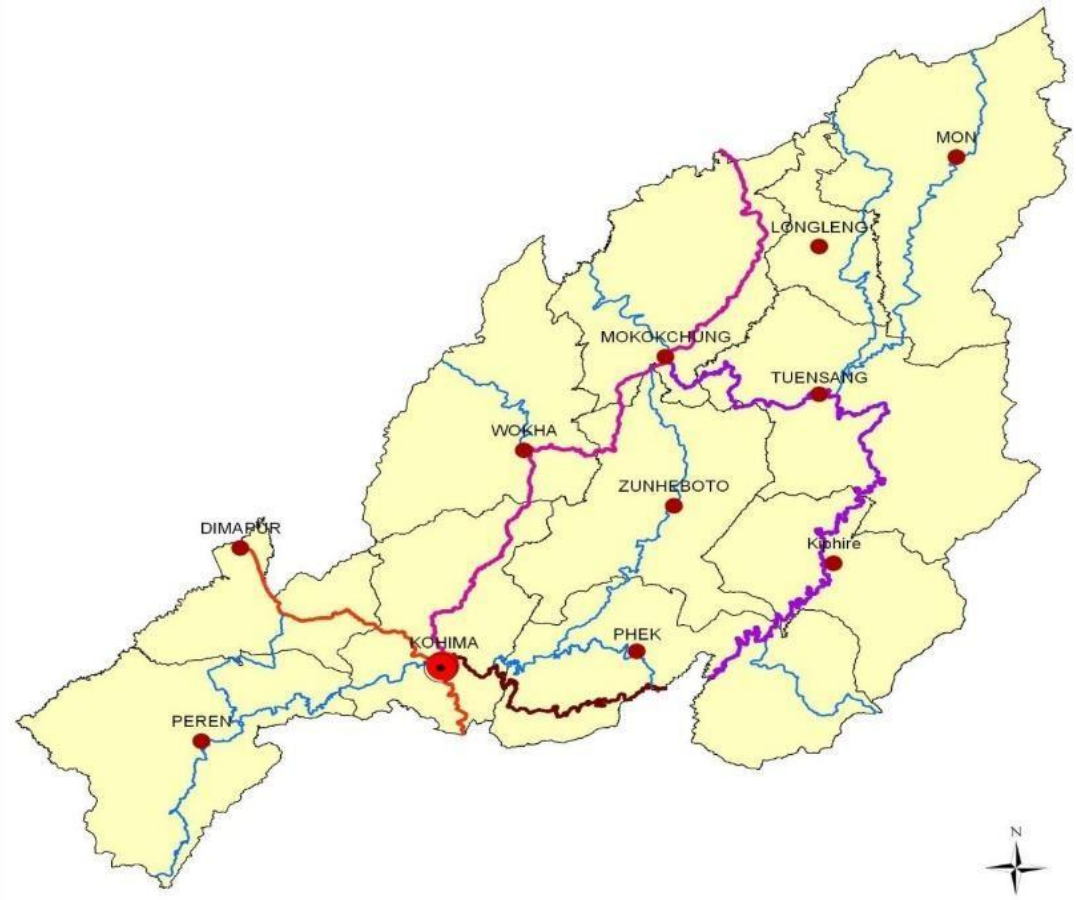
Table-05
District-wise distribution of Fuzzy Unidimensional Poverty Ratio for specific indicators under Health

	CHILD MORTALITY	NUTRITION		
		CHILD	**FEMALE**	MALE
Dimapur	0.000666666667	0.092222222222	0.131111111111	**0.018888888888**
Kiphire	0.023086269745	0.174969623329	0.106925880923	**0.017010935601**
Kohima	0.004451864218	0.089037284363	0.092932665554	**0.012242626600**
Longleng	0.010169491525	0.127683615819	0.111864404780	**0.014689265537**
Mokokchung	0.001237623762	0.038366336634	0.103960396040	**0.011138613861**
Mon	0.015590200445	0.212694877506	0.138084632517	**0.012249443207**
Peren	0.012557077626	0.141552511416	0.060502283105	**0.013698630137**
Phek	0.019650655022	0.115720524017	0.073144104803	**0.008733624454**
Tuensang	0.018372703412	0.196850393701	0.093175853018	**0.010498687664**
Wokha	0.011250000000	0.077500000000	0.088750000000	**0.005000000000**
Zunheboto	0.002358490566	0.101415094340	0.086084905660	**0.009433962264**
Nagaland	**0.010434317310**	**0.118879871578**	**0.101043431731**	**0.012753054490**

Source: Author's calculation from NFHS-4 (2015-16) unit level household data

Figure-01

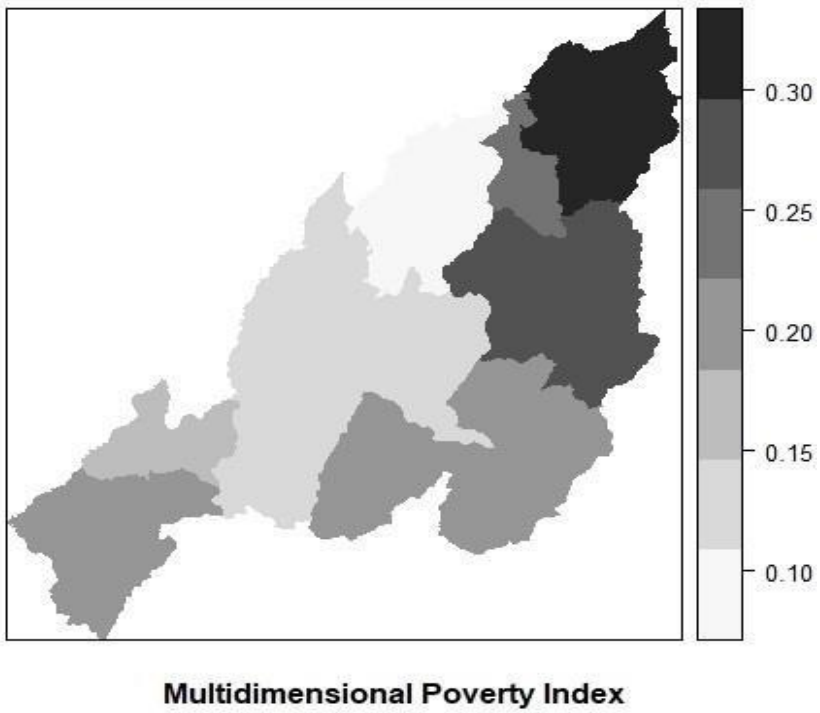
District-wise Administrative Map of Nagaland



Source: Department of Land Resources Govt. of Nagaland.

Figure-02

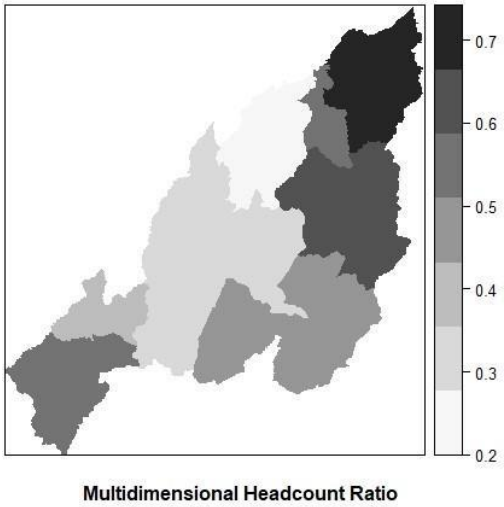
Spatial Distribution of MPI* for the Districts of Nagaland in 2015-16



Source: Authors calculation

Figure-03

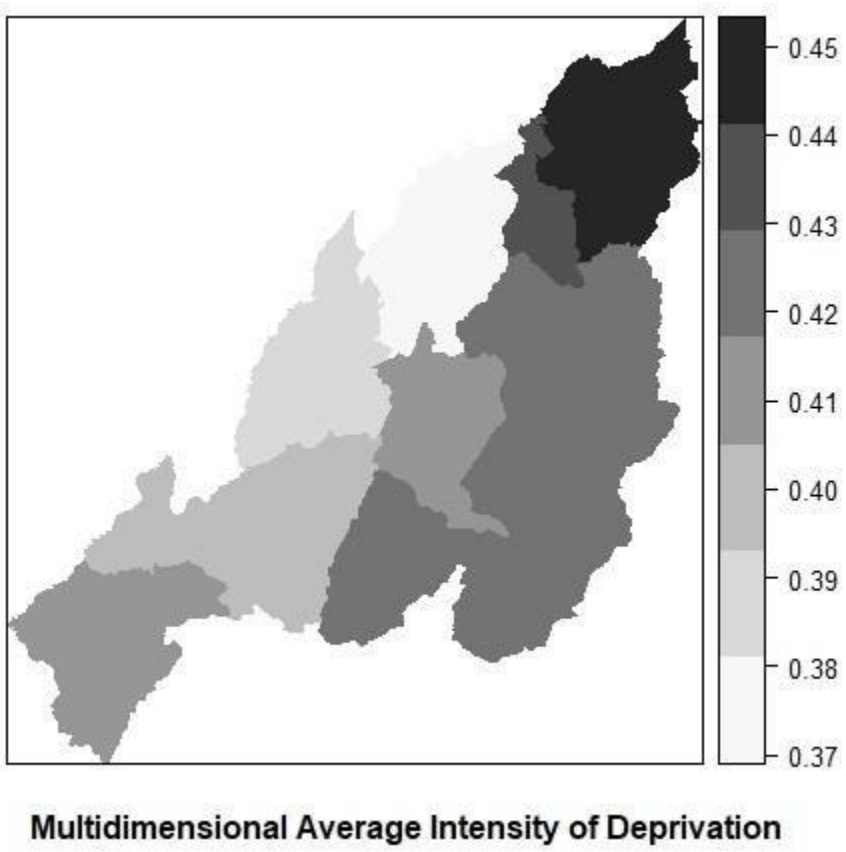
Spatial Distribution of MHCR for the Districts of Nagaland 2015-16



Source: Authors calculation

Figure-04

Spatial Distribution of MAI of the Districts of Nagaland in 2015-16



Source: Authors calculation

ARTICLES / 5

Critical Analysis of Prevention of Money Laundering Act, 2002

Dr. Chandrakanthi L * & Mallikarjuna M **

Abstract

This paper focuses Anti-money laundering Laws in India and its impact fundamental rights. Further, this paper dwells on alternative financial services such as Hawala and virtual currencies and its role in moulding the Anti-money laundering Laws.

