

INDIA @75 : PRESIDENCY OF G20 (AN ECONOMIC PERSPECTIVE)



EDITORS

Rashmi Dwivedi

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Ajay Kumar Chaturvedi

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National Press Associates

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PREFACE

The Subject matter selected by the editors for this book is enticing and enthralling “India@75: presidency of G20”. The G20 is an international forum that brings together the world’s 20 leading industrialized and emerging economies. The group accounts for 85% of world GDP and two third of its population. Effective global governance like the G20 is essential as rising powers seek opportunities to influence and contribute to the global order.

The year 2023 the initial year of ‘*AMRIT KAL*’ as advocated by our Prime Minister, our country have the opportunity to preside the G20 group which is grounded in the theme of ‘Vasudhaiva Kutumakam’ or ‘One Earth one Family One Future’, which underlines the message of equitable growth and shared future for all.

Rising challenges of global economic scenario in the post Covid-19 period demand a refocusing of worldwide discourse on people centric issues. The G20 presidency is an important opportunity for India to bring focus on issues of critical global importance, put forth its narratives on development and, as the fastest growing major economy, bring its strengths to bear on the G20 agenda.

One of the chapters in this book supports the idea of country’s G20 Sherpa Amitabh Kant statement that “India’s presidency of G20 will spell out the narrative that going digital and green can reshape the future of the world.”

As India’s G20 agenda is inclusive, ambitious, action oriented and decisive, this book in your hands is an attempt to present the clear picture of various challenge and opportunities in the context of India’s G20 presidency in the era of ‘*AMRIT KAL*’.

The learned scholars have dissected the topic thread- bare and presented meaningful, practical and action oriented solutions to the problems the world is facing and the role India can act upon.

I am immensely indebted to the learned scholars, young and energetic editors especially Dr. Dinesh Yadav, Assistant professor from Lucknow University, UP and Dr Rashmi Dwivedi, Assistant professor from IEC University, HP for proving me opportunity to be a part of this great endeavors of these young mind.

I do sincerely hope that this book will be very useful for researchers, academic, planners, policy makers and those who are concerned with vibrant Indian economy and society with larger global participation.

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ACKNOWLEDGEMENT

Economic integration is the process through which two or more countries in a large geographic region remove various trade obstacles in order to promote or defend a number of economic objectives. G20 is one of them. The Group of Twenty (G20) is the most important platform for global economic cooperation. Regarding all significant worldwide economic concerns, it is crucial in forming and enhancing global governance. The G20 was established in 1999 as a platform for the Finance Ministers and Central Bank Governors to talk about international economic and financial concerns in the wake of the Asian financial crisis. The idea of writing this book comes when India assumed the Presidency of G20 (the Group of 20 countries comprising 19 large economies and the European Union) for 2023 from Indonesia on 1st December, 2022. While accepting this responsibility, PM Narendra Modi said that India's G20 presidency will be "inclusive, ambitious, decisive and action-oriented." On the other hand, the Government of India decided to celebrate the 75 years of Independence of India, with great excitement and tribute to freedom fighters. They decided to do various programs and the government named the celebration as 'Azadi Ka Amrit Mahotsav'. Amrit Mahotsav meaning Nectar of grand celebration which signifies the 75 years of India's independence from British Raj. Therefore we decided to gather informations about the subject, with *the idea of writing* and publishing an edited book entitled "**India @ 75: Presidency of G-20 (An Economic Perspective)**" in a few months. First and foremost we extend our heartfelt gratitude to all the individuals who contributed their time, expertise, and support in bringing this book to fruition. Their dedication and collaboration have been invaluable throughout this journey.

We express our deepest appreciation to our fellow writers and co-authors for their unwavering commitment, who have generously encouraged and support to this project. Their unique perspectives and insights have enriched the content and helped shape the narrative. Our sincere thanks to the editors & reviewers who meticulously reviewed every page, ensuring clarity, coherence, and accuracy in our message. Their keen eye for detail has undoubtedly enhanced the quality of this book. We would like to extend our gratitude from the depth of our heart to *Team, National Press Associates* for their technical support, encouragements and bring it at success as in real frame.

Concluding our acknowledgement with a sincere thanks to all those who have directly or indirectly contributed to prepare this project. Last but not the least, we wish to thank God for giving us such a wonderful environment and strength, to complete this edited book.

Editors
Rashmi Dwivedi
Dinesh Yadav
Ajay Kumar Chaturvedi
Sapna Gupta

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G20- WOMEN20 (W20): WOMEN-LED DEVELOPMENT IN INDIA

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ABSTRACT

Through various initiatives and policies, the government aims to empower women economically, improve access to education and health care, increase political representation, and promote gender equality and security.

In not even single country gender equality has been achieved in practice, and also there is no single country where equal work for equal pay is given.

Worse, nine out of ten countries – despite India as well as all 192 UN member states formally committing to promoting gender equality and empowering women and girls in 2015 – have laws against women. Let's restrict the economic condition of discriminate against the ability to be active.

Yet the business case for rapid growth is compelling. Recent research suggests that \$28 trillion could be added to the global economy by 2025 if all countries bridged the gender gap.

International forums such as the G20 Women20 (W20) are attempting to address these issues by establishing dialogue experts and business leaders are stepping up to help accelerate progress. Why is economic empowerment of women a social, economic and business necessity? This chapter seeks to explain why the G20-W20 women-led development process can make a practical difference in improving global well-being not only for women, but also for their families, communities and countries.

Keywords: Women Empowerment, Gender Equality, G20, Women20 (W20)

INTRODUCTION

Government of India recommends action in five priority areas at W20

Climate Change and gender

Climate change and gender are inextricably linked and women must be at the center of climate justice. All climate-related policies must adopt an inclusive, equitable and equitable gender approach.

Entrepreneurship

Women entrepreneurs play a vital role in driving the national economy by boosting GDP growth, creating jobs and providing essential goods and services. Women, especially in rural and indigenous areas, face a number of legal, policy, procedural, regulatory, social and social barriers, as well as lack of access to capital and financial services.

Gender Digital Divide

The digital gender gap in access, skills, leadership and research is driven by complex social, economic and cultural factors, resulting in women and girls experiencing barriers to accessing and using digital technologies. Closing this gap will result in significant social and economic gains and increase in livelihoods and GDP, both now and for future generations. G20 leaders must commit to women's full participation as key actors and decision-makers in the digital economy.

Grassroots Leadership

It is important for women to be leaders, to lead development and act as agents of change, including from the grassroots, and it is important for society to adopt that mindset and the systemic change required of women to harness that leadership. As such, governments, organizations and individuals must promote grassroots leadership of women.

EDUCATION, SKILL DEVELOPMENT, & LABOUR MARKET PARTICIPATION

Education is a human right. Educating girls and women is essential for a peaceful, just and prosperous society. Women's economic contribution should be properly recognized, rewarded and supported through measures that ensure decent and predictable work, gender-equal sharing of care responsibilities, and strengthening public social infrastructure and Promote guarantees of freedom from gender-based violence.

Through various initiatives and policies, the government aims to empower women economically like Women as Architects: In this vision, the women have been reimagined as architects of India's progress and development, rather than being passive recipients of the fruits of development.

Some Schemes also Empowering Women Indirectly: Besides various women-centered schemes, other schemes such as Pradhan Mantri Awas Yojana are also empowering women as the house is given in the name of Woman of the Household.

A house in the name of a woman means the ownership of her in an asset which makes a woman economically empowered.

Also, during the covid-19 pandemic, under the Pradhan Mantri Jan Dhan Yojana (PMJDY), an amount of Rs. 500/- per month for three months (April' 20 to June' 20), was credited to the accounts of women account holders.

PRESENT SCENARIO OF WOMEN IN EMPLOYMENT

UNDP Findings: The UNDP in its latest report 2022 for Gender Inequality has noted the following:

Unpaid labor: On average, women spend 2.4 hours more per day than men on unpaid care and domestic work.

Among people participating in the paid economy, women spend an average of four hours more per day than men on paid and unpaid work combined.

Effect of Covid: Women have been hit harder than men by the pandemic, losing income and leaving the labour market at a greater rate.

Table: 1 Government Initiatives for Women Empowerment in various dimensions

In Panchayats	
1.	Mahila Sabhas in Gram Panchayat
2.	Rashtriya Gram Swaraj Abhiyan (RGSA)
3.	Panchayat Mahila Evam Yuva Shakti Abhiyan (PMEYSA)
▪ In Education:	
4.	Vigyan Jyoti Scheme
5.	GATI Scheme
6.	KIRAN Scheme
7.	Beti Bachao Beti Padhao Scheme
▪ In Entrepreneurship:	
8.	Mahila e-haat
9.	Mahila Bank
10.	Mahila Coir Yojana
11.	Women Entrepreneurship Platform (WEP)
12.	Support to Training and Employment Programme for Women (STEP) Scheme
▪ Other Initiatives:	
13.	National Creche Scheme
14.	One Stop Centre Scheme
15.	Scheme for Adolescent Girls (SAG) across the country

ARGUMENT

1. **Maintaining the Education v/s Employment Ratio:** It needs to be assured that the women education which is being subsidised very heavily is actually put to use for the country. The remaining share of the women, which is educated and skilled but not participating in the labour force, should also be able to utilise its talent and contribute to the GDP of the country.

2. **Encouraging Women Entrepreneurship:** Women shall not only be the seekers but also the creators of job opportunities. Entrepreneurship among women could transform India's economy and society by creating jobs, fuelling innovation, and furthering investment in health and education.
3. **Lesser Labour Force Participation:** Data from the National Sample Survey Office (NSSO) has shown that education and employment have a U-shaped relationship (a rise and subsequent decline in employment with the rise in education levels).
4. **Women with Families:** A large number of women often drop out of their jobs to get married and have a family and later on find it difficult to come back and continue their job. They are seen as an 'unreliable' member of the company.
5. **Societal Pressure:** Generally there is a fear of women being stigmatized by the community that might see their work as a marker of low status, i.e. the inability of the husband, the main breadwinner, to provide for the family.
6. **Prevalence of Informal Work:** In the informal sector in India, most occupations dominated by women are undervalued and underpaid.

STEPS TO BE TAKEN

1. **Redesigning the Workplaces:** There is a need to rethink the way the workplaces are designed. It needs not to be essentially a 40-hours-a-week job or a two hour commute to keep a woman in the workforce.
2. **Bringing Women in Leadership Role:** Subdued gender participation emanates from social-economic issues, which can be treated by bringing behavioural change. This can be changed if more women are given leadership positions.
3. **Changing the Mindset:** Girls, just like male children, should be asked their dreams, aims, aspirations in family as well as schools. The idea that 'their dreams and career are as important as that of a male' must be instilled in the minds of girls right from the beginning.
4. **Recognizing Invisible Work:** There is a need to invest significantly in the care economy and social protection, and redefine Gross Domestic Product to make work in the home visible and counted. The concept of Temporary Basic Income introduced by UNDP can prove as a headstart to other similar initiatives.
5. **Providing Small Necessities is Empowerment too:** Not just education, job and entrepreneurship lead to women empowerment but also providing basic and other small necessities is an empowerment itself. A woman who is educated and has worked at places with these basic necessities provided is quite likely to ensure these facilities for the future generations she will be in touch with.

CONCLUSION

Women empowerment is a starkly long journey but that doesn't imply that it is not worth the efforts. The fruits of women empowerment will require time to ripen and collaborative efforts but all for nothing but a greater good.

The ripple effects of empowering women are undeniable as an educated and empowered woman will ensure education and empowerment for future generations.

Various factors including socio-cultural, educational, economic and political are responsible for the ongoing gender gap in some G20 countries like India (developing nation). For real empowerment, there is a need for strong socio-economic, political and legal measures free from discriminatory policies for gender promotion. Equality in various fields. At least fifteen G20 countries have some form of discriminatory law restricting women's participation in economic activities in the formal sector (Dutkiewicz, M. and Ellis, A., 2018).

In this context, the establishment of the W20 for Women Empowerment, a significant initiative of the G20, has created immense opportunities for women to establish themselves in a world dominated by men. This

chapter clearly shows that the Government of India has taken many more steps for women led development in India

In addition to these, the Government of India and other governments of these G20 countries should work effectively in close partnership with public, private organizations and civil society organizations to bring about significant improvements in the socio-economic conditions of women. It also needs to be emphasized here that the results achieved so far are the result of positive initiatives.

Women empowerment is a gradual process and cannot be achieved overnight. Because most developing countries like India have a culture of rigidity that stifles women-led development, eventually, it will have to change the overall perception about those at the bottom of the pyramid.

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INDIA'S GLOBAL VISION FOR G20 AND DEVELOPMENT

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ABSTRACT

New India inspired by the concept of One Earth One Family One Future is working for Global welfare. The Indian path to global welfare is imbued with the spirit of strong, capable and self-reliance. India, which follows the concept of Vasudhaiva Kutumbakam, has started working as the chair of the G-20. India is seeing this opportunity as a new responsibility and the growing trust of the world towards itself. While assessing the present successes of India, hope is being expressed for the future. Nationwide programs with public participation are being organized across the country at more than two hundred places. The less developed and developing countries of the world are also looking forward to India after becoming the chairman of G-20. India is moving forward in the direction of making a consensus on such issues, which will ensure the happiness, peace and prosperity of the whole world.

In this research paper, an attempt has been made that how India, presiding over the G-20, will give its leadership in solving global problems, as well as how to keep its tradition, culture, heritage and important achievements in front of the world and show it as Indian hood. It is also suggested that how India can present its image at the global level in a very positive and powerful manner, find a proper solution to global curiosity and take advantage of new opportunities for tourism and economy here.

Keywords: G-20, 'Vasudhaiva Kutumbakam', Sarve Bhavantu Sukhinah, Atithi Devo Bhava, Indian Culture.

INTRODUCTION

“India stands ready to support any effort for a better environment and to further global wellness. Our track record speaks for itself.” - **Prime Minister Narendra Modi**

India has emerged as fastest growing country in the world. Over the years, India has the opportunity to lead many important forums. India has got a historic opportunity to lead the G-20 from 1st December 2022 after the United Nations Security Council and the Shanghai Cooperation Organisation. The chairmanship of G-20 shows that India's credibility and respect is increasing both in the world, imbued with the spirit of Vasudhaiva Kutumbakam. G-20 is a group of countries whose economic potential represents 85% of the world's GDP and 75% of trade. The G-20 group comprises two-thirds of the world's population. India maintains close relations with developed countries on one hand and at the same time understands the point of view of developing countries very well. It has always been the endeavor of India that there should not be any First World or Third World in the world. Rather One World India is working on the vision of bringing the whole world together for a common purpose for a better future. India's mantra in G-20 is One Earth One Family One World. These thoughts and values of India pave the way for world welfare. There is also a great opportunity for India to show its guest the tradition of Devo Bhava in front of the G-20 group. Events related to G-20 Along with Delhi, programs are being organized in different states of the country. Each state of India has its own characteristics, its own heritage, its own culture, its own beauty and its own uniqueness. Global curiosity and attraction towards India has also brought opportunities for tourism and local economy.

HEALTHY WORLD VISION OF INDIA

In the meetings of the G-20 Health Working Group, India has put forward its resolve vision towards a global health infrastructure with the mantra 'Sarve Bhavantu Sukhin: Sarve Santu Niramaya, Sarve Bhadrani Pashyantu Ma Kashchid Dukh Bhagbhavet'. G-20 also has the motto 'One Earth, One Family, One Future' which is derived from the concept of 'Vasudhaiva Kutumbakam'. The COVID-19 pandemic has shaken the health infrastructure of all countries. India has a vision to make globalization more human-centred by keeping the core objective of the G-20 presidency as 'healing, harmony and hope' with universal health a priority. Along with strengthening

the global health emergency framework, India is also integrating disaster preparedness. Looking at such future challenges, the pharmaceutical sector is creating equal access to quality vaccines, treatments and diagnostics. Indian generic medicines have an important place in the whole world. In FY2022, India has supplied pharma products worth \$24.47 billion to 200 countries. The whole world has also appreciated India's role in removing the disparity of life saving vaccines. Through 'Vaccine Maitri', India had given Covid vaccine to more than 100 countries in the most difficult times. India supplies affordable HIV drugs and anti-TB generic drugs to many low- and middle-income countries. India is trying to create a favourable framework for clinical tests, research, development assistance and affordable medical solutions for them. With the collective efforts of the G-20 members, India is creating an ecosystem that provides a level-playing field for low-middle income countries. India's chairmanship of the G-20 has also provided a platform to present a healthy vision of a 'Healthy World'.

G20 TO GLOBAL WELFARE

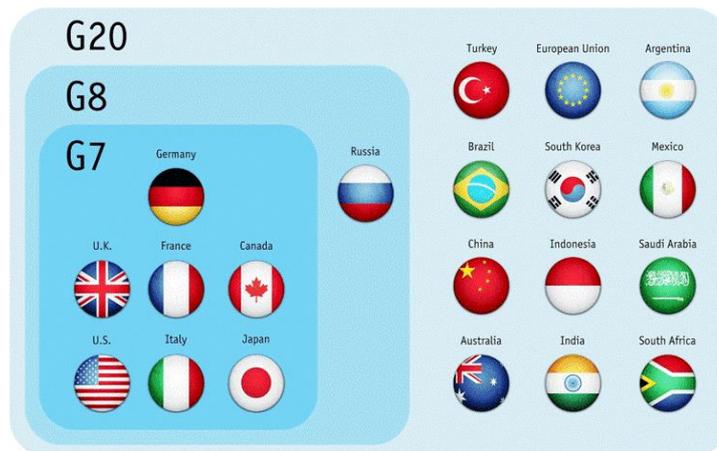
With the concept of One Earth, One Family, One Future, New India is presenting the way to Global path. The new path which is full of spirit of strong, capable, capable and self-reliance. The chairmanship of G-20 is also a symbol of the world's faith in India. With the concept of Vasudhaiva Kutumbakam, as the chairperson of G-20, India has also started working for global happiness, peace and prosperity. While assessing the present successes of India, hope is being expressed for the future. In such a situation, it is the responsibility of the countrymen to show these hopes by doing much better than the expectations. When India is chairing the G-20, this event is a representation of the strength and potential of Indians for us. That's why public participation programs are being organized nationwide at more than 200 places. The central government is motivating the common people to play their role for the welfare of the world; How India would exercise its leadership to solve the current global concerns, as well as how it would showcase its history, culture, legacy, and significant accomplishments to the rest of the world.

G-20 FORUM FOR ECONOMIC COOPERATION

The G-20 is a major forum for international economic cooperation, which plays an important role in globalizing all international economic issues. The G20 was established in 1999 after the Asian financial crisis as a forum for finance ministers and central bank governors to discuss global economic and financial issues in cooperation with developed and developing economies. After the global economic and financial crisis of 2007 and 2009, it was renamed the Major Forum for International Economic Cooperation, elevated to the level of Head of Government. The G-20 initially focused largely on macroeconomic issues. It later expanded to include opposition to trade, climate change, sustainable development, health, agriculture, energy, environment, and corruption, among others.

G-20 Member Countries

Apart from the member countries, many other countries are invited as guests in the G-20 summit. The G-20 includes -



Guest Countries are-



The 18th Summit of G-20 Heads of State will be held in New Delhi on 09-10 September 2023. In this, commitment will be expressed towards the priorities which were discussed and agreed during the related ministerial meeting and working group meetings.

PROCEDURE OF G-20

The G20 does not have a charter or a secretariat. The Presidency, aided by the countries holding the Presidency before and after it (Troika), is responsible for setting the agenda of each year’s Summit.



WHAT ARE G20 AGENDA?

If we pay close attention, we will see that the G20 was originally intended to be a forum for economic cooperation with a primary focus on broad macroeconomic issues. However, as time went on and the need for more was recognised, the G20 expanded its agenda to include trade, climate change, sustainable development, health, agriculture, energy, environment, and anti-corruption. In order for the G20 to discuss and benefit its members, the agenda and mandate now take into account the demands of the present.

Figure: 1 G20 Agenda



The G-20 president steers the organization's agenda for one year and hosts the summit. The G-20 has two parallel tracks – the Finance Track and the Sherpa Track. The finance minister and central bank governor lead the finance track while the Sherpa track is led by the Sherpa. Within these two tracks are thematic working groups consisting of the invited or guest countries with representatives from the relevant ministry and various international organizations. Sherpa oversee talks throughout the year. At the same time, discuss the agenda of the summit and coordinate the special work of the G-20. In addition there are participatory groups. These groups bring together civil society, parliamentarians, think tanks, women, youth, business and researchers from G20 countries. The G-20 group does not have a permanent secretariat. The president is supported by past and future presidents. During the presidency of India, this troika includes all the three developing countries namely Indonesia, India and Brazil respectively.

SHERPA TRACK

The word Sherpa is derived from the Nepali Sherpa. Sherpa acts as guides for climbers in the Himalayas. 13 Working Groups and 2 Initiatives will meet under the chairmanship of India through the Sherpa Track to discuss priorities and submit recommendations. As part of the G-20's decision-making process, working groups consisting of experts and relevant ministries take the lead in in-depth analysis of a range of internationally relevant issues. This includes areas such as agriculture, prevention of corruption, culture, digital economy, disaster risk reduction, development, education, employment, environment-climate stability, energy, health, trade, investment. This time India's G-20 Sherpa is Amitabh Kant. Through various working groups, the Sherpa create an atmosphere in favour of the interests of their country. Although the position of the G-20 Sherpa is influential, they do not have negotiating powers. Only one Sherpa from each member country can attend the G-20 summit, which is appointed by the government. A diplomat of the country, a leader with political experience or any senior government official can be appointed to this post.

FINANCIAL TRACK

The G20 finance track discusses global macroeconomic issues through meetings of finance ministers and central bank governors, deputy heads of central banks, and various working groups. Some of the key issues dealt with by the Finance track are: Global economic outlook and monitoring of global economic risks, Reforms for a more and resilient global financial structure. G-20 fast track investments in international taxation, quality infrastructure financing, long-term financing, financial inclusion, financial sector reforms, future health, financing for emergencies, pandemic prevention, preparedness and response.

SIGN OF CREDITABLE INDIA

India is moving towards development by leading the leading nations under the chairmanship of G-20. From here, the path of India's empowerment and world acceptance is being paved. India has reiterated its resolve to lead the world on the path of peace. By showing the way to the whole world to be happy, India itself is moving forward on it. May all the creatures of the earth be happy, that person and that nation can wish this, who considers that the whole Vasudha as a family. The one, who is generous, peace-loving and non-violent, crossing the narrow limits of his alien, is happy in the happiness of the living beings and sad in sorrow. This lofty ideology is the specialty of Indian culture and way of life. Vasudhaiva Kutubankam and Sarve Bhavantu Sukhinah have been announced from this ideology. The slogan of 'One Earth, One Family, One Future' will only pave the way for world welfare through the values and culture of India. The message of prosperity and progress is being received from the unity and harmony of the seven continents through the earth and the seven petals of the lotus seated on the lotus flower of the new logo. The image of India is constantly changing, even the superpowers of the world have started giving place to India, taking guidance from it, and they have started strengthening their policies. The opportunity of India chairing the G-20 is a sign of a new, auspicious and creditable India.

OPPORTUNITY FOR INDIA TO CHAIR G-20

India is poised to become a strong economic superpower of the world. Recently, leaving Britain behind, it has made a place in the world's five largest economy. Now India is behind only America, China, Japan and Germany. By becoming the welcoming land of the 20-G summit, India will give new dimensions to its strong and developed pride. It is estimated that by 2029 it will become the third largest economy in the world.

Whereas, by 2027, India is estimated to overtake Germany by 2029, Japan. India is preparing new land for food security, energy security and green energy, recognition of commercial skills and control of economic crimes. India is among those countries which are adopting electric vehicles at a very fast pace and investing in this direction. India has made unique achievements in subjects related to digital infrastructure, health and agriculture. Relations between Saudi Arabia and India are cordial. Apart from the trade of oil and gas, both countries are also closely related to strategic partnership and migrant workers.

INDIA'S CHALLENGES

There are also challenges before India. Russia-Ukraine war is causing energy and food crisis around the world. The fear of recession is haunting many countries of the world. Superpowers like America, Britain and China are also worried. Along with the challenges of trade, the crisis of climate change and pollution is also very big. Defence and trade relations have been very strong between India and Russia. During the meeting with Russian President Putin on the side lines of the G-20 summit in Indonesia, the Prime Minister of India had said that war is not the solution to any problem. Problems should be solved through dialogue. The manner in which the role of the United Nations has been negligible, the G-20 will also do the work of filling that void. The whole world is watching the pace at which India's economy is growing. Because India has the power to become the engine of growth of the world. India did not join any camp on the Russia-Ukraine war issue; rather it bought cheap oil from Russia without coming under pressure from America because India has to see the interests of its people first. America and its allies are bearing the brunt of the sanctions on Russia. It is the self-confidence and determination of India from where the world is getting strength to change its thinking and to take the world forward as one family.

CONCLUSION

Along with science, technology, technology, defence and space science, Indian philosophy, culture, life values, glorious traditions and strong economy are the centre of attraction of the world. It is the responsibility of India to show the world better and strengthen the spirit of Seva Paramodharma with its high educational standards by introducing the world to its civilization, culture, tradition. It is the responsibility of India to enrich the knowledge of the world with the wisdom of its thousands of year's old culture and the modernity contained in it and takes this opportunity as a challenge to introduce the world to the new India. The leadership of G-20 in this Amritkal of independence is going to increase pride and glory for every Indian. Representing rich knowledge, tradition and culture, India has found a golden opportunity to establish itself on the global stage. Be it environmental sensitivity or sustainable development, India has solutions to the challenges. Apart from becoming a big power in digital technology, India is also presenting an example to the world. India is the fifth largest economy in the world and will become the third largest economy in the next few years. For this to happen soon, the policy makers have to be alert while fulfilling their responsibilities. For India's stature and its prestige to continue to grow, the public will also have to play its part. With the presidency of G-20, India will emerge as a strong-prosperous self-reliant nation on the global stage.

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“A STUDY OF BENEFITS OF TRAINING AND DEVELOPMENT IN INDIAN ECONOMY”

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ABSTRACT

Training and Development is energetic to any corporate for continued development and acts as a continuous process for refining the ability and capability of the employees to meet the current and future recitals. Employees are esteemed resource (asset) of the organization. Organizations find it very tough to stay competitive and adjust to the environment in recent universal economy. As such importance of employee development program is growing for organizations those pursuing a sustainable competitive advantage among competitors. Truly success and failure of organization totally depends of their employees because employees are the important asset of an organization. It provides a competitive assistance at any level: individual, organizational, and society. Today Most of the organizations are supporting large amount on employee training and development programs. Training programs are very much helpful for companies to highlight on expertise, knowledge as well as ability of employees. It involves individual or employee and complete growth of the employee as when employees of the organization would develop the organization, organization would be more succeeded and the employee performance would increase. The objective of this paper is to study benefits related with training and development at different levels.

Keywords: Training and Development, Developing Economy, Organization, Employee Performance

INTRODUCTION

“Skilling your faculty is good for your business organization and good for your manpower”

In a developing economy, training and development are seemly a trustworthy source of continuous competitive advantage where uncertainty is the only certainty. Offering training is becoming fundamental capital and the trigger of development. All the different levels workers will need to be longstanding learners, adapting continuously to changed opportunities, work practices, business models and forms of economic and social organization.

New ERA of customer orientation has transformed market condition. So for sustainable growth firms constantly need to improve its product and service mix, managerial acting to increase productivity. These conditions recognize the human capital as the strategic resource of every organization. Employee training is becoming an optimal answer to complex business challenges, and the management of human capital is taking central role in modern management. Training has been successfully used to reduce mistake in such high-risk settings as emergency rooms, aggregation, and the military. However, training is also important components in more formulaic organizations.

TRAINING

Refers to planned efforts by a company to facilitate employee’s learning of job related competencies. Training is seen as one of several possible solutions to improved performance. Training and Development is a subsystem of a business organization which accentuate on the betterment of the performance of individuals and groups. Training is an educational activity which involves the sharpening of skills, thought, changing of attitude and gaining more knowledge to improve the performance of the employees. Good & economical training of employees helps in their skills & knowledge development, which finally helps a company improve. Training is about deliberate where you are in the present and after some time where will you reach with your knowledge. By training, people can acquire new information, new epistemology and refresh their existent knowledge and

skills. Due to this there is much improvement and adds up the powerfulness at work. It requires that they should have the ability to manage themselves, the ability of problem solving, and decision making, as well as continuing learning consciousness.

DEVELOPMENT

Employee development are planned to meet particular objectives, which contribute to both employee and organizational effectiveness. There are various activities in the process of management development. These activities includes critical review organizational objectives, evaluation of the organization’s current management resources, deciding individual needs, designed and implementation development programs and evaluation of the effectiveness of these programs and measurement of the impact of training on participants quality of work life. In easy words, it can be defined the following formula.

Employee Development = Employee Education + Employee Skills + Training Effectiveness + Employee Quality of work life.

Research Methodology and Objectives of the Study of My Work are-

1. To critical analyses how training and development helps in a developing economy.
2. To critical analyses the current status of training in India.
3. To critical analyses the benefits of training at different levels.

In this paper the research is exploratory in nature. It is based on the secondary data providing from journals, magazines, articles, media reports, Internets, websites, handbooks etc. Looking for into requirements of the objectives of the survey the research design engaged for the study is of descriptive type. Keeping in view of the set objectives, this research design was native to have greater quality and in depth analysis of the research study. Available secondary data was encompassing used for the study. Various news, articles, books and websites were used which were enumerated and recorded.

CURRENT SCENARIO OF TRAINING IN DEVELOPING ECONOMIC SYSTEM LIKE INDIA

Today Era many of the business organizations are cladding problems of sufficient budgets for purchasing various types of training programs for their workers from consulting firms or other business consultants or outsourcing organizations like MafoiRanstad. In India Most of the organizations spent US \$1207 per employee on training and development in 2022 on an average, according to learning and development trends in India by the American Society for training and development (ASTD) and Harward Business Publishing (HBP).

Figure: 1 Training Expenditures per Learner 2020-2022



Source: Trainingmag

Corporate Training Initiatives in INDIA

In the past years many organizations have made tremendous progress in terms of training initiatives.

1. Due to the increase in competition and entry of many multinational companies in India, which has forced them to look for various alternate to develop organizational effectiveness, Training is considered as a retention tool rather than cost to the organization.
2. Not only organizations increased their investiture in training and development practices, but they have also systematised training policies and activities right from the training need analysis to training evaluation and feedback. The training system in the indian society has been perverted to create a smarter manpower and take the best results.
3. The optimum utilization of human resource management is the target of any business organization and training is an important tool to increase business outputs. Four organizations from India were able to get entry in the winning list of 40 best organizations. These were: Reliance industries Limited, Nagothane manufacturing division (2,157 employees), Infosys Technologies Limited (79,016 employees), Wipro Limited (60,000 employees) and ICICI Bank Limited (40,880 employees). This clearly reflects that these organizations working in India are very serious about their learning and development function.

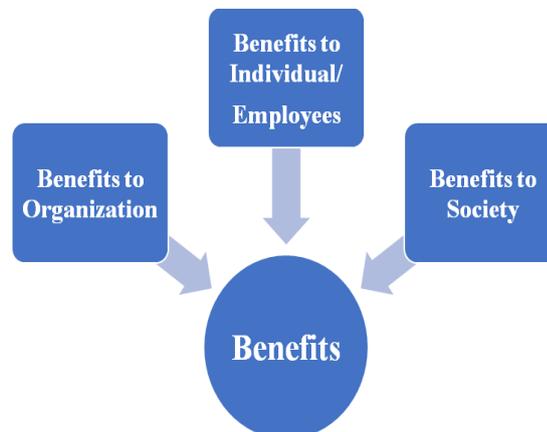
In India, employment growth is almost entirely assembled in the informal economy, where more than 90 per cent of India's employees are employed at low levels of productivity and income. Half of the population over the age of 25 has no education. Four out of five new entrants to the workforce have never had any Opportunity for skills training and development. While registration in technical education institutions has increased (from 2.1 million in 2000 to 3.8 million in 2005), there is a very high drop-out rate in these organizations. There are shortages of teaching faculty in engineering colleges.

To overcome these challenges, India adopted a National Skills Development Policy in 2009. Its main aim is to empower all individuals through improved skills, knowledge, ability and internationally recognized qualifications to give them access to decent employment and to promote inclusive national and economy growth.

Benefits of Training and Development for the Banking Sector

Benefits of Training and Development are not only for business organizations but for their employees also. These can be classified as under:

Figure: 2 Dimensions of Benefits of Training and Development for the Banking



Source: Compiled by Researcher

BENEFITS TO INDIVIDUAL/EMPLOYEE

1. **Competency Function:** This is one of the simplest method of assembling the strengths and weaknesses of a employees in business organization. It is all about distinguishing a person's job skills, abilities and strengths in areas like leadership, cooperation and decision making during training sessions. A number of large organizations may acquire some form of this technique to understand how best they can use each employee.
2. **Improvement in Employee Satisfaction:** Training and development improves organization's reliability for the simple ground that employees realize their organization is spending for their future and career (Rosenwald 2000). Organizations that which are providing training and development programs for their employees are achieving high level of employee satisfaction as well as low employee turnover (Wagner 2000).
3. **Improvement in Career Competencies:** Employees do get lot of gain from employee training and development program. Employees also realize that training program can be directed to superior duties and higher remuneration (Fenn 1999). Training is a means of maintaining, satisfying and increasing talent and competencies. Assisting and helping employees to improve their skills and knowledge to manage with future requirements leads to job satisfaction.
4. **Training as a Motivational Tool:** Training is proved as a tool to motivate employees who further result into best or improved performance. Motivation emphatically goes up when group know that they can move up the ladder in a business organization. Treating employees like "Human capital" by using motivation policies and techniques of management science could help achieve objectives of management like growing efficiency, enhancing productivity, boosting quality and morale. When employees believe that they are valued and the company is willing to invest in their development, self-confidence and motivation are the results.
5. **Increase in Employee Performance:** Training positively effects on employee performance. Employees who are trained need lesser supervision than those who are not trained. A trainee during training period acquires new knowledge, attitude, skills, abilities and satisfactorily applies them in job situation. Training is point as a way to create confidence among employees so that they can perform the works without any obstacle with all efficiency and effectiveness.

BENEFITS TO ORGANIZATION

1. **Market Growth:** Training and development programs are helping to face the competition and changing stimulating environment. Training programs are generally tailored to suit to the conditions of each individual and through behavioral changes which is very much required for business success, market share and also help increase revenue growth. Training will also furnish the client with tools to develop deeper more significant bond and relationship with the organization and also with other groups in society.
2. **Training as Helpful mechanics in Competitive Advantage:** Today's companies have accomplished that to survive and sustain in today's competitive business surroundings, quality of employees and people working for organization make all the difference. Training also develops skills and abilities for full fledgling performance, career advancement and growth which lead to increased firms performance in terms of productivity and profitability.
3. **Employee Retentiveness:** High employee turnover may be a serious problem to business organizations existence. Therefore, major benefits and importance of training is that it reduces employees turnover and also helps organization to retain its employees. Also training contributes to employee stability in at least two ways. Firstly employees become efficient after undergoing training and secondly efficient employees contribute to the growth of organization as growth provide stability to the workforce. By investing in suitable training for employees, they will feel and develop a greater sense of self worth as they become much more valuable to organization. Therefore, Training is a platform that can guide to employee satisfaction and higher retention rate for any business organization.

4. **Improvement in organizational image:** Better image in the market will be for those business organizations that provide training to their employees. When employees are trained and they have a feel that they can proceed to grow with an organization, it gives business a better image, individuality in everyone's eye. It is a well-known fact that business will become known if it cares about its employees and ensures that they are not only happy in their job but overall happy in their personal life as well.

BENEFITS TO SOCIETY

1. **Helpful to Global Talent Mobility:** Many still focus on driving global talent quality, aiming at efficient movement of high performers around the world. Long term, sustained growth in new markets is likely to rely on successfully identifying, engaging, developing and retaining local talent. "Further progress in the commercial sphere can only come through engagement in the process of globalization and through the development of national human resources via training, education, and research.
2. **Optimal utilization of Available Resources:** Training and development helps us to focus on scientific and technical innovation through research and development which will help to make optimum utilization of available resources.
3. **Achievement of Societal Prosperity:** People centered approach assumes that investment in human capital is fundamental for achieving societal prosperity. Creating a society of skilled, flexible and creative people, with opportunities for quality education and life-long learning available to all, and a flexible and appropriate mix of public and private funding.
4. **Helpful in Sustaining Economic Growth:** "The most competitive and dynamic knowledge-based economy in the world, capable of sustaining economic growth with more and better jobs and greater social cohesion"
5. **Helpful in Employment Generation:** Today young people with low skill levels are finding it hard to secure jobs. With the help training people will become more skilled and competent, leading to employment generation.
6. **Helpful in Higher Standard of Living:** Higher levels of training attainment lead to a more skilled and productive workforce, producing more efficiently a higher standard of goods and services, which in order forms the basis for faster economic growth and rising living standards.
7. **Helpful in Equity and Inclusive Growth:** Training enhance to greater social equality between women and men. As women face widespread barriers in seeking to achieve the goal of equality of opportunity and treatment in employment. Gaining new and higher-level skills can both help more women to enter the employment market and contribute to lowering gender disparities in the employment market.
8. **Helpful to minority and Disabled Sector:** by providing proper training to minority and disabled employees will help them to come at par. Training and Development will improve their Knowledge, skills and abilities.
9. **To develop second carrier/ Second Career" program:** People who work after a break can be recruited as (Re-) training displaced workers. Laid-off workers with training in occupations deemed to be in high demand as in order to better meet local needs as well as to avoid duplication of effort across levels of government. Programs already in use with proven track records were expanded to support workers training for new jobs.
10. **Impact on GDP:** GDP and employment growth shift closely together. Training to workforce in specific skills not only provides them with access out of poverty, but contribute to the growth of national GDP.
11. **Other Benefits:** Investment in education and training is important, not only for its direct contribution to growth but also for the indirect externalities that creates, as these eventually feed back into the

growth process. Extending benefits are not only economic. They also include improvements to the environment, better health and reduced crime rates.

CONCLUSION

In this study we observe that Training leads to benefits for both individuals and organization. By analyzing various literatures we find that benefits deviate from individuals and organizational performance. Training more significantly is not only cultivating work knowledge, abilities and skills, developing productivity for production and services but it rather impacts on qualifying of employee's behaviour and attitude for performing work. The successfulness and endurance of organizations become explicitly dependent and depend on intellectual capacity of its employees and also their skills and ability to change and adjust to dynamic business environment. Employees are precious asset of business organizations. Training improves and accelerates individual and societal growth as well as increases employee morale and their satisfaction, organizational productivity and service quality. Organizations today believe and understand that training helps them to remain competitive by continuously educating their workforce. Organizations also understand that by investing in their employees they can return better results. Thus a sustained economy relies on equality of training imparted to convert a employee into trained employee which is key to boost growth.

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TECHNOLOGICAL TRANSFORMATION AND DIGITAL PUBLIC INFRASTRUCTURE

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ABSTRACT

This chapter presents an in-depth analysis of India's role as the President of the G20 from an economic perspective, with a special emphasis on the country's technological transformation and the development of its digital public infrastructure. In the 75 years since its independence, India has made significant strides in technology and digitization, heavily influencing its economic trajectory. By comparing India's digital infrastructure with other G20 countries and through a detailed examination of its role in the G20 economies, we explore how India's technological and digital transformation shapes its economic policies and global presence. Case studies of prominent Indian digital initiatives, such as Aadhaar, the Unified Payments Interface (UPI), and the Digital India Initiative, demonstrate the substantial economic impact of these projects. The chapter concludes with a forward-looking analysis of future trends and challenges, emphasizing how these may shape India's role in the G20.

Keywords: Digital India Initiative, Aadhaar, Unified Payments Interface (UPI), Global Economic Forum, Future Trends, Digital Era Challenges.

INTRODUCTION

1. In the three-quarters of a century since her independence, India has evolved from a nascent nation-state into an influential global player. Her journey, replete with challenges and triumphs, has been a testament to her resilience and adaptability. With a robust economy backed by a youthful demographic, India stands poised at the juncture of a transformative era, celebrating her 75th anniversary with a vision focused on the future.
2. One of the crowning achievements of India's global standing has been her Presidency of the G20, a consortium of 19 countries and the European Union, representing around 80% of the world's economic output. As President, India plays a pivotal role in steering discussions on global economic policy and shaping the direction of multilateral cooperation. In a world beset by complexities, India's Presidency is an opportunity to strengthen global economic governance and infuse it with a sense of inclusivity.
3. A critical lens to appraise India's role in the G20 is through an economic perspective. This approach necessitates an analysis of her economic strategies, policy orientations, and the systemic transformations shaping her economy. Of particular significance is the intersection of economic policies with the technological transformation and digital infrastructure, both of which are integral to India's developmental narrative.

LITERATURE REVIEW

The scholarly landscape concerning India's economic growth, technological transformation, and burgeoning digital public infrastructure offers a rich tapestry of varied perspectives and findings.

Starting with the economic overview, Panagariya (2008) examines India's post-independence economic history and its shift from a closed to an open economy. Kohli (2006) provides a more political view on the economy, highlighting the role of the state in India's economic growth. These works form the backdrop against which we explore India's rise to the G20 presidency.