Furthermore, this paper tests the Doctrine of Proportionality of the Anti-money laundering Laws. The impact of the Anti-money laundering Laws on the fundamental right to privacy of individuals using financial services.

This paper attempts to comprehend the conflict between the fundamental rights and the effective investigation into serious crimes which are either consequence of Money Laundering or ultimately lead to Money Laundering. On one hand law enforcement authorities have to investigate crimes such as money laundering to prevent the crimes from happening. And on the other hand protection of the fundamental right to privacy to ensure that the authorities do not encroach on the fundamental rights and freedoms of individuals while fighting such crimes. Hence, we see a clash between the interests of law enforcement authorities in gathering information helping them in their fight against crime, and the interest of individuals in protecting their privacy.

The ultimate question which needs to be answered is whether a balance is struck between the right to privacy and the interest in effective law enforcement in the Anti-money laundering laws and have the courts respected the proportionality in their judgements.

Key Words – AML, Money Laundering, Fundamental Rights,

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1. Introduction

―Of evils current upon earth the worst is money. Money 'tis that sacks Cities and drives men forth from hearth and home; Warps and seduces native innocence, And breeds a habit of dishonesty.‖[1]

Countries around the world face the greatest challenge of protecting their economy from the menace caused by this evil, much of which is attributed to money laundering as it seriously affects the economic growth and has the potential to upset the programmes of the economic planners. The crime of money laundering has undergone a rapid, unprecedented development as a criminal offence in the world as well as in India. It is a rather new offence compared to most other offences found in the criminal codes. Money laundering is a crime that is difficult to define in general terms, due to the variety of strategies that can be used to launder money.

In simple terms, money laundering is the act of concealing the origin of funds derived from criminal activity in such a way, that those funds can be used without raising suspicions regarding their provenance. Money laundering is in principle a logical step after any crime generating a material benefit to the perpetrator, which is why the volume of funds laundered is estimated to be extremely high.

Remittances can flow through formal and informal channels. Formal channels for transferring remittances include banks as well as transfer services such as Western Union and MoneyGram.[2] Informal channels include alternative remittance systems, which are not licensed and often operate underground. The word _alternative‘ could thus be understood as an alternative to the formal banking system in the country/world from which the remittances are done. One of the most prevalent networks for such informal/alternative cash transfer is Hawala, but a large number of similar systems can be identified, each operating under a different name, including the Filipino network of _Padala‘,[3] the _Hundi‘ system most prevalent in India,[4] a system known as _Hui Kuan‘ in Hong Kong,[5] _Phei Kwan‘ used in Thailand,[6] and finally the infamous _Black Market Peso Exchange‘ active between North and South America.[7]

Hawala is a very old system for transferring money, and one of the most important channels of underground banking as well as a major alternative remittance system.[8] The system is prevalent in and around Middle East, and one of the most important transfer systems for countries such as India, Afghanistan, and Pakistan.[9] Literally translated from Arabic, Hawala means _transfer‘.[10] Persons acting as agents or nodes

[1] This quote is from Oedipus Trilogy by Sophocles

[2] Freund/Spatafora (2005), p. 2. See also Reimer/Wilhelm (2008), p. 235.

[3] Razavi (2005), p. 280; Passas (2006), p. 48.

[4] Razavi (2005), p. 280; Passas (2006), p. 48. See also Sharma (2006), p. 105 and Marin (2009), p. 910 f. for an account of the differences between Hundi and Hawala.

[5] Razavi (2005), p. 281.

[6] Razavi (2005), p. 281.

[7] Razavi (2005), p. 281.

[8] FATF Hawala (2013), p. 9.

[9] Sorel (2003), p. 376; Ryder (2007), p. 826; Schramm/Taube (2003), p. 407.

[10] See also Passas (2006), p. 49; Marin (2009), p. 911.

in the system are called hawaladars.

The historical development of Hawala as well as that of most, if not all other informal transfer systems, are shrouded in mystery. It is impossible to give a precise timeframe or a narrow geographical area with which to credit the development of Hawala. The details of how the financial system has evolved are still disputed. Some accounts trace financial transfer systems like Hawala back to 5800 BC.[11] The history of these systems is often linked to the history of the Silk Road and the interests of travelling merchants along this route. It is supposed that the risk of robberies made it too dangerous for these merchants to carry the proceeds of their trade along with them on their travels, for which reason they preferred to use the services of a financial transfer agent in order to transfer their funds.[12] However, whether these are truly the roots of the system, or if the travelling merchants along the Silk Road were just one of many distinct groups of customers of a system much more ancient than that, cannot be said with certainty. Hawala in particular shares its development in the Middle Ages with other similar systems prevalent in Asia. Hawala offered a means to send funds to a recipient some distance away, thereby facilitating commerce.[13] As Razavi explains, ―expansion in commerce and trade during the early Islamic period created the need for a more sophisticated monetary infrastructure. Historical and cultural setting, a group of institutions slowly established themselves and operated under influence of Islamic banking practices, as outlined within the Koran (the holy book of Muslims), and the Sharia (the body of Islamic law). Over time, this method of remittance became known as Hawala.‖[14] Therefore, it can be said that Hawala is extremely old, in any case older than Islam itself, but the importance it has in the world today is likely due to its coincidence in geographic location with the religious centres of Islam, and the fact that either the practice was already compliant with the religious rules, or else could easily be moulded into the shape prescribed by Islamic law.

Another alternative for conventional remittance system are Virtual Currencies. Virtual currencies hold great potential in the market of financial services, which is being recognized by a growing number of users and businesses.[15] However, the architecture of the system is entirely decentral, without any official representation, kept up by a number of people simply running a computer programme. Also, as the system operates online, these people are strewn all over the globe. Currently legislations across the world are ill-equipped to cover this network.[16]34 In addition, any individual out of the group of people running the code and administering the system can hardly be considered to be offering financial services, which will remove the system itself from the personal scope of anti-money laundering legislation

[11] Razavi (2005), p. 280.
[12] Razavi (2005), p. 280; Schramm/Taube (2003), p. 406 f.
[13] Razavi (2005), p. 281.
[14] Razavi (2005), p. 280 f.
[15] Raman (2013), p. 70.
[16] Lowery (2013), p. 77.

2. Process of Money Laundering – Brief Overview

It is usually assumed that money laundering is only an international phenomenon involving various jurisdictions. But money can be laundered exclusively in the national sphere without having any international element. When money is laundered through international circuit it comprises of a series of processes which integrate illegally earned money within the legal monetary system. This process usually takes place through three fundamental steps (which are not water tight compartments and may overlap at times), i.e. placement, layering and integration. These steps are explained below in brief:

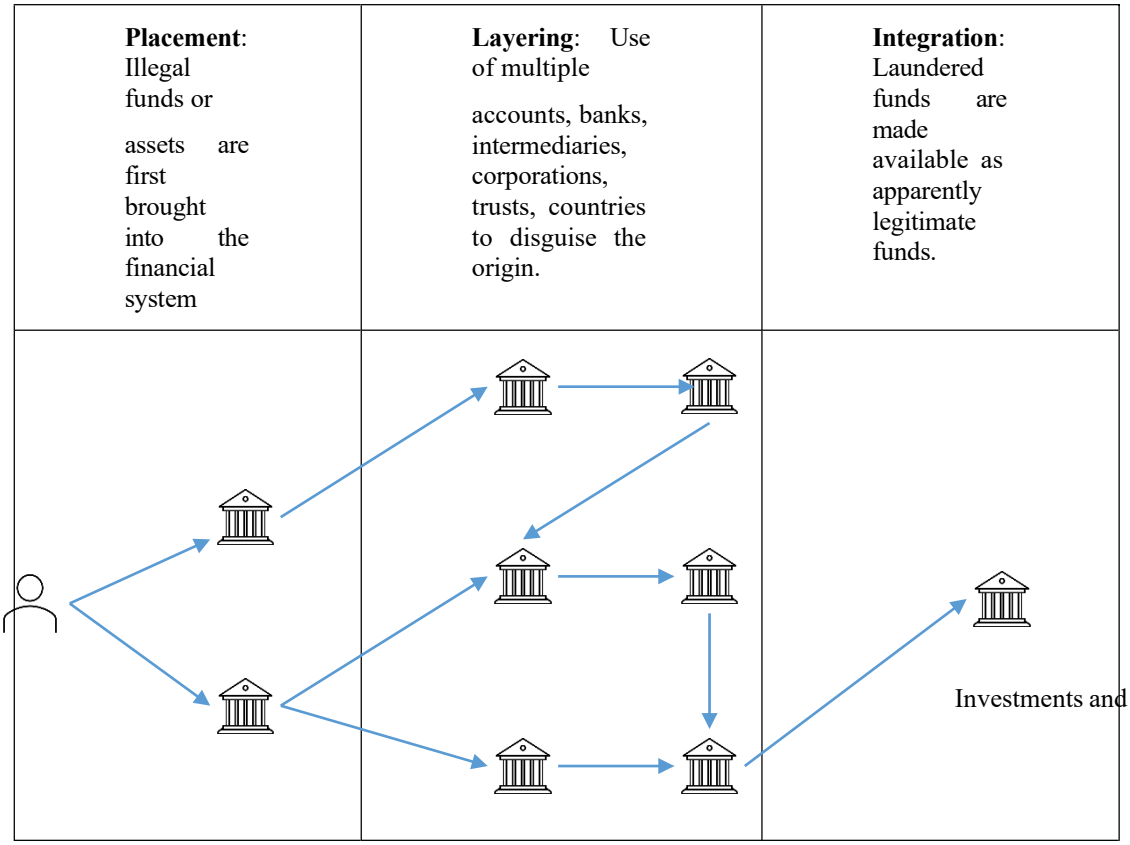

Diagram 1 – Process of Money Laundering

2.1. Placement

Placement is the process through which illegally earned funds are injected into the financial system of a country. This is achieved by various methods, the common one being depositing the money in several banking institutions by means of small cash deposits in the name of unknown individuals or organisations, in order to avoid detection by financial regulatory authorities. This is usually considered the riskiest

part of the process since chances of detection are highest at this stage. It is also the first step of re-introduction of laundered money into the economy.

2.2. Layering

Layering involves a series of transactions by which illegally acquired money is routed through different financial institutions, to separate it from its origin. This movement of funds may often be interjected by purchase of fictional high value commodities such as diamonds, houses, boats etc. to distance the money from its source. In crossborder scenario, the transfer of funds takes place across jurisdictions through different mediums such as shell corporations, banks etc. Detection of money trail becomes difficult with the movement of funds from one jurisdiction to another, especially if it is through several permutations and combinations.

There is change in currency of the transferred funds and the funds usually passes through or is parked in countries which do not have reciprocal agreements to disclose financial information. Layering is the most complex step of money laundering that makes tracing the money trail a difficult task for enforcement agencies. Different techniques such as loan on low or no interest rates, fictious purchases, back to back loans are utilised for laundering the money. An important characteristic of this step is to provide anonymity and to hide the audit trail. This is the stage where the launderers take help from professionals to protect themselves from being detected.

2.3. Integration

The laundered money is reintroduced in the financial system through the process of _integration‘. At this juncture, the laundered money is usually invested in the economy through paper institutions that are setup in nations, often called financial havens, where the financial secrecy is guaranteed. The legal ownership of the laundered money is vested in these paper institutions while the beneficial interest from them is derived by the money launderer. The funds directed from these institutions are then invested into various economic sectors such as capital markets, real estate, catering industry, gold and diamond market and converted to appear as money from legitimate sources.

3. Brief Overview of Origin and Development of Anti Money Laundering Law

The earliest known instances of money laundering were seen in China about 2000 years ago. The Chinese traders indulged in commercial activities which were banned by the government. In order to protect the wealth generated from such banned activities, the traders hid the wealth in remote jurisdictions. [17]The hidden wealth was later converted into movable assets and invested in legitimate business of these traders, thus, legitimising the source of the money.

Some historians opine that the origin of the term _money laundering‘ was from the

[17] See https://kyc-chain.com/the-history-of-money-laundering/

popular practice of mafia ownership of launderettes in USA in the 1930‘s. [18]The launderettes, which were a flourishing cash-intensive business, were used by the mafia to account for proceeds earned by them through criminal activities such as bootlegging, prostitution, extortion, gambling etc. However, it has been argued by some others that coinage of the term _money laundering‘ is because, money from illegal source is put through a cycle of transactions that cleans such money and makes it appear as money earned through legal activities.

USA was the first county that criminalised money laundering by enacting the Money Laundering Control Act of 1986 (—MLCA‖) and made it a federal crime. This was done in an attempt by the Congress to address the raging concerns regarding the nexus between laundered money and growth of organised criminal activity in the USA. The adverse socio-economic impact of money laundering was clearly visible to the legislators and strict penal laws were imposed to curb this practice.

Anti-money laundering legislation originated in the 1970s in the United States and in Europe, slowly evolving into an international network of numerous national and international instruments determining the approach to money laundering and terrorist financing which is now followed in almost all countries across the world.

One of the earliest examples of targeted legislation against money laundering can be found in the United States Bank Secrecy Act[19] of 1970. The most important aspect of the law was to establish a system of currency transaction reports, to which obliged entities had to report any transaction of value of more than $10,000.[20] However, the rigid reporting threshold proved this law‘s greatest weakness, as criminals quickly learned to make small deposits.[21] Another weakness of the Bank Secrecy Act was the inconsistent definition of obliged entities The lessons learned from the weaknesses of the Bank Secrecy Act have led to the development of the reporting of _suspicious‘ transactions,[22] which is to prevent money laundering operations from remaining undetected simply for the fact that the value to be moved was one cent below a rigid threshold. Also, the idea that part of the fees paid by the customer to the financial institution for its services went toward covering the costs of the surveillance and reporting of the customer‘s transactions created some uneasiness among the customers.[23] This uneasiness led to a challenge of the Bank Secrecy Act before the United States Supreme Court, which, however, did not hold this act to be unconstitutional. The Supreme Court ruled that —There is no legitimate _expectation of privacy‘ in the contents of the original checks cheques and deposit slips, since cheques are not confidential communications, but negotiable instruments to be used

in commercial transactions, and all the documents obtained contain only information voluntarily conveyed to the banks and exposed to their employees in the ordinary

[18] See https://kyc-chain.com/the-history-of-money-laundering/

[19] The Financial Recordkeeping and Reporting of Currency and Foreign Transactions Act of 1970 (31 U.S.C. 5311 et seq.), commonly referred to as Bank Secrecy Act.

[20] Gouvin (2003), p. 963.

[21] Gouvin (2003), p. 964. See also Sorel (2003), p. 376.

[22] Gouvin (2003), p. 964.

[23] See, in this context, Schwartz (1968), p. 742.

course of business.‖[24] The Court therefore found that the Fourth Amendment to the United States Constitution, protecting citizens against unreasonable search and seizure, was not applicable in this case. The Bank Secrecy Act was not, however, left in its original state for long.

In 1978, the Right to Financial Privacy Act[25] was passed in order to counteract some of the negative effects of the Bank Secrecy Act, and to address the concerns of the customers of financial services. The main intention of the Financial Privacy Act was to make the disclosure of financial records subject to the consent of the customer, if the customer was a private individual.[26] It is interesting to note that this framework of anti-money laundering legislation was put into place long before money laundering itself was made a crime. The United States did not establish money laundering as a criminal offence until 1986, yet even at that time being one of the first countries worldwide to specifically criminalize this activity.[27] After this step, however, the United States led an international effort resulting the adoption of such statutes quickly all over the world.[28] Throughout the 1990s, the money laundering rules were again amended several times. The first important change was to move from rigid reporting thresholds to the more flexible concept of suspicious transactions.[29] The 1992 amendment of the Bank Secrecy Act increased the reporting duties of the financial sector to implement this innovation, but the uncertainty of the definition of the concept of ‗suspicious transaction' and the strict liability for failure to report (as opposed to the absence of liability for over- reporting)[30] caused a large amount of unnecessary reports, veritably drowning the authorities in paperwork and paralysing the administration.[31] A second important notion of the 1990s was the first introduction of the Know Your Customer (KYC) approach. ―The 1998 Know Your Customer proposal would have required financial institutions to determine the customer's identity, identify the source of customer funds, determine the customer's ‗normal and expected' transactions, monitor accounts for transactions that were not consistent with those expectations, and determine whether such transactions were unusual or suspicious.‖[32] However, this approach was at that time deemed to be much too far-reaching, and too much in conflict with the customers' rights. One might say that the measures were considered to be disproportionate.[33] The proposal was ultimately withdrawn and the

[24] Supreme Court of the United States, decision of April 21, 1976, United States v. Miller, 425 U.S. 435 (1976), pp. 441-443.

[25] he Right to Financial Privacy Act of 1978 (12 U.S.C. ch. 35, § 3401 et seq.), commonly referred to as RFPA or Financial Privacy Act.