Focusing on the technological aspect, Mazzucato and Penna (2016) shed light on the role of public and private sectors in driving technological change. Meanwhile, Arora and Bagde (2016) scrutinize the Indian context,

discussing the role of the government in promoting the software industry, which they consider as a crucial part of the technological revolution in India.

The concept of digital public infrastructure gains insight from Nandan Nilekani's writings (2020) in which he frames it as a new kind of public good that enables a wave of innovation and provides a universal digital platform for the delivery of public and private services. This framework underpins the Indian government's digital initiatives, such as the Aadhaar project and the Unified Payments Interface (UPI), that have transformed the country's digital landscape (Mittal et al., 2019).

The role of technology in global governance and international organizations such as the G20 is still an evolving field. Kharas and Lombardi's (2012) edited volume provides insights into the role of the G20 in global governance, while a more recent work by Khan (2022) offers an analysis of digital diplomacy and the role of technology in G20 economies.

To conclude, studies by Bhattacharya and Kharas (2014) explore the prospective future trends and challenges that India might face as it continues to integrate technology and digitization into its economy and policy-making strategies. Their works, alongside others, paint a complex but promising picture of India's future role in the global economy.

In synthesizing these diverse sources, this chapter seeks to offer a comprehensive examination of India's role in the G20, its technological transformation, and the growth of its digital public infrastructure.

HISTORICAL CONTEXT

1. India's economy has experienced a remarkable rise since her independence in 1947. From the planned economy under Nehru, moving through the liberalisation in the 1990s, to the current era of digital disruption, India's economic trajectory has been one of consistent evolution. Today, she stands as one of the world's fastest-growing major economies, with growth underpinned by robust domestic consumption and an increasing shift towards service-led growth.
2. India's journey to the Presidency of the G20 has been a steady ascent. As one of the founding members of the G20, India has consistently advocated for a more equitable global economic order. Her ascension to the Presidency is reflective not just of her economic growth, but also her commitment to inclusive multilateralism and sustainable development.
3. The rise of India's economy is inextricably linked with her technological transformation and the development of digital infrastructure. India's tryst with technology began with the IT boom in the 1990s, leading to an exponential increase in the IT services and software sector. In the past decade, the focus has shifted towards building a robust digital public infrastructure. Technological transformation has thus been a crucial driver of India's economic growth, shaping sectors from finance to agriculture, and bolstering India's role in the G20.

TECHNOLOGICAL TRANSFORMATION IN INDIA

1. The technological revolution in India has been a story of remarkable growth and development. It began with the information technology boom in the late 20th century and has since burgeoned into a diverse landscape encompassing sectors from healthcare to finance. India's IT industry has evolved into a global powerhouse, exporting software services to companies around the world, while domestically, technology has become a pervasive element of daily life.
2. Technological advancements have profoundly influenced several key sectors in India. The financial sector, for instance, has been revolutionised by digital transactions and mobile banking. In agriculture, precision farming, facilitated by data-driven insights, has optimised productivity. The healthcare sector, too, has witnessed significant technological disruptions with telemedicine and digital health records. Moreover, the emergence of e-commerce and digital entertainment has redefined consumer behaviour.
3. The influence of technology on India's economy cannot be overstated. It has catalysed economic growth by fostering innovation, enhancing productivity, and creating new avenues for employment. The IT industry alone contributes significantly to India's GDP and employs millions. Additionally,

technology has been instrumental in fostering financial inclusion and bridging socio-economic gaps, thereby contributing to sustainable development.

4. Technology plays a pivotal role in India's presidency of the G20. It enables India to contribute constructively to dialogues on digital economy, cybersecurity, and data governance. Furthermore, India's homegrown technological solutions, such as the Aadhaar biometric system and UPI payments infrastructure, serve as examples of scalable digital solutions that can inform global policy discussions.

DIGITAL PUBLIC INFRASTRUCTURE IN INDIA

1. Digital public infrastructure refers to a range of digital platforms and tools that facilitate the delivery of public services. These include identity verification systems, digital payment systems, and data-sharing frameworks. Essentially, digital public infrastructure acts as the bedrock upon which digital services, both public and private, can be built.
2. The evolution and growth of digital public infrastructure in India has been a transformative journey. From the early days of computerization in government services to the present-day comprehensive digital platforms, India's digital public infrastructure has undergone significant maturation. This growth has been driven by the government's concerted efforts to leverage technology for public service delivery.
3. Key government initiatives for the development of digital public infrastructure include the Digital India programme, the Aadhaar project, and the Unified Payments Interface (UPI). These initiatives aim to provide digital identities, foster digital literacy, enhance connectivity, and promote digital payments, thus establishing a comprehensive digital ecosystem.
4. The impact of digital public infrastructure on economic and social development in India is profound. It has made public services more accessible, efficient, and transparent. It has fostered financial inclusion by bringing unbanked populations into the formal financial system. Furthermore, it has empowered citizens by democratizing access to information and creating opportunities for digital entrepreneurship.
5. Despite the remarkable progress, challenges persist in the development of digital public infrastructure. These include issues of digital literacy, data privacy, and cybersecurity. However, the government, in conjunction with private entities, is actively working on solutions. For instance, digital literacy programmes are being scaled up, and robust legal frameworks are being developed for data protection and cyber security. The journey towards a fully digital India, while challenging, is well underway and holds immense promise for the nation's future.

TECHNOLOGICAL TRANSFORMATION AND DIGITAL PUBLIC INFRASTRUCTURE IN G20

1. Technological transformation and digital public infrastructure play a vital role in the economies of the G20 nations. These technologies enable economic growth by fostering innovation, improving productivity, and creating opportunities for new digital-based industries. Furthermore, digital public infrastructure enhances the delivery of public services, facilitating better governance and contributing to inclusive development.
2. When compared to other G20 nations, India's digital infrastructure presents a unique picture. While India may not yet match the sophistication of digital public infrastructure found in some developed nations, it has made remarkable strides in a short span of time. The country's focus on providing universal access to digital services, often in challenging environments, sets it apart. The scale of projects such as Aadhaar and UPI, in a country of over a billion people, also stands as a testament to India's ambitions in this space.
3. India's digital growth significantly influences its presidency in the G20. With its unique insights and experiences, India is well-positioned to lead discussions on digital inclusion, data governance, and the role of technology in economic development. Furthermore, India can offer scalable models of digital public infrastructure that can be adopted or adapted by other nations to advance their digital economies.

CASE STUDIES: DIGITAL INITIATIVES AND ECONOMIC IMPACT

1. Aadhaar, India's unique identification project, provides every resident with a unique 12-digit identification number linked to their biometric data. This initiative has streamlined governance by providing a digital identity for each citizen, thereby eliminating duplicate and fake identities in government databases. Aadhaar has facilitated the direct transfer of government benefits, thereby reducing corruption and enhancing the efficiency of public service delivery.
2. The Unified Payments Interface (UPI) is a real-time payment system developed by the National Payments Corporation of India. UPI has revolutionised the Indian payment system by enabling peer-to-peer transactions from over 140 banks via mobile devices. It has fostered financial inclusion and digitisation of the economy, reduced transaction costs, and stimulated the growth of digital businesses.
3. The Digital India Initiative aims to transform India into a digitally empowered society and knowledge economy. Key components of this initiative include providing broadband connectivity in rural areas, establishing Wi-Fi hotspots, and promoting e-Governance. The initiative has not only fostered digital literacy and inclusion but also stimulated job creation in the digital and IT sectors. The Digital India Initiative underscores the government's commitment to leveraging technology for inclusive growth and sustainable development.
4. Case Study 4: National Digital Health Mission (NDHM) - Health Care Digitisation: The NDHM, launched in 2020, marks a significant step towards the digitisation of healthcare in India. The initiative aims to develop the necessary digital health infrastructure for the efficient delivery of healthcare services across the country. It proposes to create a unique health ID for every Indian citizen, a digital health record containing details of their medical history, and e-pharmacy and telemedicine services. This initiative not only enhances the accessibility and efficiency of healthcare services but also provides an impetus to India's vision of becoming a digital-first nation.
5. Case Study 5: GeM (Government e-Marketplace) - Streamlining Public Procurement: The GeM platform, operational since 2016, has brought transparency and efficiency to government procurement by providing an online, end-to-end solution for procurement of goods and services by government organisations. By doing away with the conventional tendering process, GeM has fostered a more inclusive vendor participation, led to significant savings for the government, and promoted ease of doing business. This digital platform stands as a testament to how technology can be leveraged to improve governance and promote transparency.
6. Case Study 6: DigiLocker - A Platform for Issuance and Verification of Documents: DigiLocker is an initiative under the Digital India program that provides citizens with a digital platform to store, access, and verify documents and certificates. This cloud-based platform eliminates the use of physical documents and reduces administrative inefficiencies. Citizens can avail various services based on the documents stored in the DigiLocker, which also facilitates real-time authentication. This has significantly reduced bureaucratic delays and costs associated with government processes.
7. Case Study 7: Pradhan Mantri Jan-Dhan Yojana (PMJDY) - Financial Inclusion Initiative: Launched in 2014, PMJDY is a national mission aimed at providing financial services to the unbanked population. Leveraging digital technology, the initiative offers access to banking services, remittance, credit, insurance, and pension to previously excluded sections of society. With a significant number of accounts opened under PMJDY, it has been instrumental in driving financial inclusion by using digital technology. The direct benefit transfers enabled by this scheme have also ensured more effective delivery of social welfare benefits to the neediest segments of society.
8. Case Study 8: SWAYAM - Democratizing Education: The Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM), is an integrated platform for online courses, covering school to post-graduate level. It aims to bridge the educational divide by providing quality educational resources to all, including the most disadvantaged. The initiative showcases how digital transformation can democratize education and promote lifelong learning.

9. Case Study 9: e-NAM - Digitising Agriculture Markets: The electronic National Agriculture Market (e-NAM) is a pan-India electronic trading portal, linking Agricultural Produce Market Committees (APMCs). This initiative has enhanced the transparency and competitiveness of transactions, provided better access to markets and prices to farmers, and streamlined the marketing of agricultural produce. This case highlights the role of digital technologies in transforming traditional sectors and promoting economic empowerment.
10. Case Study 10: GSTN - Simplifying Tax Administration: The Goods and Services Tax Network (GSTN) provides IT infrastructure and services to central and state governments, taxpayers, and other stakeholders for the implementation of the Goods and Services Tax (GST). By providing a shared IT infrastructure, GSTN has enabled easier compliance, uniform processing, and speedier dissemination of tax information. This demonstrates how digital public infrastructure can simplify complex administrative processes and promote compliance.
11. Case Study 11: BharatNet - Bridging the Digital Divide: BharatNet is a flagship mission aimed at providing broadband connectivity to all of India's 250,000 Gram Panchayats (village councils). By ensuring internet connectivity even in the most remote parts of India, this initiative aims to bridge the digital divide and facilitate the delivery of various e-services, such as e-health, e-education, and e-governance, to the rural population. BharatNet stands as a shining example of how digital infrastructure can empower and inclusively connect a vast and diverse nation.
12. Case Study 12: Smart Cities Mission - Enhancing Urban Life through Technology: The Smart Cities Mission is an ambitious urban renewal programme aimed at developing sustainable and inclusive cities through the deployment of 'smart' solutions. These include digital technologies for improved urban planning, public safety, efficient utilities, and better citizen services. The mission, with its emphasis on digital technology, is transforming Indian cities into more livable, sustainable, and citizen-friendly environments. It highlights the role of digital innovation in addressing complex urban challenges.
13. Case Study 13: National Scholarship Portal (NSP) - Streamlining Scholarship Applications: The NSP is a one-stop digital platform for all scholarship schemes provided by the central government, state governments, and public-sector undertakings. It simplifies the scholarship application process for students and provides a transparent and efficient system for the disbursement of scholarships. The portal also enables the monitoring of disbursement and ensures that the benefits reach the right candidates. This initiative underscores the role of digital platforms in enhancing transparency and efficiency in public service delivery.
14. Case Study 14: e-Courts Project - Digitising the Judiciary: The e-Courts project aims to transform the Indian judiciary by making it paperless and ensuring its services are available to citizens electronically. The project has developed several applications, such as the e-Filing application and the Case Information System, which provide information on cases, judgments, and orders. By making court services more accessible and efficient, the project has not only improved the justice delivery system but also enhanced transparency and accountability. This initiative highlights the potential of digital technologies to revolutionise even the most traditional and complex sectors.
15. Case Study 15: AarogyaSetu - Digital Health Management in Pandemic: AarogyaSetu is a mobile application developed by the Indian government to connect health services with the people of India during the COVID-19 pandemic. The app provides critical information, including risks, best practices, and relevant medical advisories related to the pandemic. The app's contact-tracing feature has been instrumental in tracking the spread of the virus. This initiative illustrates the agility and utility of digital solutions in managing public health crises.
16. Case Study 16: PradhanMantri e-Vidya Programme - Digital Education: Launched in response to the COVID-19 pandemic-induced closure of schools, the PradhanMantri e-Vidya Programme aims to unify all efforts related to digital, online, and on-air education. It enables multi-mode access to education and includes initiatives like DIKSHA (national digital infrastructure for teachers), Swayam Prabha TV Channel, and an interactive programme for radio students. This initiative demonstrates the power of digital transformation in ensuring uninterrupted access to education in challenging circumstances.

17. Case Study 17: Start-up India - Fostering Entrepreneurship and Innovation: Launched in 2016, the Start-up India initiative aims to build a robust start-up ecosystem for nurturing innovation and entrepreneurship. The initiative provides startups with a range of benefits such as tax holidays, simplified regulations, and a platform for knowledge exchange. Its online portal and mobile app provide a single point of contact for the entire start-up ecosystem to collaborate and share best practices. This initiative showcases how digital platforms can be used to promote entrepreneurship and innovation.
18. Case Study 18: e-Way Bill System - Streamlining Goods Transportation: The e-Way Bill system, implemented under the GST regime, is a digital solution for the transportation of goods. A unique e-Way Bill Number (EBN) is generated for each consignment, facilitating seamless inter-state and intra-state movement of goods. The system has helped improve the efficiency of freight and logistics, reduce transit times, and increase tax compliance. This case provides an excellent example of how digital transformation can improve logistical efficiency and boost economic activities.
19. Case Study 19: National Career Service (NCS) - Digital Employment Facilitation: The NCS portal serves as a one-stop solution for job seekers and employers in India, providing a variety of employment services. It offers an online platform for job seekers to search and apply for jobs, and for employers to find suitable candidates. In addition, it offers career counselling and information on training and self-employment opportunities. This demonstrates how digital platforms can streamline job matching and skills development, aiding economic growth and development.
20. Case Study 20: FASTag - Digitising Toll Payments: FASTag, an electronic toll collection system implemented by the National Highways Authority of India, uses Radio Frequency Identification (RFID) technology for making toll payments directly from prepaid accounts. This initiative has significantly reduced the wait time at toll plazas, ensuring seamless movement of vehicles across highways. It has also led to improved transparency and accountability in the collection of tolls. This initiative reflects how digitisation can enhance operational efficiency and user experience in public services.

FUTURE PROSPECT AND CHALLENGES

1. The forthcoming trends in technological transformation and digital infrastructure in India are poised to be revolutionary. Artificial intelligence, machine learning, and block chain technologies are anticipated to become more pervasive, driving efficiencies across various sectors from healthcare and education to finance and governance. The Internet of Things (IoT) and 5G are expected to redefine connectivity, enabling a new era of smart devices and digital services. Digitally enabled public services, once a vision, are rapidly becoming the norm, pointing towards an inclusive digital society.
2. Yet, as with any rapid transformation, the digital era will not be without its challenges. Digital literacy, data privacy, cyber security, and equitable access to digital infrastructure are areas that need robust policy frameworks and continuous vigilance. Another challenge lies in reskilling and up skilling the workforce for the digital economy to prevent job displacement due to automation.
3. These trends and challenges are likely to significantly influence India's role in the G20. As a country at the forefront of digital innovation and public digital infrastructure, India can take a leading role in shaping discussions around digital economy, data governance, and cyber security. Additionally, India's experiences and lessons learnt in addressing digital divide and promoting digital literacy can provide valuable insights to other G20 countries.

CONCLUSION

To summarize, the technological transformation and digital public infrastructure have had a profound impact on India's economy, facilitating not just economic growth but also inclusive development. From financial services and healthcare to education and governance, digital technologies have revolutionized service delivery, boosting efficiency, transparency, and accessibility.

Reflecting on India's presidency in the G20 from an economic perspective, it becomes evident that India's focus on digital transformation aligns with its broader vision for sustainable and inclusive global economic growth. By leveraging its experience in digital public infrastructure and digital services, India is well-positioned to foster global collaboration in the digital economy.

Looking ahead, the global economic community can expect India to play an increasingly pivotal role. Given its impressive strides in digital transformation, India can lead in shaping the global digital economy discourse. As it continues to innovate and implement digital solutions at scale, India has the potential to become a global model for how countries can leverage technology for economic growth and social inclusion.

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IMPACT OF BRAND PERSONALITY ON LOYALTY: AN EMPIRICAL STUDY IN THE FMCG SECTOR

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ABSTRACT

Brand personality dimensions have a positive impact on the consumer's brand loyalty in the FMCG industry. Researchers must probe the impact of brand personality in FMCG companies and its importance to measure the dimensions to further analyse consumer brand loyalty. To remain competitive, FMCG firms must effectively create their brand name better than others and ensure that clients are aware of their products so that they return and purchase from them again. This study was done to investigate how brand personality factors have influenced consumer brand loyalty. The sample size for the study was 206 respondents and took responses from all age groups to analyse their brand loyalty with respect to the packaged products in the FMCG industry because almost everyone is a consumer of FMCG products. All the hypotheses were accepted during the study, indicating the purpose of the study was fulfilled. As a consequence of that, we can say that the dimensions of brand personality: Competence, Sincerity, Excitement, Sophistication and Ruggedness have a positive impact on the consumer's brand loyalty in the FMCG industry and this study will make it easier to measure loyalty with help of brand personality.

Keywords: Brand Loyalty, FMCG, Brand Competence, Brand Personality

INTRODUCTION

Fast-moving consumer goods (FMCG) is India's fourth-largest industry, with packaged goods accounting for half of total FMCG sales. The primary growth factors for the sector have been expanded awareness, increased access, and changing lifestyles. However, in recent years, the FMCG market in rural India has grown faster than in urban India. In both semi-urban and rural areas, FMCG products account for 50% of rural consumption. Branded goods are gaining popularity in rural India. However, as the unorganised market's proportion of the FMCG sector falls, the growth of the organised sector is expected to increase, aided by modern retail development and improved brand recognition. Another important element driving demand for food services in India is the country's expanding youth population, especially in cities. Because of time constraints, India has a huge population of young customers who do the majority of the labour and have little time for cooking.

The companies under this study are Hindustan Unilever, Nestle, Britannia, Dabur, and ITC Ltd.

BRAND PERSONALITY

How the brand speaks and behaves about a particular product. Further, this assigns how the human personality acted towards the brands, primarily differentiating one brand from another. This varies based on how an individual depicts a particular brand through advertising, packaging, etc. When a brand image is associated with human traits, it is termed brand personality. It is nothing but how an individual had a personification towards a brand. It differs from brand image, the brand image represents the tangible benefits of a brand and brand personality is about an emotional attachment toward a particular brand. It should also be thorough in consumers' minds if it is comprehensive towards consumer opinion. Brand personality develops brand equity. It sets the brand attitude. It is a crucial input into the look and feel of the brand's communication or marketing activity and it helps gain a thorough knowledge of customer's feelings about the brand.

BRAND LOYALTY

Aaker (1991) defines brand loyalty as a customer's attachment to a brand. Brand loyalty, according to Oliver (1999), can be measured through behavioural and attitudinal loyalty. Behavioural loyalty refers to the actual behavioural responses obtained through the company's cooperation; however, it cannot identify spurious and latent customers (Dick and Basu, 1994). Through customer surveys, attitudinal loyalty with attitude and behaviour intent provides value to the company, leading to true behaviour loyalty (repeat purchase) (Aaker, 1991). Repeat purchases and referrals to other consumers demonstrate customer loyalty (Heskett et al. 1994). He also argued that customer loyalty may be directly quantified as repeat sales to customers.

The environment is a crucial factor in doing business as a result of rising consumer demand for sustainable goods. Many consumers today are choosing green alternatives that can help the earth in light of the environmental catastrophe. Environmental sustainability is becoming a crucial corporate practice in response to demands from diverse stakeholders. The research study by Japneet Kaur Purba and Fezeena Khadir (2022) proves that there is a link that exists for FMCG brands in India between brand green orientation, brand equity antecedents, and customer-based brand equity. Customers are more aware of and more likely to be loyal to brands that are more engaged and environmentally conscious. There aren't many methods for brands to set their products apart from those of their rivals in the very competitive FMCG sector. The brands should aim to take advantage of this chance to their own advantage by responding to this shift in consumer needs and lifestyles. As a result, brand associations, brand loyalty, and perceived brand quality will all rise. FMCG companies can successfully leverage their environmentally conscious strategy to enhance their brand equity and image.

Brand loyalty provides a competitive advantage by forming an effective barrier against competitors, increasing the company's ability to respond to competitive activities. As a result, brand loyalty has been regarded as a concept that requires attention on both behavioural and attitudinal levels (Kim, Lee, & Suh, 2015; Rai & Medha, 2013). Customers who engage in repetitive purchasing behaviours must be distinguished from those who prefer that brand over others and make purchases in accordance with that preference (Akin 2017).

NEED FOR STUDY

The significance of branding has expanded dramatically, increasing its qualities and elements. Brand personality is one such critical factor. Brand personality has played an essential part in both the life of a brand and a consumer's life. However, it is unclear how powerful the influence of brand personality is on consumer loyalty. Companies invest heavily in developing this personality to establish a strong relationship with their customers.

As a result, any firm must develop and generate a strong sense of connection between the consumer and the company. This will assist them in understanding the consumer's thinking about a brand and provide insight into why certain brands are favoured over others based on their personalities. Therefore, the study aims to determine how the brand's personality affects a consumer's brand loyalty.

Objectives of the Study

1. To investigate how the brand personality factors have influenced consumers' brand loyalty.
2. To identify which is the most preferred brand in the FMCG industry in packaged foods sector.
3. To analyse whether brand competence, sincerity, brand sophistication, and ruggedness influence consumers' brand loyalty.

REVIEW OF LITERATURE

Wang, Yang, and Liu (2009) stated in the study that how the comparison was made between a product's brand personality and a company's brand personality features and then made a probe on product brand congruency as well as self-image congruence in influencing the purchase intention of consumers who preferred Chinese Mainland automobile industry. According to the findings, there was a considerable change in product brand personality rather than business brand personality because product brand personality impacted customer purchase intention in China. It was shown that there was a weighty relationship between product brand personality and the purchase intention of Chinese consumers.

Oenyoto (2015) explored how competition influences consumer brand preferences and purchase intent in the Indonesian bicycle industry. This study's primary goal was to examine how brand equity influenced customer brand preferences, which influenced Indonesian consumers' purchase intentions. According to the findings, there was a statistically significant influence on customer brand preference and purchase intention. Furthermore, brand preference was found to have a considerable impact on Indonesia's brand equity and bicycle purchase intention.

Brand Loyalty is an important concept in today's brand marketing world. Many definitions were proposed by many researchers, among which the most complete definition was proposed by Jacoby and Olson (1970). They defined brand loyalty as the result of a non-random, long existence behaviour response, and it was a mental purchase process formed by certain decision units that considered more than one brand. In early research, researchers usually took the act of repurchasing as the method of measuring brand loyalty. But some researchers indicate that to measure brand loyalty the best way is to measure affective loyalty (Bennett and Rundle-Thiele, 2000).

Marcus O, et al. (2017) investigated how personality characteristics influenced customer purchasing behaviour. The research was carried out in South-Eastern Nigeria. To evaluate the personality traits, the writers analyzed five factors: social character, obedience, aggressiveness, ethnocentrism, and dogmatism. The study used the survey approach, and statistical tools such as mean, standard deviation, and multiple regression analysis were used. The study discovered that personality traits, particularly social character, compliance, assertiveness, and ethnocentrism, significantly influenced customer purchasing behaviour. Dogmatism has little effect on customer purchasing behaviour. According to the findings, producers and marketers should incorporate personality traits while designing products to contribute more to Nigeria's economic growth and development. Marketers must target techniques based on the social characteristics of the people to persuade any age group of people to purchase the items and accept the brand of each product. Furthermore, marketers approved the use of celebrities advertising products, particularly during festivals, to incorporate them as festival glamour.

Kandasamy (2013) investigated the impact of consumer behaviour and brand equity on long-lasting products. Brands have a significant effect on customer behaviour. Brand familiarity among competing brands influences consumer purchasing decisions. Before making a purchase, customers sought information from various sources and weighed their options. Demographic factors such as age, education, monthly income, and marital status all benefit consumer purchasing decisions. Consumers are aware of many brands. Brand equity dominions such as brand awareness, brand image, and perceived quality have a more significant influence on purchasing behaviour. Brand loyalty affects brand equity in a direct and positive way.

METHODOLOGY

The research was conducted utilising a logical approach, with a concentration on quantitative techniques. To determine the impact of brand personality on customer loyalty in the FMCG sector, both primary and secondary data were collected. To measure customer loyalty, a self-administered questionnaire was constructed utilising Aaker's brand personality framework (1997), which was supported by a review of the literature on brand personality and brand loyalty. The questionnaire included 25 Linkert scale items and demographic and behavioural data from clients were collected using multiple-choice questions, ranking questions and open-ended questions. The survey's target market was people who consume packaged foods from the FMCG industry in India, and the sample size was roughly 200, with data from 206 respondents obtained.

The questionnaire so developed for this study has been developed by the researcher itself. The questionnaire has been tested accordingly for its reliability using Cronbach's alpha value and a similar justification for the validity of the questionnaire has been retrieved from several literature reviews for the same.

Hypothesis

- H₁**: Brand Competence has an impact on Consumers' Brand Loyalty with reference to FMCG sector.
- H₂**: Brand Sincerity has an impact on Consumers' Brand Loyalty with reference to FMCG sector.
- H₃**: Brand Excitement has an impact on Consumers' Brand Loyalty with reference to FMCG sector.
- H₄**: Brand Sophistication has an impact on Consumers' Brand Loyalty with reference to FMCG sector.

H₅, Brand Ruggedness has an impact on Consumers' Brand Loyalty with reference to FMCG sector.

SAMPLING

A sample design is a specific strategy for getting a sample from a specified population. It refers to the method or procedure used by the researcher to pick things for the sample. People were chosen at random for the purpose of selecting a sample and will be asked to complete a questionnaire. As a result, the study's sample technique would be random sampling. A sample of 206 people who are general consumers of packaged goods would be used to reflect the population.

Aaker (1997) created a brand personality scale by isolating the distinct aspects, characterising brand personality as a "unidimensional construct," and demonstrating how different types of brand personalities may be recognised. Sincerity, Excitement, Competence, Sophistication, and Ruggedness are the scale's five dimensions. The measurement of Sincerity suggests that the brand is utilised by people who are family-oriented, live in villages, and use it for practical purposes. The dimension also suggests that the company is fair and just, that it delivers on its promises, and that those claims are founded on facts. This dimension emphasises the brand's pioneer status and the brand's ability to deliver both physical and mental fulfilment. The dimension also reveals that the brand's colour and other elements are brilliant, that the brand is used for sentimental reasons, and that the brand offers assistance as if it were a friend. Surprisingly, the last two qualities, Sophistication and Ruggedness, do not appear on human personality measures. For the secondary data, this scale was employed.

A self-administered questionnaire was constructed utilising Aaker's brand personality framework (1997) to measure consumer brand loyalty, which was supported by a study of the literature on brand personality and brand loyalty.

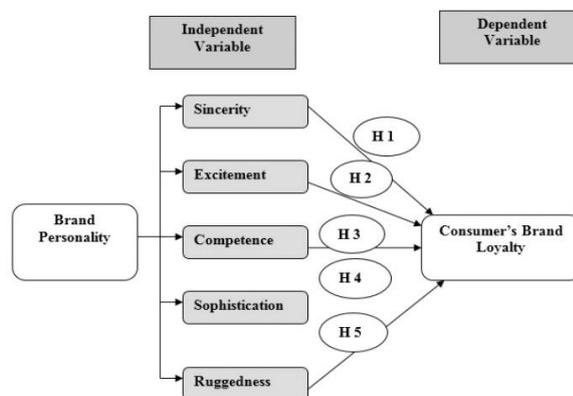
Tools used for Analysis

Hypotheses testing were done using Karl-Pearson Correlation, and Multiple Linear Regression using SPSS.

CONCEPTUAL FRAMEWORK

The following framework was created to study the relationship between the independent and dependent variables based on the theoretical results on Brand Personality.

Figure 1. Conceptual Framework for the study



DATA ANALYSIS

This section aims to study and analyse the data that has been collected from respondents all over India by the way of questionnaires. It consists of descriptive and inferential statistics with the aim of testing the hypothesis by using various tools such as Pearson's correlation coefficient and Linear Regress

DESCRIPTIVE ANALYSIS

Respondents Factors	Frequency (206)
Gender	Male: 49.5%(102) Female: 49%(101) Others: 1.5%(3)
Age	Below 25: 52.4%(108) 25-40: 25.2%(52) Above 40: 22.3%(46)
Place of Residence	Rural: 14.1%(29) Urban: 85.9%(177)
Type of Family	Nuclear: 56.8%(117) Joint: 43.2%(89)

Gender, Age, Place of residence and type of family are an important factor, taken into consideration for this research as it helps understand the variation of consumers brand loyalty within the FMCG industry.

Out of the 206 respondents, 102, i.e., 49.5% of the respondents were Male, and rest of the 101, i.e., 49% of the respondents were Female, followed by 3, i.e., 1.5% others.

Out of the 206 respondents, 108, i.e., 52.4% of the respondents belonged to the age group of below 25 years, followed by 52, i.e., 25.2 % of the respondents belonged to the age group of 25-40, and then finally 46, i.e., 22.3% of the respondents belonging to the criteria of above 40 years.

Out of the 206 respondents, 177, i.e., 85.9% of the respondents belong to Urban area, 29, i.e., 14.1 % of the respondents belong to the Rural area.

Out of the 206 respondents, 177, i.e., 58.8% of the respondents belonged to a nuclear family, and rest of the 89, i.e., 43.2% of the respondents belonged to a joint family.

Table 1. Brand Personality correlation with Consumer's brand loyalty (Correlation)

Factors	R-value	Significance (P-value)
Brand Competence	0.646	0
Brand Sincerity	0.519	0
Brand Excitement	0.459	0
Brand Sophistication	0.293	0
Brand Ruggedness	0.172	0.009

It can be observed from Table 1 that there is a significant linear relationship between brand personality and brand loyalty as it can be seen that $p < 0.001$ in all the cases. All five factors of brand personality presented in the study were effectively tested using correlations, demonstrating that independent variables of customer-preferred Brand personality traits such as Sincerity, Excitement, Competence, sophistication and ruggedness had a positive association with customer brand loyalty.

Table 2. Brand Personality and Consumer's brand loyalty (model summary)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.676 ^a	.457	.443	2.06866

a. Predictors: (Constant), Brand Ruggedness, Brand Sincerity, Brand Excitement, Brand Competence, Brand Sophistication

The above-given Table 2 provides the R and R² values. The R-value represents a simple correlation and is 0.676 which shows a strong correlation between the independent and dependent variables. As can be seen above, there is a strong positive correlation, which means that consumers' Brand Loyalty seems to rise when Brand Personality factors like Sincerity, Excitement, Competence, sophistication and ruggedness rise. The R² value shows how much the degree of variation independent variable can be shown by the independent variable and in this study, it is 45.7%. It means that 45.7% of the variations that take place in Brand Loyalty can be explained by

the independent variables that are mentioned and it is a significant percentage. The rest can be due to other factors.

Table 3. Brand Personality and Consumers Brand loyalty (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	719.826	5	143.965	33.642	.000 ^b
	Residual	855.869	200	4.279		
	Total	1575.694	205			
a. Dependent Variable: Consumer's Loyalty						
b. Predictors: (Constant), Brand Ruggedness, Brand Sincerity, Brand Excitement, Brand Competence, Brand Sophistication						

Through ANOVA Table 3, it can be observed that the 'Sig' value is 0.000, $p < 0.001$ which means that the results are statistically significant.

Table 4. Brand Personality and Consumers Brand loyalty (Coefficients)

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.103	.563		3.735	.000
	Brand Competence	.682	.099	.507	6.907	.000
	Brand Sincerity	.175	.094	.134	1.860	.064
	Brand Excitement	.055	.080	.051	.684	.495
	Brand Sophistication	.181	.074	.201	2.450	.015
	Brand Ruggedness	-.113	.067	-.130	-1.673	.096
a. Dependent Variable: Consumer's Loyalty						

Based on the SPSS output from Table 4, the following multiple regression equation is formed:

Consumer's Loyalty = 2.103 + 0.682 (Brand Competence) + 0.175 (Brand Sincerity) + 0.055 (Brand Excitement) + 0.181 (Brand Sophistication) - 0.133 (Brand Ruggedness)

The values of the unstandardized Beta coefficient among the independent variables range from the weakest relationship of -0.113 of Brand Ruggedness to the strongest relationship of 0.682 of Brand Competence. Hence, Brand Competence is the most significant variable of Brand Personality affecting the Consumer's Brand Loyalty followed by Brand Sophistication and Brand Sincerity. Lastly, Brand Ruggedness has the least impact on Consumer's Brand Loyalty for a FMCG Brand.

The p-value for Brand Competence ($p=0.00$) is less than the alpha value of 0.05. The null hypothesis can be rejected. Hence, it can be suggested that Brand Competence is positively related to the Consumer's Brand Loyalty to a FMCG brand.

The p-value for Brand Sincerity ($p=0.064$) is more than the alpha value of 0.05. The null hypothesis can't be rejected. Hence, it can be suggested that Brand Sincerity is not positively related to the Consumer's Brand Loyalty to a FMCG brand.

The p-value for Brand Excitement ($p=0.495$) is more than the alpha value of 0.05. The null hypothesis can't be rejected. Hence, it can be suggested that Brand Excitement is not positively related to the Consumer's Brand Loyalty to a FMCG brand.

The p-value for Brand Sophistication ($p=0.015$) is less than the alpha value of 0.05. The null hypothesis can be rejected. Hence, it can be said that Brand Association is positively related to the Consumer's Brand Loyalty to a FMCG brand.

The p-value for Brand Ruggedness ($p=0.096$) is more than the alpha value of 0.05. The null hypothesis can't be rejected. Hence, it can be suggested that Brand Ruggedness is not positively related to the Consumer's Brand Loyalty to a FMCG brand.

FINDINGS AND DISCUSSION

All five hypotheses presented in the study were effectively tested using correlations, demonstrating that independent variables of customer preferred Brand personality traits such as Sincerity, Excitement, and Competence had a positive association with customer brand loyalty. Whereas in the packaged foods and FMCG industries, sophistication and ruggedness have little but a positive impact on consumer brand loyalty.

This study also discovered that the most influential customer-chosen brand personality dimension is Competence (0.646 correlation value). As previously said, brand competence assesses a brand's fundamental competency. According to the findings of the study, the dependability and accessibility to real information about the brand has been a crucial component in determining competency. The concept of brand competency has also been shown to have a substantial relationship with the brand's market availability. As a result, many buyers feel that if a brand is widely available in the market, it is competent. As a result, organisations in the FMCG industry should keep the aforementioned criteria in mind.

This study also discovered that the second most influential customer-preferred brand personality factor is Sincerity (0.519 correlation value). The marketing and operations teams of market players should think about how to strengthen Sincerity through their marketing and operations activities with down-to-earth, honest, wholesome, and happy features. New entrants and established behemoths in the FMCG market should be able to retain the brand personality aspects of Excitement and Sincerity through their commercial activities. FMCG companies should manage their business strategies wisely in order to balance these extremely influential brand personality qualities in their brand positioning and communication.

Excitement was discovered to be the brand personality dimension that has an impact on client brand loyalty in the FMCG business (0.459 correlation value). It indicates that whenever a new or established FMCG firm comes out with a new initiative, or innovation, or even when promoting existing services, they should focus heavily on creating an appeal through the Excitement personality attribute. Through their marketing and promotional campaigns, organisations should take risks and focus on daring, passionate, inventive, and up-to-date features of the connection or usability in the minds of customers.

Furthermore, when FMCG organisations in packaged foods decide on their marketing plan to motivate customer retention and loyalty, it is not enough to strengthen the functional activities, but they should also consider the emotional stimulation in the customer's mind, where the above investigations revealed that the most impact brand personality preferences are Competence & Sincerity in FMCG market.

The fast-moving consumer goods (FMCG) market is one of the most unpredictable and challenging to succeed in. Competition has always been fierce, and the fight for market share has never been worse than it is now. Because FMCG companies control so many brands in so many industries, their success, as well as the success of their individual brands, can be greatly influenced by branding. Companies should use branding as one of their strongest tools to capture consumers and retain them.

The research also probes the role of brand personality and its impact on consumer loyalty in the FMCG sphere in India. It will allow marketers to understand how to strengthen their brands by eliciting responses from consumers, especially in such a fast-moving scenario, as that of the FMCG sector of India. Also, to ensure consumer retention in a competitive environment, brands should enhance the experience offered by them through the strengthening of their entire brand personality: which would include communicating brand awareness to wider audiences, understanding and providing good quality, aligning all brand associations and building on the loyalty of existing consumers. By focusing on these aspects of Aaker's model, companies in the FMCG sector can foresee growth in cut-throat, dynamic situations.

CONCLUSION

This study discusses the impact of brand personality on consumers' brand loyalty. It was found that consumers are highly influenced by a brand's personality and respond significantly in the form of their loyalty. Brand personality elements develop a brand's personality which can be in the form of competence, sincerity, ruggedness, sophistication and excitement, these elements when compared with the consumer's loyalty traits gave out significant relevance when it came to consumer's brand loyalty.

The sample of 206 consumers showed that many consumers are self-conscious and this also tells us about their most preferred FMCG brand and what factors are most relevant when it comes to the packaging of the product to consumer's brand loyalty. As a result of this, a brand's personality must connect with the personality of the consumer. It was also found that once a consumer develops a liking for a brand, he usually becomes loyal to it, and hence brand personality also helps in building brand loyalty in the consumers. The study also shows that consumers really like sincere brands with honest communication and information, which shows that consumers are looking for brands which are reliable and honest in their undertakings.

In a nutshell, corporations must recognise that their brands have a significant impact on consumer brand loyalty. As a result, brand personality is an important aspect of branding and has a big impact on consumer brand loyalty. Various brand aspects have varying effects, but they differ from one customer to another.

The idea is to ensure that a brand has a personality that matches what it does and positively impacts the consumers it is targeting. Hence, it would be really helpful for companies to focus on the personality part of the branding and also analyse the impact it has on the consumer to evaluate the trends in the consumer's brand loyalty.

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GREEN DEVELOPMENT AT INDIA'S PRESIDENCY AT G20

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ABSTRACT

India's G20 presidency aims to lead global efforts towards sustainable and inclusive development, focusing on green development. The country's commitment stems from its rich natural heritage and the recognition that sustainable growth is crucial for a secure future. India has taken significant strides in mitigating climate change, promoting renewable energy, and conserving biodiversity. Key initiatives and policies aimed at promoting green development include the International Solar Alliance (ISA), the National Clean Air Programme (NCAP), and the promotion of electric mobility through schemes like Faster Adoption and Manufacturing of Electric Vehicles (FAME). India has also emphasized sustainable agriculture practices through organic farming, soil health cards distribution, and water conservation measures. However, India faces both challenges and opportunities in promoting green development. One challenge is balancing carbon emissions and energy demands, while another is addressing air pollution, deforestation, and water scarcity. India can also leverage its expertise in renewable energy to encourage other countries to adopt clean technologies and reduce their reliance on fossil fuels. By showcasing successful projects like solar power initiatives and waste management systems, India can inspire collective action towards sustainable development.

Keywords: Green Development, India, Presidency, G20, Sustainable, Leadership

INTRODUCTION: INDIA'S COMMITMENT TO GREEN DEVELOPMENT AT G20 PRESIDENCY

As India takes on the prestigious role of the G20 presidency, it embraces a crucial responsibility in leading global efforts towards sustainable and inclusive development. Recognizing the urgent need to address environmental challenges, India has made a steadfast commitment to prioritize green development during its tenure. India's commitment stems from its rich natural heritage and the recognition that sustainable growth is key to ensuring a secure and prosperous future for all.

The country has already taken significant strides towards mitigating climate change, promoting renewable energy, and conserving biodiversity. Now, as it assumes leadership within the G20, India aims to foster international cooperation and drive collective action on green initiatives. Through its presidency, India seeks to leverage its unique position as a rapidly developing nation with vast resources and a burgeoning renewable energy sector.