[26] Gouvin (2003), p. 965.

[27] Leslie (2014), p. 169.

[28] See for instance Arzt (1990), p. 1 f. for the adoption in Germany, Jong (2014), p. 25 ff. for the application of such rules in South Korea, Magrani (2014), p. 34 f. for the application in Brazil.

[29] Gouvin (2003), p. 967.

[30] Kaetzler (2008), p. 179; Dittrich/Trinkaus (1998), p. 344.

[31] Gouvin (2003), p. 967 f. See also Ryder (2007), p. 836 f.; Lennon/Walker (2009), p. 41; Kaetzler (2008), p. 179.

[32] Gouvin (2003), p. 969; Zentes/Wybitul (2011), p. 92.

[33] See for a detailed discussion of the proportionality of the terms of the fourth Anti-money laundering Directive Chapter IX below.

act could not be passed at the time.[34]

3.1. Establishment of The Financial Action Task Force (FATF)

One of the recurring problems identified in anti-money laundering and in combatting of terrorist financing is the cross-border character of these crimes. The Financial Action Task Force was established in order to facilitate a venue for such international cooperation concerned with the prevention and combating of (international) money laundering.[35] The FATF introduces itself as ―an inter- governmental body established 1989 by the Ministers of its Member jurisdictions. The mandate of the FATF is to set standards and to promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and the financing of proliferation, and other related threats to the integrity of the international financial system. In collaboration with other international stakeholders, the FATF also works to identify national-level vulnerabilities with the aim of protecting the international financial system from misuse.‖[36]

The FATF was founded in 1989 during the G7 summit in Paris, and is now accommodated on the premises of the OECD headquarters in Paris. It counts 36 members, among which are the EU-15 Member States, Norway, Iceland, Switzerland, Turkey, and the European Commission as an individual member. The FATF is one of the most important driving forces in the development of international anti-money laundering legislation. In 1990, the FATF has first published its 40 Recommendations, outlining the measures that should be taken by all countries in order to identify the potential risks and find ways to adequately respond to these risks. The recommendations were originally intended to combat the laundering of revenue generated by the sale of illegal substances.[37] However, they were soon (in 1996, to be exact) updated to include the laundering of other types of criminal proceeds as well.[38] From 2001 on, nine Special Recommendations were added, which specifically addressed the risk of terrorist financing.[39] The most recent revision in 2012 updated the recommendations, and integrated the Special Recommendations into the scope of the forty recommendations.[40]

The FATF also regularly publishes special reports on topics, in which a risk of money laundering or terrorist financing was identified. In this way, the FATF has published a report on Hawala in October 2013 and one on virtual currencies in June 2014.[41]

[34] Gouvin (2005), p. 523.
[35] Hülsse (2008), p. 459 f.
[36] FATF Recommendations (2012), p. 7. See also BMF (2004), p. 86; Razavy/Haggerty (2009), p. 142.
[37] FATF Recommendations (2012), p. 7; Sorel (2003), p. 373.
[38] FATF Recommendations (2012), p. 7.
[39] FATF Recommendations (2012), p. 7.
[40] FATF Recommendations (2012), p. 7.
[41] See FATF Hawala (2013) and FATF virtual currencies (2014).

Besides these reports, the FATF also examines national rules and the application of the FATF standards periodically very closely and evaluates whether the national implementation of the FATF‘s own recommendations are satisfactory.

3.2. The Patriot Act

The Patriot Act,[42] adopted by the United States after the terrorist attacks of 2001, introduced stringent measures for oversight and traceability of financial transactions, including a rigorous know your customer (KYC)-regime to be observed by all financial institutions. The know your customer duties include the identification of users and the retention of the user‘s transaction history.[43] Money transmitters which are not attached to a bank became subject to strict licensing requirements,[44] which pushed many small money transmission services out of business, and led to a large number of hawaladars either going out of business or underground. The know your customer regime and licensing requirements found their way quickly via the FATF guidelines into national laws worldwide.[45]

It was mentioned earlier that the Know Your Customer rules were not met with enthusiasm upon their first proposal in the United States. This, however, changed in 2001. Only a couple of years after the Know Your Customer rules were rejected due to civil liberties concerns, the political climate suddenly underwent so radical a change that those rules could pass through the United States legislature in record time.[46] The attacks of September 11th, 2001 triggered a radical response by the government,[47] passing the USA Patriot Act203 only six weeks later, in an unprecedented legislative effort.

―The Patriot Act was enacted with remarkably little deliberation. The huge anti-terrorism package, covering 350 different subject areas and forty different agencies, was pushed through Congress in less than a month. The law was hammered out in private negotiations between the Justice Department and party leaders; there were no final hearings to allow dissenters a voice in the process, no committee reports, no conference committee, and indeed, most members of Congress did not even have the opportunity to read the legislation.‖[48]

The political climate of the time allowed for such an irregular law-making procedure,[49]205 and it allowed for anti-money laundering rules previously deemed unacceptable due to human rights concerns to pass into law. The Patriot Act brought about the codification of the Know Your Customer rules. In particular, customers of

[42] The Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT ACT) Act of 2001 (Pub. L. No. 107-56, 115 Stat. 272 (2001), codified as amended in different sections of 12, 15, 18, and 31 U.S.C.), commonly referred to as (USA) Patriot Act.
[43] See Gouvin (2005), p. 977 f.
[44] See FATF international best practices – combating the abuse of alternative remittance systems (2003), p. 3.
[45] The FATF received a mandate to oversee measures against terrorism financing in October 2001.
[46] Ryder (2007), p. 822; Razavy/Haggerty (2009), p. 143. See in this context also Korff (2014), p. 92; Golden et al. (2011), p. 515.
[47] See in this context also Mezzana/Krlic (2013), p. 5; Razavy/Haggerty (2009), p. 142 f.; Shields (2005), p. 28.
[48] Gouvin (2003), p. 961. See also Lennon/Walker (2009), p. 39
[49] See also Al-Jumaili (2008), p. 194.

the banking sector need to be identified, and the identity verified as well as checked against blacklists of terrorist suspects.[50] The records of the identification procedure also needed to be retained by the institution. While before the rules of the Patriot Act entered into force, only some transactions triggered the duty to identify the customer, the Patriot Act now required customers to be identified at the beginning of the business relationship, independent of any further action.[51] Furthermore, some additional measures could be triggered if the Secretary of the Treasury identified an increased risk of money laundering, among others the duty to ―(1) maintain additional records or make additional reports in connection with specific transactions; (2) identify the foreign beneficial owners of certain accounts; (3) identify the customers of a foreign bank who use interbank _payable-through' accounts; (4) identify the customers of foreign banks who use interbank correspondent accounts; and (5) restrict or prohibit the opening or maintaining of certain interbank _payable through' or correspondent accounts.‖[52]

Finally, the Patriot Act compelled compliance with these measures by imposing sanctions, including high fines. There are a number of points which could be criticised about the USA Patriot Act. The irregular law-making procedure as well as the fact that the measures contained in the law have previously been considered to be in conflict with human rights have already been named earlier. Furthermore, it should be pointed out that the measures of the Patriot Act have increased the reporting duties falling on an increased number of obliged entities, exacerbating the previously already immense amount of paperwork with the authorities.[53] It should also be pointed out that while passed ostensibly in a package to design a framework for the protection and fight against terrorism,[54] it is not at all clear how the strengthened anti-money laundering rules are going to be useful for the fight against terrorist financing.[55] In fact, it is not clear whether the measures against the financing of terrorism have a significant impact on terrorism itself at all.[56]

3.3. Developments in Europe

Meanwhile, developments in Europe closely followed the legal innovations in the United States. The first important anti-money laundering document on the European level was Recommendation (80)10,[57] adopted by the Council of Europe in 1980.

The first AntiMoney Laundering Directive 91/308/EEC (1AMLD)[58]. It was passed in 1991 on the European Union level. This Directive contained a first outline of the European anti-money laundering framework, and was largely based on the 1990

[50] Ryder (2007), p. 830 f.; Silvestri (2005), p. 167.
[51] Gouvin (2003), p. 971. See also Korff (2014), p. 48 f.
[52] Gouvin (2003), p. 971 f. See also Ryder (2007), p. 835 f.
[53] Gouvin (2003), p. 973; Hingst/Lösing (2012), p. 337.
[54] See in this context also Ronellenfitsch (2007), p. 563.
[55] Lennon/Walker (2009), p. 39.
[56] See Gouvin (2003), p. 973 ff.; Ryder (2007), p. 829 f. S
[57] Recommendation No. R(80)10 of the Committee of Ministers to Member States on Measures against the Transfer and the Safekeeping of Funds of Criminal Origin. Adopted by the Committee of Ministers on 20 June 1980 at the 321st meeting of the Ministers' Deputies.
[58] Council Directive 91/308/EEC of 10 June 1991 on the prevention of the use of the financial system for the purpose of money laundering, OJ L 166, 28.6.1991, p. 77–82.

FATF standards. Importantly, the Directive contained a positive obligation on Member States to make money laundering a criminal offence, but did not apply to terrorist financing.