KEY INITIATIVES AND POLICIES PROMOTING GREEN DEVELOPMENT IN INDIA

India's presidency at G20 has witnessed several key initiatives and policies aimed at promoting green development. One of the prime initiatives is the International Solar Alliance (ISA), which India spearheaded along with France. ISA aims to enhance solar energy deployment globally, particularly in developing countries, by facilitating collaboration and capacity building. Furthermore, India has launched the National Clean Air Programme (NCAP) to combat air pollution and improve air quality in its cities. The program emphasizes a multi-sectoral approach involving coordination between various ministries and states. Another significant policy is the promotion of electric mobility through schemes like Faster Adoption and Manufacturing of Electric Vehicles (FAME). FAME aims to accelerate the adoption of electric vehicles by providing incentives to manufacturers and buyers alike. Additionally, India has emphasized sustainable agriculture practices through various initiatives such as organic farming promotion, soil health cards distribution, and water conservation measures in agriculture.

CHALLENGES AND OPPORTUNITIES FOR GREEN DEVELOPMENT AT G20 PRESIDENCY

As India takes on the G20 presidency, the nation faces both challenges and opportunities in promoting green development. One of the primary challenges is the need for a comprehensive strategy that addresses environmental concerns while ensuring sustainable economic growth. India must strike a balance between

reducing carbon emissions and meeting its energy demands to support its growing population. Additionally, addressing issues such as air pollution, deforestation, and water scarcity require innovative solutions that can be shared with other G20 member countries.

However, India's G20 presidency also presents significant opportunities for green development. The nation can leverage its expertise in renewable energy to encourage other member countries to adopt clean technologies and reduce their reliance on fossil fuels. By showcasing successful projects like its solar power initiatives or waste management systems, India can inspire collective action towards sustainable development.

CONCLUSION: INDIA'S ROLE IN SHAPING A SUSTAINABLE FUTURE THROUGH G20 LEADERSHIP

India's presidency at the G20 has provided a significant platform for shaping a sustainable future, with a particular focus on green development. Through its leadership, India has demonstrated its commitment to addressing global environmental challenges and promoting sustainable practices. The country has emphasized the importance of renewable energy, advocating for increased investment and collaboration in this sector. By leveraging its vast solar potential, India has set an example for other nations to follow, showcasing how clean energy can be harnessed on a large scale.

Furthermore, India's emphasis on circular economy principles and sustainable agriculture practices highlights its dedication to achieving long-term environmental sustainability. The promotion of eco-friendly technologies and innovation has been a central theme throughout India's presidency at the G20.

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AN OVERVIEW OF DIGITAL FINANCIAL INCLUSION

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ABSTRACT

Financial Inclusion is granting easy access to all financial product and services to the masses. It has been considered as a tool of social and economic development with focus on reducing poverty, inequality, encourage more saving and investment. With the advancement of information technology over the period of time, it plays a pivot role in fulfilling the objective of achieving inclusiveness, where people freely in offline or online mode use different kinds of financial services. Evidence shows that Digital finance play an important role in improving financial inclusion although face many technical glitches which need attention. This research article discussed digital financial inclusion, challenges & the role of digital finance in improving financial Inclusion and economic growth. It will be benefited for the strategies markers, banks, organisations and Government to create a digital infrastructure for easy access to financial service.

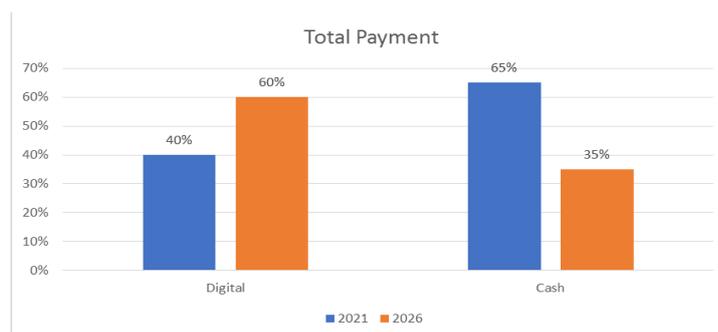
Keywords: Financial Inclusion, Saving, Digital.

INTRODUCTION

A financial system will be called strong when all people in a group or society have reach to wide range of financial services such as easy availability of loan, transfers and saving. An inclusive system allows for continuous flow of money helping the society to meet their emergency shocks. Continuous effects have been done in various countries to bring unbanked population into mainstream. With the purpose of inclusiveness in mind Government of India have started the concept of Financial Inclusion in 2005. Dr KC Rangarajan, former governor of RBI looks into the matter submitted its report on financial inclusion. He explained financial inclusion as “the process of ensuring access to timely and adequate credit and financial services by vulnerable groups at an affordable cost”. Over the years some major steps were taken to boost inclusive growth such as introducing PMJDY (A National Level Mission) to shifting to cashless & digital methods.

DIGITAL FINANCIAL INCLUSION

Digital financial inclusion is described as providing financial product as well as services to the financially ignored and weaker section using a mobile or other digital devices to increase use to digital financial services. It is giving financial services using different online modes such as debit/credit cards, mobile money, e-banking. The aim of digital financial inclusion is to provide services over online means to stakeholders result in minimising poverty, helpful in achieving sustainable development goals, improving inclusiveness. Events like Demonetisation, Digital India, COVID-19 has increased the dependence on digital platform to make payment. Now even small shopkeepers find it easy to receive and make transaction over digital apps result in an increased in no of online transaction. But as Per World Bank 2016, digital technology improve growth but their impact is still unequal.

Fig 1: Estimated growth of Digital over Cash Payment

Source: Phone Pe-BCG Report 2021

LITERATURE REVIEW

Mobile money transaction is now broadly recognised a vital constituent of the financial-inclusion program (Dermish et al., 2011) which was introduced in different growing economies in the last few years. Digital know-how has the maximum ability to develop an system which helps everyone by preparing present payment system easy and more appropriate (KostaPeric, 2015). Mobile money permit users to remit, transfer, deposit, withdraw, invest, and save money using mobile phone (Riley, 2018). In developing and developed nations, digital finance using financial technology has a good effect on financial inclusion but there are few things which need to be addressed that promote use of digital money in terms of financial participation and stability (Ozili, 2018). Shen, Hueng & Hu (2020) analysed how financial inclusion can be succeed in China. They observed that an increase in financial knowledge and use of internet, result in growth of digital financial products in China. Ozili (2021). The research concluded that the growth in the usage of plastic cards and digital finance products helped to minimised threat in the financial system of advanced economies but not for growing countries. (Goyal, ,2022) pointed out that digital finance helps to improve the standard of living of people. Although there are many factors if tackle properly it will boost financial Inclusion.

The objective of the present study

1. To analysed the present status of the digital finance in India.
2. To highlighted the functions of digital financial inclusion in the socioeconomic development of the country.
3. To identify various hurdles faced in adoption of digital technology.

Digital financial inclusion and economic growth

Providing financial product and services over online medium offer a number of benefits which result in economic growth, reducing poverty and inequality.

1. **Increased approach to financial services:** Digital financial services, such as mobile banking, digital wallets, and online platforms, have significantly expanded access to financial services.
2. **Cost reduction** - eliminating the need for physical infrastructure and reducing paperwork, digital transactions can be more affordable and accessible to individuals with limited financial resources.
3. **Convenience and efficiency:** Digital financial services provide convenience and efficiency in conducting financial transactions. Individuals can access their accounts, transfer money, pay bills, and make purchases anytime and anywhere, without the need to visit a physical location.
4. **Enhanced security:** Digitalization brings advancements in security measures, such as encryption, biometric authentication, and fraud detection algorithms. These measures help protect users' financial information and transactions, creating a secure environment for conducting financial activities.

Table 1. Various E – Payment Indicator

S.No	Indicators	2018-19	2019-20	2020-21	2021-22	2022-23
1.	Large value credit transfers- RTGS (₹ lakh crore)	1,356.88	1,311.56	1,056.00	1286.58	1499.46
2.	Credit transfers through NEFT (₹ lakh crore)	227.94	229.46	251.31	287.25	337.20
3.	IMPS (₹ lakh crore)	15.90	23.38	29.41	41.71	55.85
4.	Credit transfer through UPI (₹ lakh crore)	8.77	21.32	41.04	84.16	139.15
5.	Payment Through debit/credit cards (₹ lakh crore)	11.97	14.35	12.94	17.02	21.52
6.	Total e-payments (₹ lakh crore)	1,637.13	1,620.89	1414.85	1744.14	2086.87
7.	Total e-payments (volume in lakh)	2,32,602	3,41,240	4,37,118	719531	1139476

Source: Annual Report of RBI, FY 2022-23

The table presents the overall e-payments raised by 419,945 in volume for the period 2022-23 as compared to 282413 in 2021-22. Total e-payments fell in value during the FY 2019-20 and 2020-21 but shows positive growth from FY 2021-22. Same there was a decline in RTGS in 2019 -20 to 2020-21 but also increasing during 2021-22. Payment using plastic card increased in amount. IMPS transactions also raised. Credit transfers via UPI also increased by a significant percent over the years. digital financial inclusion helps in the improvement of a savings of people which is essential for a country's economic progress and development.

Despite the significant benefits and increase in the volume result in contribute to economic growth, it is also important to consider the barrier such as limited internet connectivity, lack of digital literacy, affordability of devices, and language barriers so that all segments of society can benefit from digital financial inclusion.

CURRENT HURDLES IN THE PATH OF DIGITAL FINANCE

1. People living in backward areas still don't have access to the digital infrastructure like mobile phones, internet facilities that is required for regular use of digital services.
2. Non-availability of information about digital product and services in regional language.
3. Lack of awareness about various digital product and services available and how to access them result in financial illiteracy.
4. It is difficult to build trust among customer to shift from traditional to digital methods.
5. Require cooperation from various stakeholders to make it a success.
6. Lack of demand from consumer side as a major hurdle as people mainly prefer cash.

CONCLUDING

Financial Inclusion brings excluded people into a formal banking system. It is important for economic development of a country as it motivate people to save which help to create infrastructure. It has become a topic for discussion taking attention of authorities worldwide. In India government take initiatives regularly to speed up financial inclusiveness from banking reforms, Pradhan Mantri Jan Dhan Yojana in 2014 to net banking. The development of technology, internet facilities, active mobile users play an important role in the success of financial Inclusion but at same time there are several obstacles which need to be addressed such as security and privacy issues, illiteracy, insufficient digital infrastructure. The purpose of digital finance is to connect the poor with the system for that all these issues must be resolved.

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A STUDY ON THE FACTORS CAUSING LEADERSHIP CHALLENGES HARMONY IN 5 STAR HOTELS IN DELHI

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ABSTRACT

In this research paper Researcher has attempted to identify those factors which resolve leadership challenges and and simultaneously biggest reason for maintaining harmony in 5 star hotels in Delhi NCR. Harmony resolves all types of conflict and crucial for employee retention, engagement and achieving of company goals. For this purpose, a set of questionnaires distributed among female managers working in five star Hotels in Delhi. On the other hand secondary data had been used to support the findings of study.

Keywords: Leadership challenges, Harmony, 5 Star Hotel.

INTRODUCTION

Leaders help themselves and others to do the right things. They set direction, build an inspiring vision, and create something new. Leadership is about mapping out where you need to go to "win" as a team or an organization; and it is dynamic, exciting, and inspiring. Leaders set the direction; they must also use management skills to guide their people to the right destination, in a smooth and efficient way. That Leader can be male or female gender. Leadership challenges arise due to communication issues, conflict, resistance to change, low employee morale, low motivation, poor relationship. Harmony manifests itself in good judgment and in the organizational context it means the efficiency or effectiveness of taking right decisions timely and avoiding organizational confrontation and conflict. Organisations are groups of people with a common purpose. This simplistic and basic definition of an Organisation gives us a clue that organization as a structure must be glued or bound together (Cohesive). Most economic activity is performed in formal organizations. Gender is such a constitutive part of formal organizations that efforts to match worker and activity are often efforts to match gender and activity: finding men to do men's work, finding women to do women's work (Acker, 1990; Cockburn, 1988). Richard Martell and Christopher Parker identified stereotype as a major barrier for women. Women has been treated as a second-class citizen. (Dutta, 2017). There are several do's and don't's made in society for women. According to Global Gender Gap report 2010, there is not even a single country where pay for women is equal to men. Not even the Nordic countries. Pay parity among BRIC (Brazil, Russia, India and China) is even less not even one country exhibit equal pay for both gender. According to one survey women account for just 14-16% of board position globally. A high-profile women business leader, such as IMF boss Christine Lagarde and Facebook's Sheryl Sandberg said strong gender stereotype were preventing women from rising to the top of corporations. (Davos, 2013, The Economic Times). As per the study conducted by india-stat.com women contribute 9.1% of total workforce in the hotels and restaurant & men 90.9% merely having 0.9% share. Still the percentage of women is less as compared to men. Females are underrepresented with 8% board seats and 4% highest titles in the food service industry (Martin 2000). Gender inequalities affect the hiring, pay, training and promotion of women which lead to disharmony in organization. Training sessions & discussions in a structured way is a great advantage for women looking for leadership roles in organization. (Stamarski & Hing 2008). Leaders are important as they affect the other organizational structures, processes, and practices. Specifically, leaders set culture, set policy, set strategy, and are role models for socialization. An underrepresentation of women in leadership can be perpetuated easily because the gender of organizational leaders affects the degree to which there is gender discrimination, gender supportive policies, and a gender diversity supportive climate within an organization. (Ostroff, 2012)

Objective

1. It will also investigate the factors which resolve the leadership challenges of women at senior level position.

LITERATURE REVIEW

(Judi Brownell, 1993) Scarcity of role models for women managers has been taken as a major concern in women career development. In researcher study 42% female respondent found it as a significant factor. (Duncker, 2008) The researcher indicated that women can enjoy and advance in their career only by family support & trust in them. (Skalpe, 2007) examined gender gap among female CEO and due to which there is huge discrimination in salary fixation. WTO Symposium (2005) report that women play 70% role in tourism sector though this ratio find themselves discriminated at various levels. Gupta (2010) study attempt to state that men are preferred more over Female for managerial position even though there were equal hiring by HR. (Maden, 2010) found that for being a leader one has to be an avid reader and qualified enough to handle that senior position which lack among women. At the Vice President Level one of the studies concludes that one women can earn 42% less than that of male counterpart. (Solomon, 1990). (Yamak, Eyupoglu, 2017) study resulted that no statistically significant relationship exist between leadership style and demographic variables like age, gender etc.)

Schwanke (2013) researcher examine that various benefits like corporate, social, economic benefits should be given to women for advancement. Recognising & removing barriers is crucial for strength of companies & social networks. (Suntoo, 2019) recommended providing intensive training & encouragement from top management to prepare women to become managers at the very first stage in their career. (Chaubey & Ramaswamy, 2015) found that creating and maintaining harmonious condition is important for organization in a strategic way.

RESEARCH METHODOLOGY

For conducting this study, a list of 30 Female Managers had been considered in Delhi. The responses of respondents were collected through a set of structured questionnaires which was uploaded in google forms and circulated among all through Whats App, Gmail, Messenger, 07 via Phone Call. The data collected from primary and secondary source. The collected data was then analysed through google form.

POPULATION AND SAMPLE SIZE

The entire group of respondents were Hotel employees Male and Female taken into account to draw the inference from their responses. Count of Population and Sample size for conducting this study was 30. Responses were taken through a set of structured questionnaires. Paper had taken 30 respondents into account out of which 24 responses received.

DATA COLLECTION

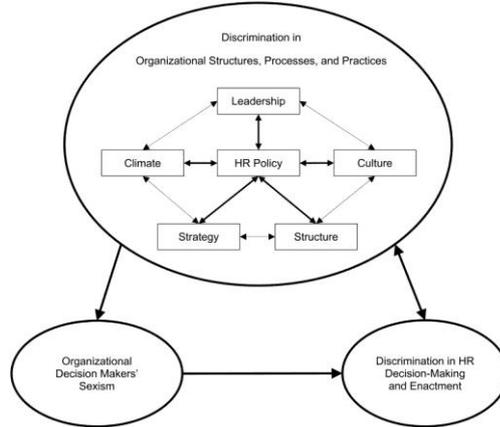
Primary data: Researcher framed a structured questionnaire and distributed among 30 female working at senior position in Hotel Industry. Total number of distributed are 30 but received responses of only 24 respondents. Secondary data: Secondary Data is collected from blogs, Online Resource, Research papers, Journals as well.

PRESENTATIONS OF FINDINGS

INTRODUCTION

This area will focus on the results obtained from the research. It will present the research in a systematic manner pertaining to the issue of low female managers and how it is responsible for organisational harmony in five-star hotels in Delhi. Questionnaire framed for respondents helped to determine various factors responsible for low female employees in star category hotels. These 30 respondents who are involved in research are working in various star category hotels in Delhi. With this a theoretical framework has come out which explain the discrimination in organisational structure responsible for female Managers in organisations. Even many of the papers claim that discrimination for positions starts at the hiring stage by HR in organization. Leader affects the climate of the company and either bring cultural diversity or not which affects strategy for hotel or the structure of an organisation. It affect salary fixation of employees based on their gender. It gives birth to gender disparity in an organisation (Fig 1)

Fig: 1 A Diagram depicting about the challenges in organization



Q1. Share your designation.

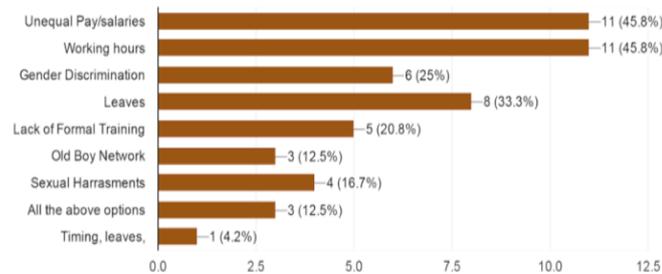
The First question is to identify the designation of respondents who had participated in this research. This was necessary to obtain a fair understanding of the designation to relate to the question. In this research, of the females who have prior experience in hotels and simultaneously involved in research.

Q2: Challenges faced at the workplace?

The first question displayed the maximum majority goes to Un equal pay /salaries or working hours which created disparity among various hierarchy of genders. Post this Gender discrimination were also given prime importance. Leaves has been an issue in the industry since the footfall of guest are high, somewhere policy has not been adhered by the industry which brought it as a leadership challenge. Formal training has been a lack across various genders which created the situation of layoff, mental stress and tensions among genders across various hierarchies.

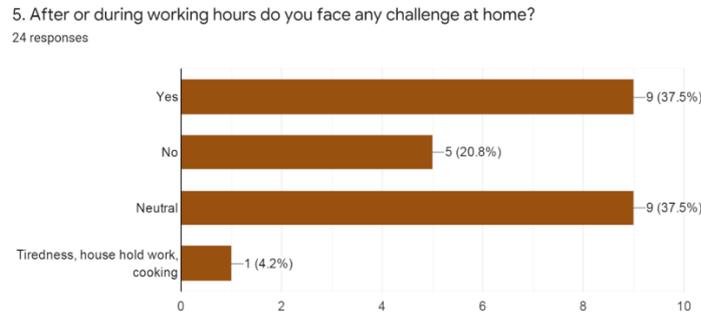
Figure 2: Graph depicting challenges percentage of respondents

4. What are the challenges you face at your work place?Please choose from the following list of options.
24 responses



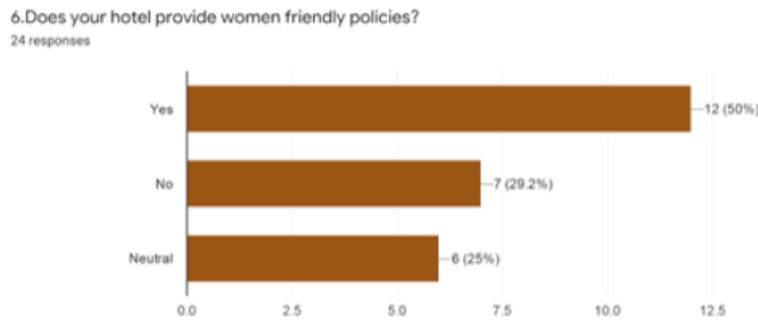
In this figure women employees face major challenge of unequal salary and long working hours which contribute at 45.8% of respondents.20.8% state they face lack of training which has to be provided by the organization.33.3% suffer from loss of leaves which is not provided by organisation due to which women feel secluded as they are unable to make balance among both.

Figure 3: Graph depicting working hours percentage of respondents



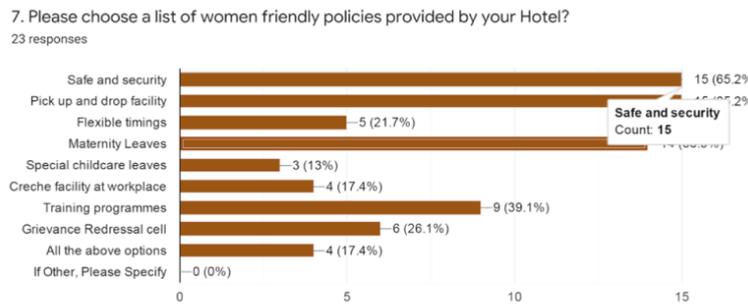
Working hours has been seen as a bigger challenge for female manager to strile balance between personal and professional work.37.5% states that they do face lot of working hours issues at their organization due to which either they leave their work or refuse to go at higher position.

Figure 4: Graph depicting policies percentage of respondents

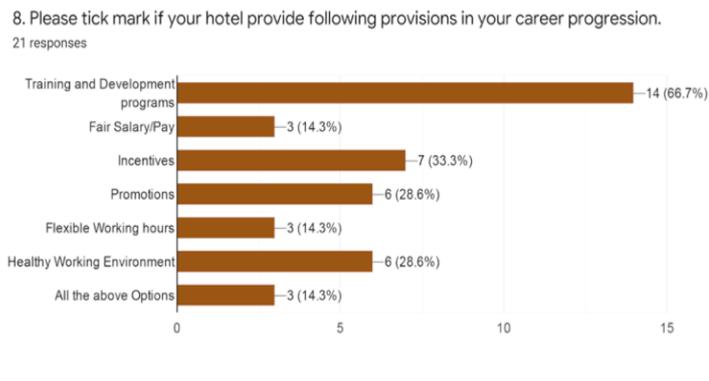


In the above graph friendly policies provided by hotel is 50% as they agree hotel provide safety and security and flexibility to work from home.25% states neutral response.

Figure 5: Graph depicting the list of women friendly policies percentage of respondents



The maximum policy is safety and security provided by Hotel which is given as pick up and drop to all female employees according to their shift.26.1% states that grievance redressal forum is made at hotel for females.Very low percentage is given to childcare facility at workplace i.e 13%

Figure 6: Graph depicting provisions percentage of respondents

For progressing in career an organization provide training and development programs i.e 66.7%. After this 33.3% respondents states that incentives provided by hotel which is a motivation factor for career development.28.6% states healthy working environment to all female employees which is another reason to stay with hotel.lowest percentage of 14.3% given to flexible working hours that means very few females agree that hotel provide flexible working hours

FINDINGS

The findings states that gender inequality arise in the organization due to lack of females in senior position causing disharmony and conflict in organisation.Some females receive support of family but lack support in professional front.It creates unhealthy environment and hinder organisation growth. The act (Remuneration Act 1976) has been framed by government where equal pay should be provided to both the gender and pay should not be decide the basis of gender but skill and talent one possesses.Many of the studies claim that discrimination start at the hiring stage only for the senior position.The talent of women is going unrecognizable by the organization.

RECOMMENDATIONS

The study has revealed various challenges being faced by female managers as well as organization in Delhi NCR. The high attrition rate of female is due to low salary being paid and studies claim that discrimination start at the hiring level by the Human Resource department, which indirectly affect organization strategic goal and healthy environment.

This study revealed that hotels do give good facilities to women but still the number of women is very less as compare to males especially in senior position in Delhi NCR. While ually reaching at higher position become their dream due to some hinderance created by hotel.The policies need to be revised especially for women so that equal opportunities can be created for female managers like men.Though there are various act constituted by government still companies donot follow same act and work operate under their organization rules. According to the catalyst research women account on an average for 46.4% of Travel and Toursim's employment compared with 43.3% employment in the economy as a whole therefor a proactive role of government is required.

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TOWARDS SUSTAINABLE DEVELOPMENT: BALANCING ENVIRONMENTAL, SOCIAL, AND ECONOMIC DIMENSIONS

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ABSTRACT

In recent years, the concept of sustainable development has gained significant attention as societies grapple with the urgent need to address pressing global challenges such as climate change, poverty, inequality, and resource depletion. This chapter aims to provide an in-depth exploration of sustainable development, tracing its historical evolution, discussing key principles, and highlighting the interconnectedness of its environmental, social, and economic dimensions. By examining various strategies and approaches, we will emphasize the importance of balancing these dimensions to achieve long-term sustainability.

Keywords: Sustainable development, Sustainability, Lifestyle, Globalization

INTRODUCTION

HISTORICAL EVOLUTION OF SUSTAINABLE DEVELOPMENT

Early environmental movements and the growing awareness of resource limitations are the roots of the idea of sustainable development. A more comprehensive and balanced approach to growth became necessary as worries about pollution, deforestation, and species extinction grew. The Brundtland Report, which was published in 1987, popularized the definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The chapter examines how sustainable development first gained attention in the 1980s. The chapter further examines the landmark Earth Summit held in Rio de Janeiro in 1992, where sustainable development gained international recognition and a global action plan was set forth. The Rio Declaration on Environment and Development and the Agenda 21 provided frameworks for integrating environmental, social, and economic considerations into development strategies. The chapter also highlights the significance of the Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, as a comprehensive and ambitious agenda for achieving sustainable development by 2030.

KEY PRINCIPLES OF SUSTAINABLE DEVELOPMENT

1. To understand sustainable development, it is crucial to examine its key principles. The chapter delves into four fundamental principles that underpin sustainable development:
2. **Inter-generational equity:** The significance of addressing current demands without compromising the capacity of future generations to address their own needs is emphasized by this principle. It calls for ethical management and acknowledges that resources are limited.
3. **Environmental stewardship:** Sustainable development recognizes the need to manage and preserve natural resources and ecosystems responsibly. This principle highlights the importance of maintaining biodiversity, reducing pollution, and mitigating climate change to ensure the long-term well-being of both humans and the planet.
4. **Social inclusivity:** A sustainable future requires fair and equitable access to resources, opportunities, and benefits for all members of society. This principle emphasizes the eradication of poverty, reducing inequality, promoting social justice, and ensuring that no one is left behind. **Economic viability:** The goal of sustainable development is to encourage economic growth that is both socially and environmentally inclusive. The adoption of sustainable business practises, ethical purchasing and production habits, and the incorporation of social and environmental costs into economic decision-making are all encouraged by this notion.

ENVIRONMENTAL DIMENSION OF SUSTAINABLE DEVELOPMENT

The environmental dimension of sustainable development focuses on strategies and initiatives to protect and enhance the natural environment. This section explores various key areas and approaches:

1. **Climate change Mitigation and Adaptation:** Sustainable development demands all-encompassing solutions to cut greenhouse gas emissions and prepare for climate change's effects since it must be addressed urgently. The chapter emphasizes the significance of creating robust infrastructure, increasing energy efficiency, and switching to renewable energy sources.
2. **Biodiversity Conservation and Ecosystem Restoration:** Preserving biodiversity and restoring ecosystems are crucial for sustaining life on Earth. The chapter examines the significance of protecting vulnerable ecosystems, conserving endangered species, and restoring degraded habitats.
3. **Sustainable Land use and Resource Management:** To achieve sustainable development, responsible land use and resource management are essential. The chapter explores strategies such as sustainable agriculture, forest management, and efficient water resource utilization.
4. **Waste Reduction and Circular Economy Principles:** Sustainable development calls for reducing waste generation, promoting recycling and reuse, and adopting circular economy principles. The chapter discusses the importance of waste management strategies, eco-design, and the promotion of a circular economy to minimize resource consumption and waste generation.

SOCIAL DIMENSION OF SUSTAINABLE DEVELOPMENT

The social dimension of sustainable development focuses on fostering inclusive societies, eradicating poverty, and promoting social justice. This section explores key areas and approaches:

1. **Poverty alleviation and Social Justice:** Sustainable development aims to eradicate poverty in all its forms and dimensions. The chapter examines strategies such as inclusive economic growth, access to basic services, social protection measures, and poverty reduction programs.
2. **Access to Education, Healthcare, and Basic Services:** Sustainable development emphasizes the importance of providing universal access to quality education, healthcare, clean water, sanitation, and other basic services. The chapter explores the significance of investing in human capital and ensuring equal opportunities for all.
3. **Gender equality and Women's Empowerment:** Gender equality is a fundamental component of sustainable development. The chapter discusses the importance of promoting women's empowerment, ensuring equal rights, eliminating gender-based discrimination, and addressing gender disparities in various sectors.
4. **Inclusive and Participatory Governance:** Sustainable development requires inclusive and participatory decision-making processes that involve all segments of society. The chapter examines the importance of accountable and transparent governance structures, citizen engagement, and the inclusion of marginalized groups in decision-making processes.

ECONOMIC DIMENSION OF SUSTAINABLE DEVELOPMENT

The economic dimension of sustainable development focuses on promoting economic growth that is environmentally sustainable and socially inclusive. This section explores key areas and approaches:

1. **Sustainable business practices and corporate social responsibility:** The chapter examines the role of businesses in contributing to sustainable development through responsible practices, ethical supply chains, and corporate social responsibility initiatives. It highlights the significance of integrating sustainability into business models and fostering sustainable consumption patterns.
2. Green technologies and innovation are promoted as a means of fostering sustainable economic growth as part of sustainable development. The chapter discusses the value of supporting clean, renewable energy sources, encouraging technical developments that assist sustainable development, and investing in research and development.

3. **Sustainable Agriculture and Food Systems:** Agriculture plays a crucial role in sustainable development, considering its impact on food security, rural development, and natural resource use. The chapter discusses strategies such as agroecology, sustainable farming practices, and promoting sustainable and inclusive food systems.
4. **Renewable Energy and Energy Efficiency:** Transitioning to renewable energy sources and improving energy efficiency are central to sustainable development. The chapter explores the significance of renewable energy technologies, energy conservation measures, and the role of policy frameworks in driving sustainable energy practices.

ACHIEVING INTEGRATION AND BALANCE

1. This section emphasizes the importance of achieving integration and balance among the environmental, social, and economic dimensions of sustainable development. It explores various approaches and mechanisms to facilitate this integration:
2. **Policy coherence and institutional frameworks for sustainable development:** Effective governance structures and policy coherence are essential for aligning environmental, social, and economic objectives. The chapter discusses the significance of integrated policy frameworks, cross-sectoral coordination, and institutional mechanisms to promote sustainable development.
3. **Sustainable development indicators and monitoring mechanisms:** Monitoring progress towards sustainable development goals is crucial for assessing the effectiveness of policies and initiatives. The chapter explores the importance of developing and using sustainable development indicators to track progress, identify gaps, and inform decision-making processes.
4. **Multi-stakeholder collaborations and partnerships:** Sustainable development requires collaborative efforts among governments, businesses, civil society, and communities. The chapter discusses the significance of multi-stakeholder collaborations, public-private partnerships, and knowledge-sharing platforms in fostering sustainable development initiatives.
5. **Education and awareness for sustainable lifestyles:** Promoting education and raising awareness about sustainable development are crucial for driving behavioral change. The chapter explores the role of education systems, public campaigns, and community engagement in fostering sustainable lifestyles and empowering individuals to make informed choices.

CONCLUSION

In conclusion, sustainable development represents a holistic and integrated approach to addressing complex global challenges. Achieving a balance between the environmental, social, and economic dimensions is crucial for building a sustainable future. By implementing the key principles and strategies discussed in this chapter, policymakers, businesses, civil society, and individuals can contribute to a more equitable, resilient, and prosperous world for present and future generations. By comprehending the historical evolution, key principles, and interconnectedness of sustainable development, societies can adopt strategies and approaches that promote balance among its environmental, social, and economic dimensions. This necessitates a transformative shift in mindset and practices. The chapter concludes by highlighting the ongoing importance of sustainable development as a guiding principle for shaping a sustainable and inclusive future.

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WOMEN ENTREPRENEURS: ISSUES AND CHALLENGES

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ABSTRACT

We can achieve economic development and shared prosperity only if men and women participate fully in the globalized and liberalized India. Support programmes for women entrepreneurs have acquired traction and importance in recent years as a means of empowering them, creating jobs, and increasing productivity at the national and regional levels. Women play an important role as employees and job creators in developing countries. Women entrepreneurs in India are unable to expand their businesses from micro or small to medium or large productive firms with changed economic impact. The globalization period has boosted the role of female entrepreneurs. However, without the engagement of women, who constitute a substantial portion of the population, India may fail to reap the benefits. Skill-based, knowledge-based education allows women to transition from homemaker to job creator. When a woman becomes educated, she educates whole generation. Education increases knowledge, which allows for greater access to resources and opportunities. This study analyzes the conceptual and operational framework of Indian women entrepreneurs, to examine obstacles that women entrepreneurs confront and to discuss the role of government in promoting women entrepreneurs in India.

Keywords: Development, Education, Empowerment, Women Entrepreneur

INTRODUCTION

In order to build a good nation, women must be empowered. A stable society is ensured when women are given more authority. Because of the significance of women's beliefs and value systems, empowering women is essential for the development of a good family, good society, and ultimately a good nation. Today's strong feminist discourse includes topics like sustainable development, labour force participation, and female empowerment. However, with economic reforms, there is a transitory trend in women's engagement in the growth of an economy, and women participation in corporate entities has been outstanding. According to traditional cultural perception, women's roles are restricted to the four walls of the home. India currently has the second-largest startup environment in the world, and growth there is predicted to be between 10 to 12 percent. Women make up 48% of the population of the nation, it is impossible to imagine economic progress without women serving as its primary drivers.

According to the World Development Report 2012, women live in a world that has improved dramatically. But still there are some gaps in some areas that need to be improved. Empowered women are overcoming the obstacles and rising to the position of leaders. Entrepreneurship is a multifaceted task that is also necessary for initiating and maintaining economic development. Entrepreneurship has been recognized as a crucial activity in the growth and upkeep of international economies since the 1930s. Women's entrepreneurship is one of the emerging concepts that have a positive impact on economic empowerment for women. Women's contribution to economic activity will boost productivity and, as a result, accelerate growth. Also, the gender-based inequalities and societal expectations will get reduced that restrict female employment and entrepreneurial skills. Women

have been involved in economic activity in India for many decades because they are natural entrepreneurs. Entrepreneurship defines a nation's economic destiny by creating wealth and job opportunities. Entrepreneurs have a significant impact on promoting and maintaining socioeconomic development. Entrepreneurship in general, and female entrepreneurship in particular, are essential to the economy.

WOMEN EMPOWERMENT IN INDIA

The Indian Constitution authorises the state to take measures of positive discrimination in favour of women in order to improve their standard of living, in addition to granting women equality. Our laws, various plans and programmes, development strategies, have all attempted to advance women in many fields. Beginning with the Fifth Five Year Plan (1974–1988), the focus on women's issues switched from welfare to development and then from development to empowerment beginning with the Eighth Five Year Plan. The National Policy for the Empowerment of Women, which was passed by the Government of India (GoI) in support of Women's Empowerment (Swashakti), aims to advance the development and empowerment of women.

The National Mission for Empowerment of Women (NMEW), established by the GOI, aims to strengthen broad policies that promote the overall development of women. Enhancing cross-sector convergence and making it easier to coordinate all activities for the socioeconomic advancement of women across ministries and departments are among its responsibilities. SHG development for economic empowerment of women, microcredit, vocational training, and investment in skill and entrepreneurship development are some of NMEW's core strategies. This effectively illustrates the fact that teaching women to read and write would not be enough; they also need occupational training or skills in order to be independent and support their families financially. In recent years, women have shown a growing interest in jobs that pay well, entrepreneurship—activities and self-employment, that also advance property rights, social equality, political representation, family development, individual liberties, market development, community development, and ultimately national development.

The Following are the Objectives of the Study

1. To study the conceptual and operational framework of Indian women entrepreneurs.
2. To analyze the challenges faced by women entrepreneurs in India
3. To discuss the role of government in promoting women entrepreneurs in India.

METHODOLOGY

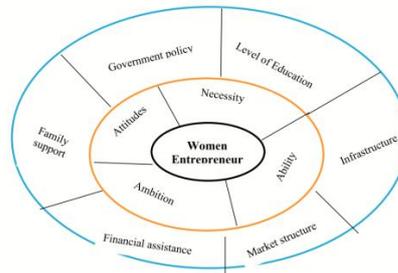
Secondary data is used for this study. Data is taken from a variety of published documents, magazines, journals and books that are both printed and available online.

REVIEW OF LITERATURE

The study findings indicate that women have less involvement in entrepreneurial activities than that of men. They are an influential force and productive members of the business, political, academic, and professional spheres (Javaheri, 2005). On the contrary, they have strict domestic obligations, large families, and tasks that they find difficult to balance adequately (Otengo, 2011). They have left their kitchens and engaged with a more substantial level of professional movement as education and awareness have advanced. Women have successfully approached males in the business and entrepreneurship fields in emerging economies (Agarwal and Lenka, 2016). According to Watkins et al. (2008), the strongest indicators of business success were family support and market expertise. Field et al. (2010) conducted research on business training programmes in India, comparing various candidate's traits and abilities, and found that business education has a positive impact on businesswomen's expected earnings (Bhatnagar et al., 2013). Furthermore, Davis (2011) discovered a prerequisite for education in service fields such as "identifying mentors and role models" and "legal issues," which showed a substantial association. Additionally, the survey revealed that, regardless of area, female entrepreneurs have the same needs for support and training as male entrepreneurs (Bhardwaj and Aarushi, 2013). According to Rudhumbu et al., (2020) Women entrepreneurs faced a complex set of obstacles, such as difficulty accessing credit, ignorance of financial resources and technical assistance, a lack of training leading to a lack of technical skills, intense market competition, ignorance of marketing strategy and marginalisation of

women. They also stated that specialised education and training in entrepreneurship provide opportunities for women business owners to increase their knowledge and technical proficiency.

Fig. 1: Factors affecting Women Entrepreneurship



Challenges faced by Women Entrepreneurs

Numerous studies show that the success of women entrepreneurs is hampered by a complex interplay of micro-economic and macroeconomic issues in the economies, such as restricted access to money, a lack of personal assets, stereotyping (marginalisation), and fear of failure. It is still challenging for female entrepreneurs to get capital to launch or run a firm because the majority of lending institutions require collateral. These are some of the difficulties that women entrepreneurs face:

1. Lack of access to finance

Lack of appropriate financial resources to launch a firm is the main obstacle women entrepreneurs faced. It is not possible for women to become successful in the ventures without a solid financial base. Finance plays a crucial role in assisting women in building the foundation for their enterprises and guaranteeing efficient replenishment of the necessary resources. The majority of banks and investors don't offer financing for women to start enterprises because they don't believe in their capacity to repay loans. This is due to the possibility that some of the women's business knowledge is inadequate, which leads to poor company plans. Additionally, it can be because the woman lacks collateral.

2. Lack of Entrepreneurship education

One of the most crucial traits for a modern entrepreneur is having past experience in managing a profitable business. The entrepreneur should have professional experience working in the relevant sector or a business management degree to make up for a lack of business experience. Unfortunately, India does not give women's education the priority it needs. As a result, many potential women business owners are undereducated and unable to operate profitable enterprises. As more women get access to higher education, they are becoming more competitive.

3. Low Risk-Taking Capability

Women entrepreneurs face the difficulty of low risk-taking abilities when compared to their male colleagues, owing to their upbringing. They are even subjected to discrimination in the selection of or access to entrepreneurship development courses. Inferiority complexes, unplanned expansion, a lack of infrastructure, and hesitating to make prompt decisions all raise the rate of risk and the likelihood of loss. To invest in and maintain a successful firm, the entrepreneur must be willing to accept some inherent risk. Women frequently lack the ability to make independent decisions and lack the financial freedom. Since they have little faith in their own judgement, they are also risk-averse. With each generation, this is changing more and more as women take control of their finances and reduce risks.

4. Inadequate entrepreneurial training

A large majority of women lack adequate technical and professional training to start a new business. Through EDPs, all female entrepreneurs receive the same training. Second-generation female entrepreneurs do not require such training because they have prior company experience.

5. Lack of institutional and societal support

Most women entrepreneurs need more social support to start their companies from their family, friends, or the people around them. Lack of mentoring from the business community is one of the biggest problems facing women entrepreneurs in the nation. When it comes to institutional support, the circumstances are unchanged. Despite various schemes to support women entrepreneurs, many women do not obtain prompt guidance or support from authorities. Their confidence and capacity to take chances are negatively impacted by the absence of a strong support system.

6. Legal Formalities

It is very difficult for women entrepreneurs to comply with different legal formalities such as getting licenses, etc.

7. Patriarchal Society

The social environment in which women entrepreneurs must live and operate is among the most challenging aspects of their profession. Despite constitutional equality, women face prejudice in India. In the male-dominated Indian society, women are not treated equally, and male ego stifles female advancement. Entrepreneurship has historically been regarded a male domain, with the concept of women engaging in entrepreneurial activity considered a faraway dream. Any departure from the usual is discouraged and, if at all feasible, quickly stopped. Role conflict is something that women have to deal with from the moment they start any entrepreneurial effort. Women find it challenging to manage these conflicts and the conflicting roles. Women are supposed to cook, do housework, raise children, care for the elderly, and so on. Managing familial and professional commitments is difficult enough, however when you want to build a brand, it is much more challenging. The urge to conform to established gender roles is one of the hardest issues facing women entrepreneurs. They are regularly urged to give up their businesses in favor of a "simpler" profession that allows them to spend more time with their families and kids. Additionally, it is considered unfavorable for a woman to put her career before other things.