The second and third Anti-money laundering Directives were helped along very much by the stipulations of the Patriot Act. The second Anti-money laundering Directive had been passed in December 2001 on the wave of efforts against money laundering and terrorist financing spearheaded by the United States.[59]

The proposal for the third Directive[60] was triggered by the FATF Recommendations, which were revised in 2003 to reflect the newest developments in money laundering, and to which were added the Special Recommendations concerning terrorist financing. In 2005, Convention 198 on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime and on the Financing of Terrorism (C198)[61] was passed under the auspices of the Council of Europe. The Convention is now signed by 40 countries and organisations, including the European Union, and ratified by 29 countries, of which 11 countries are not European Union Member States. Convention 198 is of immense practical importance as an international instrument.[62] However, the legal provisions outlined in the Convention have since been eclipsed on a EU level, as the measures contained in this instrument fall short in scope and detail of the demands of the FATF and indeed the fourth and proposed fifth Anti-Money Laundering Directives.[63] The Convention does, however, serve as an extension of the anti-money laundering framework out of the limits of the European Union toward a pan-European approach, bringing the 11 non- European Member States ratifying the Convention into closer cooperation with their partners in the European Union. While it is not necessary to repeat here the content of the measures of the Convention, one striking thing should be pointed out, which is the fact that C198 fails to refer to the

ECHR. The Convention does demand that when information is shared among Financial Intelligence Units, the recipient FIU must not further divulge received information (article 46 (10) of C198), and that shared information shall be protected by the standard applied to the requesting FIU under national law (article 46 (11) of C198). However, the Convention fails to demand that all processing of data pursuant of the anti-money laundering measures contained in the Convention must be in conformity with the demands of Article 8 of the ECHR and C108.[64]

Currently the European anti-money laundering framework is governed by the fourth Anti-money laundering Directive (EU) 2015/849, with a fifth Antimoney laundering Directive expected shortly. The fourth Anti-money laundering Directive has entered

[59] Ryder (2007), p. 838. See also Mezzana/Krlic (2013), p. 5; Ronellenfitsch (2007), p. 564; Warde (2007), p. 236.
[60] Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing (Text with EEA relevance), OJ L 309, 25.11.2005, p. 15–36.
[61] Council of Europe Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime and on the Financing of Terrorism, Warsaw, 16 May 2005, CETS No.198, Entered into Force on 1 May 2008.
[62] COM (2016) 50 final, p. 13.
[63] See r COM (2016) 50 final, p. 9, mentioning the oversight of introducing a uniform criminal offence of terrorist financing on the European Union level.
[64] See also Korff (2014), p. 94.

into force in June 2017, and is therefore one of the newest and most modern piece of anti-money laundering legislation currently in existence. It reflects the newest international standards, and its territorial scope covers the large European financial centres in London, Paris, and Frankfurt.

3.4. Financial Intelligence Units (FIU)

FIUs were originally established under a Council Decision in 2000,[65] and since the third Anti-money laundering Directive, they and their work are an integral element of the anti-money laundering strategy employed on the European level. The rules concerning FIUs and their work have continually been expanded, from only some general remarks made on the work of FIUS in article 21 3AMLD to a detailed description of the organisation and tasks of FIUs in article 32 4AMLD. The rules contained in the fourth Anti-money laundering Directive concerning FIUs are furthermore expected to be further clarified in the upcoming fifth Antimoney laundering Directive.[66] In essence, FIUs are entities established in each Member State, which specialise in anti-money laundering and countering the financing of terrorism. Their task is to receive suspicious transactions reports from obliged entities and to lead the prevention and investigation into money laundering and terrorist financing schemes.[67] Recital 14a 5AMLD puts the purpose, tasks and obligations of the FIU as follows:

―The purpose of the FIU is to collect and analyse the information which they receive with the aim of establishing links between suspicious transactions and underlying criminal activity in order to prevent and combat money laundering and terrorist financing, and to disseminate the results of its analysis as well as additional information to the competent authorities where there are grounds to suspect money

laundering, associated predicate offences or terrorism financing. With respect to this analysis function, it is essential that FIUs can exchange with other FIUs any information that may be relevant for the processing or analysis of information related to money laundering, associated predicate offences and terrorist financing regardless of the type of associated predicate offence and even if the type of associated predicate offence is not identified at the time of the exchange. FIUs should not refuse the exchange of information to other FIU, spontaneously or upon request,[68] for reasons such as lack of identification of associated predicate offence, features of criminal national laws, differences of associated predicate offence definitions or reference to particular associated predicate offences. Similarly FIUs should grant their prior consent to forward the information to competent authorities regardless of the type of possible associated predicate offences in order to allow the dissemination function to be carried out effectively. In any cases differences between national law definitions of associated predicate offences should not limit

[65] See also Hetzer (2002), p. 411.
[66] COM (2016) 450, p. 13 f.
[67] Hetzer (2002), p. 410.
[68] See in this context also Korff (2014), p. 101. Footnote added by the author.

the exchange, the dissemination to competent authorities and the use of this information as defined in this Directive. Such measure applies to all forms of associated predicate offences. Having regard to the fact that FIUs have reported difficulties in exchanging information based on differences in national definitions of some of the associated predicate offences which are not harmonised under the European law, such as tax crimes, such differences in national law should not hamper the exchange, dissemination and use of such information by and between FIUs.‖[69]

Apart from the rapid developments concerning money laundering, the rules concerning terrorist financing have also been developed at as rapid a pace.[70] The European lawmaker has concerned itself very much with the fight against terrorism since the events of September 11th, 2001, and especially since the rise of ISIS and the string of attacks in Europe in recent years.[71] A great amount of output in Regulations, Directives, and Decisions has been generated. It has been boldly ―declared that anti-terrorist finance measures introduced since 2001 have prevented some terrorist attacks‖,[72] though specific proof for such a claim is not forthcoming. In the meantime, the framework is still in the process of development, with some legislative changes expected shortly. Only the newest and most modern of these instruments are to be highlighted briefly here.In February 2016, the Commission has communicated an Action Plan on the fight against terrorist financing,[73] and in Mach 2017, the European legislator has passed Directive (EU) 2017/541 on combating terrorism.[74] The Action Plan brings forward a number of different measures, from small amendments of existing laws to large scale innovations to the legal system. The Commission splits its measures into several different types of actions, including the prevention of the movement of funds into the hands of terrorist groups,[75] and preventing terrorist groups

from generating revenue themselves.[76] The former is mainly to be addressed by tightening the existing legal framework, particularly the anti-money laundering legislation. The latter is a little more difficult to address, as modern terrorist groups have not only found innovative ways to create revenue, but also ways to commit attacks of unprecedented economy.[77] Terrorist groups generate revenue using both legal and illegal instruments, particularly through the trade in goods.

4. Development of Anti Money Laundering Law in India

After the 9/11 attacks, the attention of the world turned to terror financing. The Political Declaration and Global Programme of action adopted by United Nations

[69] Recital 14a of the fifth Presidency compromise text 15605/16.
[70] See also Kaetzler (2008), p. 174; Winer/Roule (2002), p. 89 f.
[71] COM (2015) 625 final, p. 2 f. See also Waldron (2003), p. 200.
[72] Ryder (2007), p. 847 f.
[73] COM (2016) 50 final.
[74] Directive (EU) 2017/541, p. 6–21.
[75] COM (2016) 50 final, p. 3 f. See also Basile (2004), p. 175 f.
[76] COM (2016) 50 final, p. 12. See also Winer/Roule (2002), p. 89 f.
[77] See Ryder (2007), p. 848; Basile (2004), p. 175 f.

General Assembly (after establishment of the Financial Action Task Force, FATF) called upon the member States to enact legislation to prevent money laundering.[78] The Indian Government considered it necessary to implement the aforesaid resolution and enacted the Prevention of Money Laundering Act, 2002[79] (PMLA) which was brought into effect on 1st July, 2005 and it extends to the whole of India including the state of Jammu & Kashmir.

As stated in the Preamble to the Act, it is an Act to prevent money-laundering and to provide for confiscation of property derived from, or involved in, money-laundering and to punish those who commit the offence of money laundering. The Act consists of 10 chapters containing 75 sections and 1 Schedule divided in 5 parts. The Directorate of Enforcement (ED) in the Department of Revenue, Ministry of Finance is responsible for investigating the cases of offence of money laundering under Prevention of Money Laundering Act, 2002. It re-empowered ED with the powers of criminal prosecution. To conduct investigations, the ED is empowered to issue summons, record statements, make arrests, and search and seize property. Despite having powers of investigation, the ED has not been classified as a _police agency'. These bodies are not obliged to follow the Code of Criminal Procedure Code, 1973 (CrPC). The Directorate is empowered to investigate offences of money laundering and to take actions/prosecute persons in cases where it is proved. These actions are taken against the proceeds of crime derived from the Scheduled Offences listed under PMLA. A total of 156 offences under 28 statutes have been listed as Scheduled Offences under PMLA. It has the additional responsibility of extending cooperation to foreign countries for investigations regarding money laundering and for the recovery of the proceeds of crime held in foreign countries.