8. Lack of Entrepreneurial Ability

One of the most serious issues confronting women is a lack of entrepreneurial ability. A woman entrepreneur lacks basic entrepreneurial characteristics such as invention, risk taking, and so on. Many women attend the Entrepreneurship Development Programmers without having an entrepreneurial mindset. According to a study, only 7% of women are owners in the small scale business. Women who receive training from various institutes must be evaluated for aptitude through examinations, interviews, and other means.

ROLE OF GOVERNMENT IN PROMOTING WOMEN ENTREPRENEURS IN INDIA

The growth and development of women entrepreneurs must be hastened since women participation is essential to the development of the entrepreneurial sector. In order for women to actively engage in entrepreneurial activities, a conducive environment must be established. In order to encourage women entrepreneurs in India, governmental, nonprofit, promotional, and regulatory bodies must take action. To help women launch their own enterprises, the Indian government has created a number of training and development programmers as well as initiatives to create jobs. The following are the programmers: The government included a specific chapter on "Women's Integration in Development" in the seventh five-year plan, with the following recommendation:

1. **Specific Target Group:** It was advised that women should be treated as a specific target group in all major development activities in the country.
2. **Setting up Training Facilities:** The chapter also suggests developing and expanding facilities for women to receive vocational training in order to fulfill their changing needs and skill sets.
3. **Developing New Equipment:** Efforts should be made to boost their productivity and efficiency by implementing appropriate technology, equipment, and procedures.
4. **Promoting Aid:** It was advised that the necessary assistance be provided for marketing the products created by female entrepreneurs.

THE INDIAN GOVERNMENT ESTABLISHED SPECIAL PROGRAMMES TO ENHANCE EMPLOYMENT AND INCOME-GENERATING ACTIVITIES FOR WOMEN.

1. Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

This plan aims to give 10 million Indian youths practical, industry-relevant, skill-based training. On successful completion of training and assessment, trainees are granted a monetary prize as well as a government certification under this scheme. This assists them in obtaining a job for a brighter future. All candidates of Indian origin are eligible for this initiative.

2. Skill India Mission

The government introduced a programme called the Skill India Mission in an effort to encourage women to start their own enterprises. As technology grows more prevalent and work responsibilities expand, there is an increasing need for the government to bridge the skill gap. Since its inception in 2015, the Skill India programme has been addressing this need.

3. Apprenticeship Training Scheme (ATS)

Graduate apprentices, vocational apprentices, trade apprentices, technical apprentices and optional trade apprentices are the five different sorts of apprentices. The employer provides a monthly stipend to candidates. This programme attempts to make women more qualified for jobs in diverse industries.

4. Support for training and Employment Program for Women (STEP)

The STEP project aims to give women the employable skills and competencies they need to start their own businesses. Including but not limited to agriculture, horticulture, food processing, handlooms, tailoring, switching, and other industries, the STEP scheme will offer help for teaching employment and entrepreneurship skills in any area.

5. Help for Entrepreneurial and Managerial Development

MSME DIs regularly organise EDPs/MDPs for current and prospective businesses and charge a fee for such courses. It is suggested that these beneficiaries pay a stipend of Rs. 500.00 per capita per month instead of fees in order to encourage more entrepreneurs from the SC/ST, female, and physically challenged categories. 50,000 entrepreneurs will receive training in fashion technology, pharmaceuticals, agro & food processing, IT, biotechnology, catering, and other industries through specific courses offered by MSME.

6. CONCLUSION

Volunteering in the business, inventive abilities, and education are all vital elements for entrepreneurial success. The policy framework for developing entrepreneurial abilities, has broadened the horizon in addition to providing vocational education and training. Women, on the other hand, account for barely one-third of all economic firms. In India, there is enormous opportunity to tap into the untapped potential of women's entrepreneurship. Education is a vital human right that promotes social and personal development as well as the empowerment of women. Education enables individuals to break free from the chains of ignorance, avoid being deceived, and be excluded from the mainstream. In order to enable women to attain their goals and compete with males in a variety of spheres of life, education reform for women is crucial.

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FINANCIAL LITERACY & ITS CONTRIBUTION TO FINANCIAL INDEPENDENCY AMONG WOMEN

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ABSTRACT

Financial Literacy is the capacity to make sound judgments regarding the use of money as well as its management, and take effective measures. It covers the ability to learn about money choices, plan for future spending, make good decisions and manage issues arising from life events such as job loss, retirement savings or funding children's education. Financial literacy is crucial, and this cannot be emphasized enough. Because it helps people become self-sufficient and financially stable, financial literacy is crucial. They may create a practical roadmap to help them navigate daily life and make wise financial decisions with the help of literacy. A crucial component that may give women more control over their life, a boost in self-esteem, and equal status in family and community decision-making is financial literacy. We can reduce long-standing disparities and support national economic growth by providing women with financial knowledge and resources. India advances when women do, hence it is critical to emphasise and invest in women's financial literacy and wellbeing.

Keywords: Financial Literacy, Financially Independence, Women.

INTRODUCTION

It's difficult to manage money while juggling other commitments in life. Your next significant milestone will be easier for you to reach if you take the initiative to educate yourself about difficult financial choices. Every wise financial choice one make brings one a step nearer to one's objective. More women face challenges in financial literacy. The benefit of financial literacy for women is that it gives them the capacity to make wise financial decisions, assists them in developing long-term budgets, and allows for better money management, can boost their salary bargaining abilities, can make them feel more secure about their value, and can help them reach their financial objectives. So how can women acquire the information and skills necessary to efficiently manage their finances? How can they reach their financial objectives and make wise judgments regarding their future finances?

FINANCIAL LITERACY

Knowing how to handle your own finances, create a budget, and invest wisely is referred to as financial literacy. It takes more than just having money to build sustainable wealth in the world of investing and multi-channel wealth creation. Thus, maintaining financial management for women requires strong financial literacy.

Your connection with money starts with financial literacy, which you develop throughout your entire life. The earlier you begin, the better off you will be as education and its practical application is the key to success when it comes to money.

To properly participate in family financial matters, both men and women should learn about finances. The lack of information among Indian women has been noted, nevertheless. This might be because traditionally, women have been "homemakers," who don't worry about where money comes from or where it should go. However, financial literacy for women should be given top importance in light of the shifting economic landscape and the increased engagement of women in the workforce.

WOMEN AND FINANCIAL LITERACY

Women's independence, both financially and otherwise, is strongly influenced by their level of financial knowledge. Having poor financial literacy might result in a variety of issues. You might be more prone to debt accumulation, bad spending patterns, or a lack of long-term planning. People, especially women, are empowered to make autonomous decisions when they have financial literacy. When faced with emergencies or unforeseen circumstances, someone who understands money management can act appropriately.

Fewer women than males are confident enough to invest their money how they see fit. These low numbers demonstrate that financial literacy for women is still outside of the mainstream conversation, despite the fact that women's roles in the home and in society are expanding.

FINANCIAL INDEPENDENCE

Having enough money or assets to cover one's living needs for the rest of one's life without having to work or depend on others is the state of being financially independent. Passive income is a term that refers to revenue that is earned without the need to work a job.

SIGNIFICANCE OF FINANCIAL INDEPENDENCE

Financial literacy should be acquired by both sexes so that they can share responsibilities and make the most of their financial independence. According to experts, understanding financial literacy and actually putting it into practice in your life are two very different things. Here are some listed most important benefits of being financial literate

1. Own your life and your work

You have control over how you work, who you work with, and how long you work for if your passive income (income from investments and interest on savings) exceeds your outgoings. You are not at the whim of employers or bound by employment contracts. This increases your negotiating power for your future position. You can have more of what matters to you if your wage is unimportant. That could be project selection, autonomy, holiday pay, or working hours. The working world becomes much more fascinating if we are freed from the "golden handcuffs" of a wage. If your investments are covering your lifestyle costs, you might opt to start a business.

2. More Stable Financial Situation

Job security is a myth that is fading away. The prevalence of zero-hour contracts has profoundly altered how businesses conduct business. The concept of a lifetime job no longer actually exists. You will be in a better position to prevent being at the mercy of these variables if you are financially independent. Instead of being reliant on a wage, you can choose jobs that fit your approach to risk when you're financially independent.

3. Insurance for the Unemployed

You can continue to live a good lifestyle if you have savings and assets in place rather than depending on meagre unemployment benefits that barely cover the basics.

Just because you've made ends meet doesn't imply you should stop working. You can desire to enhance your fortune, make your lifestyle more comfortable, or put money aside for your kids. However, you may feel secure knowing that your way of life is safeguarded and you won't need to make any changes if either you or your partner loses your work.

4. Benefits of Additional Investments

You may obtain additional income from your assets and investments that you wouldn't normally get. Additionally, you can increase your personal wealth faster the sooner you attain financial freedom. It's common to hear people refer to compound interest as the eighth wonder of the world. You quickly profit from compound interest when you decide not to withdraw the money as your investments are earning and instead decide to reinvest it.

5. Retiring Early

Most nations are delaying retirement in order to keep up with our rising life expectancies. Whether at age 45 or 60, those who want to enjoy retiring early must have a source of income that will support their way of life long into old age. One must make sure they have a source of income that will support their way of life much past the normal lifespan.

6. Calmness of Mind

You'll have more freedom if your passive income is more than your minimum necessary expenses. Being free from the strain of a job-related income is immensely liberating. Many continue to work and build their personal wealth. But they do so stress-free, not worrying about getting the next promotion to get a pay rise. We can be happier if we can lessen the tensions in our lives. One of the most stressful aspects of life, and a frequent source of family conflicts, is money-related concerns. Freedom of choice is made possible by financial independence, which is why is so crucial.

Figure: <https://www.mutualfundssahihai.com/en/important-of-women-financial-independence>



Women's empowerment and financial literacy go hand in hand. Your ability to attain your life and career goals will improve as your financial literacy grows. Financial security provides a safety net in case of unanticipated occurrences. According to certain studies, women's financial independency frequently prevents them from leaving violent marriages or familial situations. Even for women who are employed, their salary is sometimes viewed as extra money, and they are expected to take on more duties at home as well. Hence it is important to be financially literate in order to have financial Independence.

In fact, financial literacy should be acquired by everyone irrespective of gender so that one may share responsibilities and make the most of their financial freedom. Thus, understanding financial literacy and really putting it into practice in your life are two very different things.

HOW CAN WOMEN BECOME FINANCIALLY EDUCATED?

The process of acquiring financial literacy thus includes learning through textbooks, authorities, and those who have firsthand knowledge of how to manage money.

Women who want to learn about money management have several options available to them today. There are a tonne of materials available online for anybody who wants to learn more. The stark fact is that women in India might not always have access to or knowledge of the Internet, making it difficult for them to learn these things on their own.

To Conclude, Financial independence and prudent spending are both outcomes of financial literacy, and both are necessary for a higher standard of life.

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GENDER SPECIFIC ISSUES AND CHALLENGES FACED BY DISABLED WOMEN IN INDIA: A CRITICAL REVIEW

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ABSTRACT

Disabled women in India face unique challenges that arise from the intersection of their disability and gender. This abstract presents a critical review of the literature exploring gender-specific issues and challenges faced by disabled women in India.

The review highlights the prevalent social and cultural attitudes that contribute to the marginalization and discrimination against disabled women. Stereotypes, prejudices, and stigma associated with disability and gender further exacerbate their vulnerability and restrict their access to education, employment, healthcare, and social participation.

The literature underscores the limited availability of comprehensive and inclusive policies addressing the specific needs and rights of disabled women in India. The existing disability policies and programs often disregard gender considerations, overlooking the multiple layers of discrimination and inequality faced by disabled women.

Furthermore, the review examines the intersectional dynamics that compound the challenges faced by disabled women belonging to marginalized groups such as Dalits, tribal communities, and religious minorities. These women confront compounded discrimination based on their disability, gender, caste, ethnicity, or religion.

Empowerment and inclusion programs for disabled women are explored as potential strategies to address these challenges. The review highlights the importance of ensuring disabled women's voices and experiences are central to the development and implementation of these programs. It also emphasizes the need for awareness campaigns, capacity-building initiatives, and the creation of safe spaces to promote the rights and well-being of disabled women.

Overall, this review underscores the urgency of recognizing and addressing the gender-specific issues and challenges faced by disabled women in India. By adopting a multi-dimensional and intersectional approach, policymakers, NGOs, and society at large can work towards creating an inclusive and equitable society that upholds the rights and dignity of all disabled women.

Keywords: India, Disability, Gender, Issues, Challenges, Equality, Women

INTRODUCTION

Disabled women in India face multiple layers of marginalization and discrimination, stemming from their disability, gender, and societal attitudes towards both. These women often encounter barriers to access education, employment, healthcare, and social participation, leading to exclusion and vulnerability. Despite constituting a significant proportion of the disabled population in India, their specific needs and challenges have been overlooked in policies and programs addressing disability and gender. This neglect could result in a lack of awareness of their basic rights and needs, threatening their empowerment and well-being.

This introduction aims to provide insights into gender-specific issues and challenges faced by disabled women in India. By exploring the intersection of disability and gender, this study will highlight the factors contributing to the marginalization and discrimination against disabled women. This study will also examine the prevailing social and cultural attitudes and how they affect the inclusion of disabled women in society.

The study will review relevant literature and emphasize the intersectional dynamics that affect the experiences of disabled women belonging to different marginalized groups. This review will consider the policy framework

that addresses the rights and well-being of disabled women in India. Finally, the study aims to explore potential empowerment and inclusion strategies that could mitigate the challenges faced by disabled women in India.

By providing insights into gender-specific challenges faced by disabled women, this study aims to generate awareness and understanding of their specific needs and perspectives. This study could inform the development of policies, programs, and services that address the unique challenges and promote the inclusion and empowerment of disabled women in India.

LITERATURE REVIEW

Disabled women in India face numerous challenges, shaped by the intersection of their disability and gender. This section of the study critically reviews the existing literature, highlighting gender-specific issues and challenges faced by disabled women in India. It explores the social and cultural attitudes, the policy framework, and the intersectional dynamics affecting the experiences of these women.

1. Social and Cultural Attitudes

The prevailing social and cultural attitudes in India contribute to the marginalization and discrimination against disabled women. Stereotypes, prejudices, and stigmas surrounding disability and gender intersect, leading to the devaluation of disabled women's worth and limiting their access to resources and opportunities. Society often views disabled women as burdens, reinforcing their exclusion from education, employment, and social life.

2. Limited Policy Framework

The existing disability policies in India often lack a comprehensive and inclusive approach to address the specific needs and challenges faced by disabled women. Gender considerations are often overlooked, resulting in a failure to recognize the multiple layers of discrimination and inequality experienced by this group. There is a lack of accessibility in public spaces, public transportation, and healthcare facilities, limiting their independence and overall quality of life.

3. Intersectionality and Marginalization

Disabled women in India belonging to marginalized groups face compounded discrimination based on their disability, gender, caste, ethnicity, or religion. Dalit disabled women; for example, face additional prejudice and barriers due to their caste. Tribal disabled women may confront cultural biases and limited access to resources. Intersectional disadvantages exacerbate the discrimination faced by these women, making them more vulnerable and marginalized.

4. Lack of Awareness and Empowerment

Disabled women's lack of awareness of their rights often results in their exclusion from decision-making processes and their limited access to support services. They face challenges in accessing information, especially if they have sensory disabilities. This lack of awareness and empowerment restricts their ability to advocate for their needs and participate actively in society.

5. Limited Inclusive Education and Employment Opportunities

Disabled women in India encounter significant barriers to education and employment opportunities. The education system often lacks the necessary accommodations, accessible infrastructure, and trained teachers, preventing disabled women from accessing quality education. Similarly, discriminatory beliefs and limited access to inclusive workplaces hinder their employment prospects and professional growth.

Overall, the literature demonstrates that disabled women in India face numerous gender-specific challenges and biases that compound the discrimination they experience based on their disability. The existing social and cultural attitudes, along with limited policy frameworks and intersectional dynamics, contribute to their marginalization and exclusion from various spheres of life. To address these challenges, it is crucial to adopt an intersectional and inclusive approach in policies, programs, and services. Empowering disabled women through awareness campaigns, capacity-building

initiatives, and the creation of safe spaces will be crucial in promoting their rights and well-being in Indian society.

CHALLENGES FACED BY DISABLED WOMEN IN INDIA

Disabled women in India face multiple challenges, which arise due to the intersection of their disability and gender. These challenges can be categorized into the following

1. **Inaccessibility:** One of the significant challenges faced by disabled women in India is the inaccessibility of infrastructure, public spaces, and services. The lack of accessible transportation, buildings, and public spaces limits their mobility and independence. It also restricts their access to education, employment, and healthcare services.
2. **Discrimination:** Disabled women face discrimination due to the intersection of their gender and disability. They are often stereotyped, stigmatized, and devalued based on society's prevailing attitudes towards disability and gender. This discrimination results in limited access to resources and opportunities.
3. **Limited Employment Opportunities:** Disabled women face significant challenges in accessing employment opportunities. They face discrimination, lack of reasonable accommodations, and limited access to skill-building opportunities. These issues further compound the challenge of unemployment and underemployment, leading to financial insecurity and poverty.
4. **Limited Education Opportunities:** Disabled women in India face significant barriers to education opportunities. The education system in India often lacks appropriate accommodations, accessible infrastructure, and trained teachers, limiting their access to quality education. This limits their ability to pursue higher education and build professional careers.
5. **Healthcare:** Disabled women face many challenges in accessing healthcare services in India. The healthcare system often lacks accessibility and is not equipped to provide appropriate support and care for their needs. As a result, disabled women face significant challenges in accessing essential healthcare services.
6. **Lack of Legal Support:** Disabled women face challenges in accessing legal support due to ignorance and discrimination from the legal system. This results in limited access to legal remedies, making them vulnerable to abuse, violence, and exploitation.
7. **Gender-based Violence:** Disabled women are particularly vulnerable to various forms of gender-based violence, including physical, sexual, and emotional abuse. They may face additional barriers in reporting and seeking justice due to their disability and societal attitudes towards disability.
8. **Limited Participation in Decision-making:** Disabled women often face exclusion from decision-making processes at both the household and community levels. This limits their ability to actively participate in shaping policies and programs that impact their lives.

It is important to note that these challenges and issues may vary across regions and communities within India. Conducting more research and gathering up-to-date data can provide a more comprehensive understanding of the specific experiences and needs of disabled women in India.

REGION-WISE INFORMATION ON THE OVERALL SITUATION OF DISABLED WOMEN IN THE COUNTRY

Region-wise information on the overall situation of disabled women in the country is as follows

1. **Northern India:** Disabled women in Northern India face challenges in accessing education, healthcare, and economic opportunities. The social stigma around disability is particularly strong in this region, which further marginalizes disabled women.
2. **Southern India:** Southern India has made significant progress in improving the situation of disabled women. The region has a higher literacy rate and a more inclusive culture, which has helped disabled women to access education and participate in economic activities.

3. **Eastern India:** This region has a significant tribal population, and disabled women belonging to these communities often face additional barriers. Lack of awareness, limited access to healthcare, and poor infrastructure are some of the challenges faced by disabled women in Eastern India.
4. **Western India:** Disabled women in Western India face issues related to unemployment and lack of economic opportunity. Stigma and discrimination towards disability are also prevalent in this region.

It is important to note that the experiences of disabled women in India can vary significantly by community, social economic status, and type or degree of disability. Thus, for a more comprehensive understanding of the specific challenges and experiences faced by disabled women in different regions, more research and data collection are needed.

STEPS TAKEN BY GOVERNMENT REGARDING GENDER SPECIFIC ISSUES AND CHALLENGES FACED BY DISABLED WOMEN IN INDIA.

The Government of India has taken several steps to address the gender-specific issues and challenges faced by disabled women in the country. Here are some notable initiatives and policies:

1. **Rights of Persons with Disabilities Act, 2016:** This act provides recognition and protection of the rights of persons with disabilities, including women. It ensures equal opportunities, non-discrimination, and access to healthcare, education, and employment.
2. **National Policy for Persons with Disabilities, 2016:** This policy aims to create an inclusive society for persons with disabilities, including women. It focuses on empowerment, accessibility, healthcare, education, employment, and social security.
3. **Beti Bachao, Beti Padhao (Save the Girl Child, Educate the Girl Child) Campaign:** This nationwide campaign focuses on addressing the gender imbalance and improving the status of the girl child. It provides monetary incentives and awareness programs to encourage the education and empowerment of girls, including those with disabilities.
4. **Schemes for Women with Disabilities:** The government has implemented various schemes to support women with disabilities, such as the Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) scheme and the Support to Training and Employment Program for Women (STEP).
5. **Rehabilitation Council of India (RCI):** RCI is a statutory body that works towards the empowerment of persons with disabilities, including women. It regulates the training programs, standards, and certification of professionals working in the field of rehabilitation.
6. **State-specific initiatives:** Several states in India have launched specific programs and policies to address the challenges faced by disabled women. For example, the Tamil Nadu government launched the Ambedkar Marriage Assistance Scheme for Daughters of Disabled Persons, providing financial support for marriage expenses.