The Act was amended by the Prevention of Money Laundering (Amendment) Act

2009 w.e.f. 01.06.2009. The Act was further amended by the Prevention of Money-Laundering (Amendment) Act, 2012 w.e.f. 15-02-2013.[80] With the amendments in 2009 and 2013, the scope of PMLA was widened. It provided more teeth to the ED. It has become the only Act in India, under which a statement recorded before an investigating officer is admissible in a court as evidence. As per Sections 48 & 49 of the PMLA, the officers of the Directorate of Enforcement have been given powers to investigate cases of Money Laundering. The officers have also been authorised to initiate proceedings for attachment of property and to launch prosecution in the designated Special Court for the offence of money laundering.

4.1. Critical Analysis of PMLA, 2002

Prevention of Money Laundering Act, 2002 is one of the legislation, whose provisions have been frequently sparked controversies due to it being arbitrary and violative of Fundamental Rights of the citizens. The legislature has diligently maintained the arbitrary feature of the Act through amendments under the stance of

[78] See www.fatf-gafi.org/

[79] See www.indiacode.nic.in

[80] See https://dor.gov.in/sites/default/files/PML%20%28Amendment%29%20Act%2C%202012.pdf

"national security", "public interest and ―serious nature of the crime of money laundering‖. Following are some of the controversial feature of PMLA -

1. Seizing of assets: The ED on the basis of information in his possession could just walk into anybody‘s house.[81]

2. Opacity of charges: Enforcement Case Information Report (ECIR) – an equivalent of the FIR – is considered an ―internal document‖ and not given to the accused as there is no legal requirement of registering an ECIR.[82]

3. Issue of Self Incrementation : The accused is called upon to make statements that are treated as admissible in evidence. protection given to an accused under Section 161 Cr.PC. Constitution of India in Article 20(3) and is further backed by Section 25 of Indian Evidence Act. Consequentially, the courts have also time and again upheld the same to be not ultra vires of the Constitution or Evidence Act paving the way forward for conflicts.[83]

4. Restrictions on freedom of movement: Investigation by the ED has consequences that have the potential of curtailing the liberty of an individual as courts could grant bail to a money-laundering accused only if the twin conditions u/s 45(1) of PMLA are satisfied.[84]

5. A tool used for Harassment: The persons summoned under the section are bound to attend the proceedings as directed by the officer. The ED could seek details of all their financial transactions and of their family members based on mere suspicion.[85]

6. Misuse of central agencies: PMLA could be pulled into the investigation of even ordinary crimes by the Enforcement Directorate.

7. Burden of Proof - A person can be acquitted under the scheduled offence but convicted under the PMLA Act because the burden of proof is on the accused and the statements/documents given to the ED officer is admissible.[86]

5. Indian Judiciary on Prevention of Money Laundering

PMLA has become one of the most controversial legislation in India. The constitutionality of which has been time and again challenged before the different Courts in the country. There can be no doubt that the right to move the Supreme Court by appropriate proceedings for the enforcement of the right conferred by Part III is itself a guaranteed fundamental right. [87]

Madhu Koda case became the first in the history of the ED under PMLA to end in conviction. This instance pertains to the money laundering case involving former state Chief Minister of Jharkhand Madhu Koda. The case was unearthed by the ED

[81] Refer Section 17 of PMLA, 2002
[82] See *Virbhadra Singh V. Enforcement Directorate and Ors,* 2017 (3) RCR (Criminal) 576
[83] Refer Section 50 of PMLA, 2002
[84] See *Gautam Thapar v. Directorate of Enforcement* - [2022] 136 taxmann.com 77 (Delhi)
[85] Refer Section 50 of PMLA, 2002
[86] Refer Section 24 of PMLA, 2002
[87] Refer *Smt Ujjam Bai vs State Of U.P* on 10 April, 1962

in September 2009 in which a number of arrests were made and assets worth hundreds of crores were attached. Koda was held guilty of corruption and conspiracy, by a trial court in 2017, in allocation of a Jharkhand-based coal block to Kolkata-based company Vini Iron and Steel Udyog Ltd (VISUL). Koda had moved the plea for stay of conviction to contest in the 2019 Jharkhand state assembly polls and the high court had reserved its verdict on his application on March 19. The court held - "It would not be apposite to facilitate the appellant to contest elections for any public office, till he is finally acquitted,".[88]

The presumption of innocence is a fundamental rule of our judicial system which roots down its origin to the Constitutional provision of Article 21. The Hon'ble Supreme Court has reiterated in various landmark pronouncements that ―Bail is the rule and Jail is an exception‖. In *Sanjay Chandra v CBI*, the Supreme Court was of the opinion that the accused holds a better chance to prepare his case while he is out on bail compared to the one remanded in custody. However, in *P. Chidambaram v Directorate of Enforcement*, the Hon'ble Supreme Court stated three crucial parameters for the grant of bail which included that the accused is not at ―flight risk‖. Secondly, the possibility of tampering the evidences against the accused is negligible. Thirdly, the probability of influencing the witnesses in the matter is minuscule.[89]

In *Usha Agarwal Vs Union Of India*, the constitutional validity of the provisions of Sections 2(u), 3, 4, 5, 8, 13, 24, 45 and 50 of the PMLA Act was challenged as being ultra vires Articles 14, 19, 20, 21 and 22 of the Constitution. The court while upholding the validity of the provisions held that mere possibility of abuse of a provision by those in charge of administering it cannot be a ground for holding a provision procedurally or substantively unreasonable. The said reasoning goes against the fundamental principle behind making the confessions inadmissible which is itself _the possibility of abuse of powers' by the investigating authorities.[90]

It was observed in *Virbhadra Singh & Anr vs Enforcement Directorate,* that ―the powers of survey, search and seizure, search of persons, retention of property or of records, to issue summons to enforce attendance of any person and compel him to give evidence or produce records, discovery or inspection, as indeed the power to arrest, as conferred by various provisions of PMLA on the investigative agency created by the law equip such agency with all the necessary tools to conduct an effective investigation without the aid or assistance of police. For purposes of criminal prosecution, the initiative is placed in the hands of the authorities established by PMLA, the cognizance by the court mandatorily required to be on their complaint.‖ The Delhi High court in this judgment observed that, though there is no legal requirement to register an ECIR before setting the process of investigation in motion, under PMLA even then it is routinely registered and hence it is akin to an FIR. [91]

The ED registered an ECIR in Babulal case and while investigating, they discovered

[88] Refer *Madhu Koda vs State Thru Cbi* on 22 May, 2020
[89] Refer *P. Chidambaram vs Directorate Of Enforcement* on 4 December, 2019
[90] Refer *Usha Agarwala vs Union Of India And Ors* on 29 August, 2017
[91] Refer *Virbhadra Singh V. Enforcement Directorate and Ors, 2017 (3) RCR (Criminal) 576*

that the Petitioners were involved in Rs. 3500 crore worth money laundering activities. The Court concluded that the investigation by the ED under the PMLA is unaffected and can proceed even though the scheduled offence is compromised, compounded, quashed or the accused therein is acquitted. The aforementioned decision makes it evident that the Court should impose measures to guarantee that investigations by ED are not turned into a fishing and roving inquiry when the ED discovers a new offence during the inquiry.

The ED seizes the property first for purposes other than those intended, and then chooses whether to apply provisions of the PMLA or Section 102 CrPC, as it has been done in Opto Circuit[92]. In this judgment, the Court dismissed the ED's argument that the power of seizure is available under Section 102 CrPC, which was exercised, and therefore the freezing of account would stay lawful. The Court concluded that the power must be exercised in the way described, or it will violate the necessity of adhering with due process under law.

6. Conclusion

In this paper we took a closer look at the working of Money Laundering and legal provisions to address it. We also identified the conflict between the Fundamental Rights on the one hand and the effective investigation into serious crime on the other hand. The law enforcement authorities have the task of identifying and investigating, ultimately preventing crimes such as money laundering and other crimes associated with it. The protection of the fundamental right ensures that the authorities do not encroach too much on the fundamental rights and freedoms of individuals while fighting these crimes. Hence, we see a clash between the interests of law enforcement authorities in gathering information helping them in their fight against crime, and the interest of individuals in protecting their Fundamental Rights.

The measures of the Anti-money laundering laws interfere with the privacy of individuals in several different ways. Individuals are identified when the obligations of the Anti-money laundering laws are triggered.

Also anti-money laundering approach addresses a parts of the financial sector for which it was designed, leaving large gaps in oversight over alternative services. The anti-money laundering legislation is essentially based on data processing on a large scale, hence, conflicts with the protection of rights. The rights protect the individual from intrusions into his or her private life and from illegitimate processing of his or her personal data

A person's social and personal identity can play a major role in their choice for a transaction system. There are persons who avoid the conventional banking sector and instead decide to opt for a different transaction system. Religious and ideological views and concerns can play a big role in the customer's choice for virtual currencies or informal value transfer services.

It may be argued that the anti-money laundering measures pursue the legitimate aim of preventing and facilitating the detection and investigation into serious crime and

[92] Refer *Opto Circuit India v. Axis Bank* [2021 SCC OnLine SC 55]

are therefore justified. However, the interest of the population in protecting their fundamental rights is equally justified. Therefore, it is particularly important that the measures do not go beyond what is necessary, and that a balance must be struck between the conflicting interests.

Finally, it should be mentioned that a careful examination of the proportionality test shows one serious shortcoming of the test: it can only be applied to one legal instrument or measure at a time, and that only after a lengthy and costly legal procedure. It does not allow for the assessment of the cumulative effect of two or more measures. It is the cumulative effect, however, which will often have a particularly negative effect on the privacy of individuals.

In conclusion, it must be emphasised that the anti-money laundering measures are very far-reaching, and that they introduce a sweeping system of identification, transaction monitoring, reporting, and data retention. This system has some obvious points of collision with the fundamental rights and data protection, which are the pivotal for our Democratic Society to thrive. The lack of meaningful protection against this dangerous for Democracy to thrive and should be remedied at the International level.

ARTICLES/6

Spiritual Intelligence for Economic Recovery: Need of Mutual Trust and Relations in Post-Pandemic Scenario

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Abstract:

During pandemic economy has shown slow down it need recovery through various methods. Spiritual Intelligence can be one such method. In this paper, the researcher wants to discuss a solution using a conceptual cum descriptive study as a review to deal with the challenges of socioeconomic growth. In order to achieve socioeconomic growth, it is necessary to think peacefully about economic growth because economic growth is directly related to social structure and relations. Mutual trust and cordial relationships are required for peace, and these two factors can be attained through Spiritual Intelligence (IQ+EQ).The first thing to grasp is that this pandemic has infected 188 nations, resulting in a high number of illnesses and fatalities. The virus has not only turned into a public health emergency, but it has also had an impact on the worldwide economy, reduced productivity, loss of life, disrupted families, business closures, trade disruption, general financial state, and health difficulties are increasingly seen around the globe, along with the extremely

difficult aspects of isolation and quarantine. After all, personal and professional

lives are significantly impacted by health and financial concerns.

This leads to irritable, irritated conduct, which is why we must deal with spiritual intelligence by pausing our rapid responses and actions in order to mend the relationships. Irony is that everyone knows everything and becomes aggressive, frustrated, misbehaves, irritates, disrupts work life, while there is a need for humanity, intelligence, empathy, and cooperation with mutual

understanding, cordial relations, and trust. These things are made possible by factors of Spiritual Intelligence such as (self-control) through Transcendental Meditation, empathy (mindfulness, Consciousness) that is the power of constant wisdom, (Complete control) Trust & peacefulness and (supreme goal) for Inner happiness and cordial relations. There is a link between empathy and spiritual intelligence. As a result, enhancing spiritual intelligence is the best technique for boosting empathy during the COVID19 pandemic.

There is an urgent need to investigate how COVID-19 – as a health and socio-economic development crisis – emerged in the manner that it did, as well as to propose prospects for post- pandemic reforms and a broader rethinking of development. We will now look at how obstacles emerge for thought and action in three main areas: science and decision-making, constructing resilient socio- economic systems, and citizen-state interactions. For each area, we evaluate what has been learnt during the COVID-19 pandemic as well as past epidemics, and we explore the consequences for dealing with future health and other emergencies, as well as for development in general. Therefore, we can highlight the issue of less known fact spiritual Intelligence for economic recovery.

Key Words: Economic recovery, Socio-Economic Growth, Pandemic, Spiritual Intelligence,Trust and Relations.

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Introduction

Global Corona virus (COVID-19) epidemic has created an extremely tough economic climate. Businesses are facing a slew of new issues as international borders shrink, brick-and-mortar stores collapse, and employees are encouraged to downsize. At home, separate yourself, any businesses are facing temporary or even permanent closures, putting their employees at risk. Months of financial instability and concern consumers throughout the world exhibit a range of behaviours so need for optimism about the prospects for economic recovery.

These attitudes are likely to be impacted by their knowledge of the disease, recently announced government preparedness measures such as mobility restrictions and corporate rescue plans, as well as other news events. Consumer behavior has been compelled to shift instantly, and on a vast scale. Those in isolation or under lockdown are unable to go about their daily lives, especially since many local businesses have been compelled to seal their doors for safety concerns. Concerns over the supply of products have prompted a rush to buy in quantity. The risk of a severe and long-term recession would have a substantial influence on consumer perspective, perceptions, and behaviors. The current study is to investigate and assess economic issues as Indian consumers' attitudes, expectations, income expenditures, and behaviours during the corona virus epidemic.

Furthermore, the study focuses on the shift in media consumption patterns, including media kinds and usage, since the COVID-19 epidemic, as well as the many ways in which people are utilizing social media to stay connected, informed, and entertained. Finally, the study has been attempting to determine the COVID-19-induced changes in the behavior of Indian customers for more than a month to relate with economic aspect and spiritual intelligence. Gender and age disparities in media consumption habits and consumer behavior are also investigated. Because the study is somewhat elaborative in character, the primary findings are given and discussed at the conclusion.

These can be difficult times for all of us as we hear about spread of COVID-19 from all over the world, through television, social media, newspapers, family and friends and other sources. The most common emotion faced by all is Fear. It makes us anxious, panicky and can even possibly make us think, say or do things that we might not consider appropriate under normal circumstances.

About to the Pandemic:

In December 2019, a new corona virus was discovered in Wuhan, Hubei Province, China. However, phyllo-epidemiologic investigations revealed that the 2019-nCoV did not originate in the Huanan market. The virus was brought in from somewhere else and multiplied in the crowded environment. This virus is a novel strain that has not before been discovered in humans. The virus is now known as SARSCoV-2 (severe acute respiratory syndrome corona virus).The ensuing sickness is known as corona virus disease 2019. (COVID-19) The Chinese government had taken rapid, transparent, and exceptional efforts to limit the epidemic, and had made initial progress. The World Health Organization (WHO) is very worried by the unusually rapid worldwide spread and severity of the outbreak, as well as the ignorance and inactivity of certain governments. As a result, the World Health Organization (WHO) proclaimed the new corona virus epidemic a worldwide pandemic in March 2020.

On January 30, India documented the first instance of the illness. Corona viruses are a broad category of viruses that cause symptoms ranging from the common cold to more serious disorders such as severe acute respiratory syndrome (SARS) Policy acts such as imposition of social distance, self-isolation at home, closure of institutions and public facilities, limits on movement, and even quarantine are examples of strategies to contain the spread. These activities have the potential to have disastrous implications for economies all across the world. To combat the virus's spread, the Indian government imposed a three-week national shutdown beginning March 25, 2020.

All non-essential services and companies are prohibited. Retail enterprises, educational institutions, houses of worship, and public utilities and all government offices around the country will be closed during this time, as will all modes of transportation have been halted, This is by far the most far-reaching move adopted by any country in response to the epidemic. Despite intense global containment and quarantine efforts, the prevalence of COVID-19 continues to climb, with over 1,948,617 laboratory-confirmed cases and over 121,846 fatalities globally. Currently, no particular drug is suggested for the treatment of COVID- 19 patients. The first COVID-19 vaccine is not expected to be available for clinical testing until the end of the year. Governments and pharmaceutical corporations, on the other hand, are battling to discover a quick-acting medicine to combat the corona virus. Access to safe and efficient vaccinations is vital to eliminating the COVID-19 epidemic, thus the fact that so many vaccines are being tested

and developed is extremely hopeful. WHO collaborates with partners to research, produce, and distribute safe and effective vaccinations.

Safe and efficient vaccinations are a game changer, but for the time being, we

Must continue to wear masks, wash our hands, ensure proper ventilation inside, and physically distance ourselves from and avoid crowds. Being vaccinated does not allow us to disregard caution and endanger ourselves and others, especially when research into how well vaccinations protect not only against sickness but also against infection and transmission is underway.

Migrants are less familiar in their new environment in which they temporarily live. They are prone to various social, psychological, and emotional traumas in such situations, emanating from fear of neglect by the local community and concerns about wellbeing and safety of their families waiting in their native places. Migrants are forced to leave their native places in search of better opportunities and earnings, sometime leaving behind their families. In many instances, the families in native places depend partially or entirely on the money sent by the migrant earning members of the family. the socio-economic condition of migrant construction workers in Bangalore city has improved during the post- COVID period. Their wages, household gadgets, savings, loan repayment, ownership of digital assets like mobile phones and online digital transactions have increased. However, the prevalence of diseases has marginally increased among migrant construction workers in the post-COVID period. The major problems faced by migrant construction workers include partial or non-payment of wages, lack of basic facilities at the workplace, fear of getting infected, high standard of living and absence of social security. (Keshava.S.R. & Anusha. R 2025)

During outbreak of communicable diseases, such a COVID-19, and the restrictions imposed on routine activities as part of social distancing norms to prevent the spread of the disease, scores of migrant workers tend to move back to their native places. During the prevailing COVID pandemic also, many migrant workers used all possible means to reach their destinations. Many of them are however stuck at borders, including state, district and at national border areas. These are the most marginalized sections of the society who are dependent on daily wages for their living, and in times of such distress need sympathy and understanding of the society.

Existing WHO guidance on the safe management of drinking-water and sanitation services applies to the COVID-19 outbreak. Water disinfection and sanitation treatment can reduce viruses. Sanitation workers should have proper training and access to personal protective equipment (PPE) and in many scenarios, a specific combination of PPE elements is recommended. • Many health co-benefits can be realized by safely managing water and sanitation services, and by applying good hygiene practices.

The provision of safe water, sanitation, and hygienic conditions is essential for protecting human health during all infectious disease outbreaks, including of corona virus disease 2019 (COVID-19). Ensuring evidenced-based and consistently applied WASH and waste management practices in communities, homes, schools, marketplaces, and healthcare facilities will help prevent human- to-human transmission of, the virus that causes COVID-19.

Frequent and correct hand hygiene is one of the most important measures to prevent infection with the COVID-19 virus. WASH practitioners should work to enable more frequent and regular hand hygiene by improving access to hand hygiene facilities and using multimodal approaches (refer to Hand hygiene practices) to support good hand hygiene behaviour. Performing hand hygiene at the right time, using the right technique with either alcohol-based hand rub or soap and water is critical.

Economic Problem and Recovery

An underlying issue exists as the global economy gradually recovers from the epidemic and governments continue to deploy enormous stimulus. Governments are betting on GDP as the primary metric for gauging pandemic recovery. That'd be a bad idea. GDP takes into account the overall worth of a country's commodities and services but does not include long-term metrics of prosperity. To completely "build back better," national well-being measurements should look at income inequality, environmental degradation, social inclusion, education, and so on—in other words, the fundamental elements that allow people to trade goods and services. For years, economists have lamented GDP's shortcomings as a measure of national well-being, and the epidemic has further exacerbated its shortcomings. Recent advancements in accounting for nature's assets as economic resources have moved the needle on long-term economic success indicators even farther. The Dasgupta Review, a major study commissioned by the United Kingdom government, emphasised the importance of putting a "price on nature." That is, natural capital should be evaluated on par with other types of capital. It contends that society's rate of natural resource exploitation has outpaced nature's ability to replenish the supply.

The UN has established the System of Environmental-Economic Accounting—Ecosystem Accounting (SEEA EA), which provides nations with a baseline for measuring the status of ecosystems. These are only a handful of the systems that provide additional indicators to GDP in order to better assist government policymaking.

The Measuring Wealth to Promote Sustainable Development initiative seeks to assist governments in adopting a more thorough accounting of a nation's assets in order to determine whether or not they are actually making progress. It consists of

natural capital, produced capital, human capital, financial capital, and social capital.

As global communities strive for a long-term post-COVID recovery, there is a rare chance to reconsider how we value nature. Preventing future pandemics requires recognizing the permanent ties that exist between humans and the natural environment. It is past time for a new statistic that takes into consideration several dimensions of national success as well as our most pressing global challenge—climate change. If we want to avoid irreversible damage, we must rethink our perceptions of economic success.

The Guidelines specify some permissible openings in

Phase 1: Gyms; big venues such as churches, theatres, and restaurants; and elective procedures subject to physical separation (eg, capacity constraints on the basis of a reduced percent occupancy). Schools, organized youth activities such as childcare, and pubs remain closed, and visits to elder living homes and hospitals are prohibited.

In Phase 2, the Guidelines urge that schools and organized youth activities be restored; bars be opened, subject to physical distance constraints; and nonessential travel be permitted. Individuals who are vulnerable should remain indoors. Physical separation can be relaxed for vulnerable persons.

In Phase 3, visits to senior homes and hospitals will be feasible, and bars will be able to operate with increased occupancy. In addition to continuing to fulfill requirements defined in the gating phase, Phase 1, and Phase 2, Phase 3 adds new requirements in all categories. These new standards could aid in avoiding retrogression at a time when the illness is widely seen as under control and applying limits may have become politically and socially problematic. This is also the stage at which political leaders must focus on the position of their state in respect to other states and/or nations, because this is the time when the primary risk to their jurisdiction will be exposed.

Spiritual Intelligence and Multidisciplinary Problems

Spiritual Intelligence:

Spiritual intelligence is the capacity to access higher meanings, values, enduring purposes, and unconscious elements of oneself and to incorporate these meanings, values, and purposes in order to live fuller and more creative lives.

Spiritual intelligence is a higher degree of intellect that awakens the traits and powers of the genuine self (or soul) in the form of wisdom, compassion, integrity, joy, love, creativity, peace, and empathy. Spiritual intelligence leads to a sense of

greater meaning and purpose, as well as advances in a wide range of key life and job abilities.

Mutual Trust and Cordial Relation

Mutual trust refers to the belief that each party will fulfill its duties and act in accordance with expectations. Trust is at the core of today's knowledge economy. With trust as a basis, organizations or groups within a company may share their know-how to accomplish outcomes. Trust frees partners to adapt to the unexpected jointly, which is vital for cordial relations and

Innovation. Trust also fosters excitement, enabling the highest performance from everyone. Building trust between organizations is all-encompassing; it covers people, politics, priorities, culture, harmony, and structures.

Trust and relationships have a direct relationship with one another, characterized by warm and frequently hearty friendship, favor, or approbation a cordial welcome, politely pleasant and friendly two nations having cordial ties truly or profoundly felt a cordial disdain for each other.

Recovery of Economic Problems

Economic efficiency can be achieved only when individuals are in a position to function at their best and to think quietly and freely in order to devise strategies for goal attainment, as well as a sufficient degree of motivation and inspiration to execute on the plan.

Recovery is somewhat more difficult than achievement, just like obtaining a position is not as tough as maintaining that position in the future.

Here, the researcher is discussing economic recovery, which means that it is harder to achieve that again after getting lost, and it becomes more and more difficult when the entire surrounding is in the same pain, stress, and difficult challenging situation, and no one is there to cooperate to others because of self- pain, and the entire surrounding is full of needy and crying situation due to pandemic.

To perform better and recover from an enormously painful situation, everyone needs mutual cordial relations, mutual trust and cooperation, and a positive democratic atmosphere in which to understand each other and freely share their problems, assuming a positive response leading to harmony at each level of human values. These harmonial stages can be achieved by spiritual intelligence.

As we all know, Spiritual Intelligence is a blend of intellectual and emotional quotients. As a result, when we are emotionally intelligent with a positive

mentality and mindfulness, our intellectuality may perform well in terms of goal attainment.

Spiritually intelligent persons have a greater ability to motivate themselves, therefore insulating themselves from stress, worry, confusion, and reliance.

Spiritual intelligence fosters a positive environment for oneself, one's family, society, and the environment. All that is required is for us to unite as spiritually aware people.

Spiritual Intelligence assists in performing collaboratively and empathetically by living in peace. Studies have also shown that there is a substantial positive relationship between spiritual intelligence and empathy.

Spiritual Intelligence is a wonderful tool for relieving stress in one's own life as well as in the lives of others.

We discovered that individuals who work with Spiritual Intelligence can appreciate their lives with all of their ups and downs as a part of life and constantly keep themselves happy, which should be everyone's primary aim in life regardless of the scenario.

Happiness is brought about by Spiritual Intelligence, and Happiness has total access to achieving success and prosperity. To discover success, it is vital to first explore oneself with the assistance of Spiritual Intelligence, which may be learned through practice.

Findings and Suggestions:

Researchers discover a positive relationship between Spiritual Intelligence and empathy in other available studies, which is why if organizations follow through on educating about Spiritual Intelligence through concerned Workshops, Faculty Development Programs, Conferences, Seminars, Guest Lectures, or from good Speakers, etc., Everyone will be able to perform better to achieve goals in a more effective and efficient way with developing art of living in all four stages as segregated as self, family, society, environment and surroundings. So that life will be simple, structured, tranquil, and exciting, as is required after a pandemic.

Conclusion:

Non-pharmaceutical measures will form the foundation of the COVID-19 management toolset in the absence of a widely distributed vaccination. One of the

greatest concerns in decision making and public communication is that the process of reopening economies and societies is viewed as unidirectional, with a predictable march toward openness on predetermined dates and no chance of reversal. That is problematic since local conditions will undoubtedly result in varying speeds and, in many cases, setbacks. It will be critical to share current information and effective communication with policymakers and the general public about the likelihood of setbacks in various areas, the need for caution in moving forward, and the disparity between the thresholds for reopening businesses and vulnerable individuals returning to in-person socioeconomic activity and social interaction.

It is not for us to provide the specific data sources and methods that will operate in various locations, given the very varying environments. Rather, we wish to stress the importance of focusing on relevant actions and activities at each level, as well as building cohesive data

sources. Transparent, defensible analysis that explains the basis for judgments will be more trustworthy and may be less confusing to the public. The need to change policies at each level and convey the reasons behind those adaptations with reference of spiritual intelligence will be critical to establishing more effective recovery management.

The analysts' purpose is to help decision makers identify continuing issues that demand urgent attention as well as requirements for continued development toward open social and economic activities. We hope that by implementing this process, policymakers will be able to not only identify the types of parameters and activities that will inform their policymaking, but also understand what issues and indicators will indicate the need for pauses or resets in the transition toward a normal level of activity—both the removal of unusual restrictions and the development of public confidence that working and socializing as before are not overly risky. This is a deliberate process, and socioeconomic recovery from the disturbances caused by COVID-19 will continue long after the epidemic has passed.

However, policies and actions implemented in the early phases of pandemic response can have a significant impact on future local and national fates in the months and years ahead.

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