These are some of the steps taken by the Government of India to address the gender-specific issues and challenges faced by disabled women. However, it is important to continue advocating for their rights and ensuring effective implementation of these initiatives.

LAWS REGARDING GENDER SPECIFIC ISSUES AND CHALLENGES FACED BY DISABLED WOMEN IN INDIA.

In India, there are several laws and acts that address gender-specific issues and challenges faced by disabled women. Here are some of the important legislations:

1. **Rights of Persons with Disabilities Act, 2016:** This act provides comprehensive rights and protections for persons with disabilities, including women. It covers various aspects such as non-discrimination, accessibility, education, employment, and health.
2. **Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013:** This act aims to prevent and address sexual harassment of women, including disabled women, at the

workplace. It mandates the establishment of an internal complaints committee and sets guidelines for dealing with complaints.

3. **Protection of Women from Domestic Violence Act, 2005:** This act addresses various forms of domestic violence against women, including disabled women. It provides protection orders, residence orders, and monetary reliefs for survivors of domestic violence.
4. **Dowry Prohibition Act, 1961:** This act prohibits the giving or taking of dowry, which is a prevalent societal issue that can disproportionately affect disabled women who may be seen as more vulnerable.
5. **Maternity Benefit Act, 1961:** This act provides maternity benefits to women, including disabled women, by ensuring paid leave before and after childbirth, as well as other related benefits.
6. **Criminal Law (Amendment) Act, 2013:** This act was enacted to strengthen laws against sexual offenses and improve the safety and security of women, including disabled women. It introduced new offenses such as acid attacks, stalking, and voyeurism, and increased punishment for rape.
7. **Hindu Succession Act, 1956:** This act was amended in 2005 to grant equal rights and entitlements to daughters in Hindu families in matters of inheritance and property rights.

These laws aim to protect and promote the rights of disabled women in India. It is important to ensure awareness, implementation, and enforcement of these laws to address the unique challenges they face.

SUGGESTIONS

Here are some suggestions to address the gender-specific issues and challenges faced by disabled women in India:

1. **Inclusive Policy Implementation:** The Indian government should formulate and implement policies that specifically address the needs and rights of disabled women. These policies should focus on promoting their inclusion, access to healthcare, employment opportunities, and protection against violence and abuse.
2. **Awareness and Sensitization:** Conduct awareness campaigns to challenge societal stereotypes, stigma, and misconceptions surrounding disability and gender. Sensitize the public, including healthcare professionals, employers, and the general population, about the unique challenges faced by disabled women and the importance of their inclusion and empowerment.
3. **Accessible Healthcare:** Ensure that healthcare facilities are physically accessible and equipped to meet the specific needs of disabled women. Train healthcare professionals on disability-inclusive healthcare practices to provide quality and gender-sensitive services.
4. **Legal Framework and Protection:** Strengthen legal frameworks to protect disabled women from violence, abuse, and discrimination. Enforce existing laws and create mechanisms for reporting, investigating, and prosecuting cases of violence against disabled women. Provide support services such as helplines, counseling, and shelters to ensure their safety and well-being.
5. **Economic Empowerment:** Promote economic opportunities for disabled women by advocating for reasonable accommodations in the workplace, encouraging inclusive hiring practices, and providing vocational training programs. Support entrepreneurship initiatives and access to financial resources to enable their economic independence.
6. **Support Networks and Social Integration:** Establish support networks, self-help groups, and community-based organizations to provide disabled women with a platform for sharing experiences, accessing peer support, and advocating for their rights. Promote their social integration by creating inclusive recreational activities and cultural events.
7. **Research and Data Collection:** Encourage research on the intersectionality of gender and disability in India. Collect comprehensive data on the challenges faced by disabled women to inform evidence-based policies and interventions.

By implementing these suggestions, India can work towards addressing the gender-specific issues and challenges faced by disabled women, fostering a more inclusive and equal society for all.

FINDINGS

Several studies and research have shed light on the gender-specific issues and challenges faced by disabled women in India. Here are some key findings:

1. **Intersectionality of Gender and Disability:** Disabled women face unique challenges due to the intersectionality of their gender and disability. Research shows that they are more likely to experience multiple forms of discrimination based on their gender, disability, and other factors such as caste, class, and religion.
2. **Invisibility and Marginalization:** Disabled women are often overlooked and marginalized in society. They face invisibility and lack of recognition in both disability and women's rights movements, which limits their access to support, resources, and opportunities.
3. **Higher Vulnerability to Violence and Abuse:** Disabled women are at a higher risk of experiencing violence and abuse compared to non-disabled women. They are more vulnerable to physical, sexual, and emotional abuse, often perpetrated by family members, caregivers, or within institutional settings. Research indicates that disabled women are less likely to report abuse due to social stigma, lack of support, and fear of reprisal.
4. **Limited Access to Healthcare:** Disabled women face barriers in accessing healthcare services due to various factors, including physical inaccessibility, lack of adequate facilities, and lack of trained healthcare providers who can address their specific needs. This limited access to healthcare exacerbates their health disparities and poses significant challenges in managing their overall well-being.
5. **Economic Disempowerment:** Disabled women in India face economic challenges due to limited employment opportunities, discriminatory hiring practices, and lack of reasonable accommodations in the workplace. They often experience low wages, underemployment, and limited access to economic resources, leading to financial dependence and poverty.
6. **Social and Cultural Stigma:** Disabled women encounter social and cultural stigma surrounding disability and gender. Negative stereotypes, pity, and misconceptions about disability often lead to social exclusion, isolation, and limited social participation. This stigma also affects their chances of marriage, family life, and overall social integration.

These findings highlight the urgent need for inclusive policies, awareness campaigns, and support services tailored to address the gender-specific challenges faced by disabled women in India. It is crucial to promote gender equality, eliminate discrimination, and ensure the inclusion and empowerment of disabled women in all aspects of society.

CONCLUSION

In conclusion, disabled women in India face a myriad of gender-specific issues and challenges that stem from the inter-sectionality of their gender and disability. They often experience invisibility, marginalization, and limited access to resources and opportunities. Disabled women are at a higher risk of violence and abuse, have limited access to healthcare services, and face economic disempowerment. They also encounter social and cultural stigma, leading to social exclusion and isolation. Addressing these challenges requires inclusive policies, awareness campaigns, and support services that prioritize the rights and needs of disabled women. It is essential to promote gender equality, eliminate discrimination, and ensure the inclusion and empowerment of disabled women in Indian society.

Overall, disabled women in India face multiple challenges due to their gender, disability, and the intersection of both. It is essential to recognize these challenges and create policies and programs that address the specific needs of disabled women. Promoting accessibility, providing legal support, eliminating discrimination and ensuring inclusive opportunities can help create an enabling environment for disabled women in India.

RECOMMENDATIONS

Here are some recommendations to address the gender-specific issues and challenges faced by disabled women in India:

1. **Intersectional Approach:** Ensure that policies and programs consider the intersectionality of gender and disability. Recognize the unique experiences and challenges faced by disabled women and prioritize their inclusion in all aspects of society.
2. **Accessibility:** Make physical spaces, public transportation, and public services more accessible and disability-friendly to ensure that disabled women can access education, healthcare, employment, and other opportunities.
3. **Representation and Inclusion:** Increase the representation of disabled women in decision-making processes, including policy-making bodies, advocacy groups, and organizations. Encourage their participation and leadership to promote their inclusion and empowerment.
4. **Capacity Building:** Provide capacity building programs that enhance the skills and capabilities of disabled women, including vocational training, entrepreneurship, leadership, and advocacy skills.
5. **Community Engagement:** Engage with disabled women and their communities to understand their unique needs and challenges. Provide platforms for their participation and involvement in decision-making processes that affect their lives.
6. **Safe Spaces:** Provide safe and secure shelters, counseling, and legal assistance to support the physical and emotional well-being of disabled women. Ensure that they are protected from harm, violence, and other forms of discrimination.
7. **Media Representation:** Actively promote positive representation of disabled women in media and entertainment. Challenge negative stereotypes and stigma surrounding disability and gender by highlighting the achievements and contributions of disabled women.
8. **Research and Development:** Support research and development initiatives that focus on the intersectionality of gender and disability, including the development of technology and assistive devices that can enhance the lives of disabled women.

By implementing these recommendations, India can work towards creating a more inclusive and accessible society that values the rights and needs of disabled women.

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ANTI-CORRUPTION: A TOOL IN ECONOMIC PROGRESS

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ABSTRACT

The chapter broadly discusses about the nature of Corruption across the globe. Corruption is the biggest barriers to economic progress. In order to achieve the Millennium Development Goals emphasis has to be given to eradicate corruption. E-governance and digitalization can be used as a tool to reduce to reduce the corruption. Countries across are facing various challenges due to corruption and are in the process of identifying different tools and strategies to curb the corruption.

Keywords: Corruption, Anti-corruption initiatives, E-governance and Economic Development.

INTRODUCTION

The nature of corruption varies throughout time and between societies. This is especially true when we take into account the "South," the "Third World," or the emerging nations. We ought to look at the roles of both internal "interested parties in developing societies (like lawmakers, business groups, and less senior civil servants) and external actors (like westerners' multinational companies and international financial institutions) in order to understand the enormous diversity of its origins, forms, and effects across the globe. Additionally, reform plans must include the vastly different economic, legal, and political environments. The social context in which corruption occurs must be taken into account while developing effective anticorruption initiatives.¹

Another of the biggest barriers to economic progress is frequently cited as corruption. In fact, critics and NGOs have emphasised the need to eradicate corruption in order to achieve the Millennium Development Goals. E-government (or, less frequently, digital government) is defined differently. "Public sector use of the Internet and other digital technologies to offer services, information, and democracy itself" is one definition. "The process of linking citizens digitally to their government so they may access information and services provided by government organisations" is a different description of the e-government. Putting terminology aside, the methods used by e-government to lessen corruption are simple: E-government lowers interactions between dishonest officials and the public while boosting transparency and accountability.²

Due to the range of bribery trends, it is difficult to assess the diversity of contemporary corruption and anti-corruption initiatives; many people want a single, all-encompassing strategy to combat corruption. This chapter seeks to evaluate efforts to combat corruption in Mali and Senegal, as well as in Botswana, Ecuador, Hong Kong, and Tanzania, in the context of such global solutions. The chapter begins by describing the contemporary context of economic and political liberalisation, as well as governance, within which most reform initiatives in developing countries are positioned. Examining this new reform plan in light of the enormous increase in enthusiasm for eradicating overt public sector corruption in the late 1990s is necessary. How is there such a recent 'corruption eruption'? The section then goes through the main points that should be taken into account while battling corruption. The section's main portion looks at the various forms of corruption and anti-corruption initiatives that were seen in the instances that were looked at during the UNDP-PACT and OECD Development Centre Workshop. The last debate reconsiders the proposed universal remedies and focuses upon the key tactical choices needed to construct an immediate, successful anti-corruption operation.¹

CORRUPTION AND CHANGE

Authorities and organisations are becoming more aware of the "strategic role that good governance serves in the growth procedure," the "highest standards of integrity, openness, and transparency," as well as the "fresh kinds and dimensions" of graft and its widespread impact on government performance, on the use of public resources, on the general morale in the public services, and on the trustworthiness of government. Moves to combat corruption have been underlined as a requirement for long-lasting change, and it is believed that doing so demonstrates a commitment to good governance.¹

Corruption no longer appears to be only a transient illness of modernising countries that will be cured by the ability to read and growth, and sound public morality. Both petty and big corruption have crippling repercussions on the economy, politics, and social life. These organisations have also outlined the macro-framework, macro-issues, and outcomes of a commitment to good governance, and addressing fraud has grown into a crucial part of reviving the state's institutional capacity (World Bank, 1997), ensuring society's confidence in its leadership (United Nations International Drug Control Programme, 1997), and safeguarding the foundations of public life. There are a significant number of government organisations and professional bodies that have now released public declarations or policies against fraud in the general public sector and corruption. However, the agencies' and the nations' more pressing problem is how to deal with corruption in the real world: what short- and long-term reform methods to use, and what views on corruption patterns and types to embrace to create a successful structure.¹

In India, dishonesty is ingrained in society and exists in both large and small-scale forms. In fact, the civil service's steel frame has been referred to as the "steal frame" due to how ubiquitous corruption is in India.³

REASONS OF CORRUPTION

There's no question that corruption exists in modern-day India at all levels and in all services, including in the legal and administration branches of government. British India's administration was regarded as being relatively free from corruption. In independent India, electoral politics compelled a change in this perception, leading to accusations of systematic corruption and a parody of democratic government on the part of the judicial, administrative, and police departments.⁴

The major split in the nation's history of public administration is seen to have occurred in the middle of the 1960s. It signalled the end of the Gandhian and Nehruvian period of moral politics and the rise of a fresh politics characterised by amorality. Former Prime Ministers, Chief Ministers, and even Governors were among those suspected of corruption, as the crises and frauds of the 1990s made clear. India's history with corruption has demonstrated that, no matter how sound and excellent, regulations, laws, procedures, and methods of conducting government business cannot guarantee efficient and transparent administration if the political and administrative leadership tasked with enforcing them fails to do so and abuses its authority for their own benefit.⁴

The fact that instances involving corruption are frequently handled in a careless and awkward manner contributes to the spread of corruption in India. Those in authority who have disciplinary authority avoid their responsibilities and demonstrate a reluctance to utilise their authority to stop unethical behaviour. This can be because of pressure from the government or labour unions, entrenched interests, or just a lack of expertise in conducting criminal investigations. As a result, dishonest individuals are seldom apprehended and, even when they are, they escape with no or little punishment. The political management, which supports corruption, is pleased that the government personnel tasked with combating it do so in an extremely ineffective and lax way.

Since the legal system is so costly, cumbersome, and ineffective, corruption cases are not resolved for years and years. Since it has been in court for over a decade, the infamous Harshad Mehta case of systematic corruption in India's stock exchanges, in which tiny investors lost millions of crores of rupees, has not yet reached a conclusion. Since a long period of time has a negative impact on the evidence in a case, the upshot of such excessive delay is that the accused frequently avoid punishment. Only 6% of cases are found guilty in Indian courts. In the nation of India, there are three crore cases waiting, and it typically takes 10 to 20 years for a case to be resolved. In the majority of corrupt practises, justice delayed is justice lost.

A component of the political framework, which is ultimately a part of the social system, is the government. Therefore, the sociological context or cultural has a significant influence on governmental administration. To put it another way, administration cannot be separated from the cultural fabric in which it is ingrained as a component of the larger socioeconomic structure. A bureaucrat represents the attitude and spirit of the community in which he works, and his actions are inevitably a reflection of these cultural roots.

In today's India, societal psychology and behaviour have come to accept corruption. Bribery, nepotism, and favouritism are social ills that are now widely accepted. People frequently ask someone they are aware for favours that are not legally owed to them. Jumping red lights, waiting in queue or receiving advantages one is

not entitled to be deeply ingrained in society. In Indian society, a person who has amassed fortune by dishonest methods is frequently afforded the same, if not higher, status as that given to people of distinction.⁵

CHALLENGES IN DEALING WITH CORRUPTION

To comprehend corruption, a variety of topics must be tackled. What effect, for instance, do external groups or activities have? Are there various forms, locations, and intensities of graft beyond national borders in developing economies? These questions affect whether corruption should be addressed uniformly across all political and economic situations or if it is even necessary to try to build a global strategy to combat bribery.¹

CONSEQUENCES OF CORRUPTION

In the end, bribery is a moral problem that also affects progress. The fundamental social and political fabric of societies, as well as the entire decision-making process for investments and other business transactions, can be distorted. In a recent ruling, the Supreme Court of India commented on the long-lasting impacts of corruption, and these remarks need detailed discussion. "Corruption in a civilised society is like cancer, which if not detected in time is sure to malign the polity of the country and lead to catastrophic repercussions," the supreme court noted. It is referred to be an epidemic since it is not only infectious but spreads like a fire across a jungle if left unchecked. Its virus is likened to HIV, which causes AIDS and is an incurable disease. Additionally, it has been called royal theft. The socio-political system that has been exposed to such a terrifying contagious illness is probably going to fall apart on its own. Corruption is not just anti-people but also directed against them, making it antagonistic to democracy and social order. It has an impact on the economy and obliterates the fabric of culture. In an otherwise healthy, prosperous, effective, and dynamic society, it is probable to generate turbulence that will shake its socioeconomic and political system if not stopped as soon as possible.⁵

ECONOMIC DEVELOPMENT

It is referred to be a sickness that, in addition to being communicable, spreads like a fire in a jungle if left unchecked. Its virus is likened to HIV, which may cause AIDS and is fatal. It's also been referred to as royal theft. A society that is exposed to such a terrifying contagious sickness is likely to fall apart from within. Democracy and social order are challenged by corruption, which is not only against people but also directed against them. Both the economic and cultural legacy are destroyed. In a society that is generally healthy, prosperous, effective, and vibrating, it is likely to generate turbulence and shake the social, economic, and political order if not caught early on.

According to recent research by the Peruvian economist Paolo Mauro, aggregate expenditures for a corrupt nation are projected to be about 5 percentage points lower than in a comparably uncorrupt country (1995 and 1998). India provides especially glaring examples. The GDP growth rate might increase by around 1.5 percent yearly and investment rates could rise by about twelve percent annually if corruption levels in India were lowered to those in the Scandinavian nations. By reducing the possible return to an investor on both the initial investment and on later returns, corruption also serves as a further fee on business. Because of India's present levels of corruption, the implicit tax on investments is approximately 20%. In the nation's cities and towns, the effects of graft on the standard of municipal facilities are all too obvious. One of the most corrupt government agencies in India is the Public Works Department, which is primarily in charge of managing the supply of energy and the repair of roads. The transmission and distribution losses in the power industry are believed to be above 50% in New Delhi, the capital city, of which about 30% is attributable to theft committed with the assistance of energy commission officials.⁵

CONCLUSION

Numerous countries across the world, from the least developed to the most developed, are dealing with the issue of corruption. The scope and intensity of corruption in a given nation depends on a number of variables, including the culture of the country, past, present, and political system.⁶

When thinking about anti-corruption methods, it is important to take into account the range of both traditional and contemporary types of corruption. The instances examined at the UNDP/OECD Workshop serve as an example of both the enduring roots of new types of corruption and the tenacity of the fight for public integrity. Even while these particular examples highlight the challenges with universal remedies, they all reveal one

fundamental element of any effective strategy: extraordinary political and managerial will is required to push and sustain corruption prevention change. Yet, if any further universal components of a plan are required, a number of fundamental recommendations might be made. Every community should develop their professions by fostering more professionalism, autonomy, and technical proficiency as part of plan to combat corruption that also includes institutional change. Investigative journalists, accountants, and solicitors all require assistance. In democratic countries where the demands of political rivalry frequently push politicians to act, it is more probable to see improved professional abilities as well as political and managerial will to limit misconduct. Therefore, democratic development is a necessary but insufficient precondition for the decline in immorality. Additionally, liberalisation of the economy is not a straightforward fix for corruption in the public sphere. But shrinking the size of the state also lowers the size of the corruptible "take" and makes it possible for the public sector to advance in the direction of the modern ideal of an effective, enabling government. The present "corruption eruption," or increased awareness of corruption as a result of widely reported scandals, will guarantee that more efficient methods for combating bribery are created.¹

The World Bank's current anti-corruption strategies are based on the idea that effective anti-corruption initiatives improve the likelihood that democratic governments will be reelected. The World Bank focuses on the self-interest of countries rather than their high morals when it "sells" its anticorruption strategy. Because of this, the administrations in transition nations have institutional weaknesses and a lack of political will, which has led to the present anticorruption programme failure. It was never raised that clean administrations might not be motivated to start anticorruption initiatives.⁷

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THE HOUSEHOLDS CONSUMPTION AND SAVINGS

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ABSTRACT

This paper tried to high light the household consumption and savings of the lower middle class that is aspiring households earn from ₹1.25 lakhs to ₹5 lakhs annually as per the budget 2023 announced by Finance minister of India based on the PRICE Research that is People Research on India's Consumer Economy and also based on the most important economic tool of Keynes is that consumption and savings functions of every individual. Symbolically $C = f(Y)$ whereas $S = Y - C$, C represents Consumption, S represents Savings, f represents a function, Y represents income. In both the equations Income is the main perception in determining the consumption and savings. The relationship between savings and income, the relationship between consumption and income are based on common factors they are psychology, human nature, experience, social security's, credit facilities, advertisement, standard of living , family, social status, banking facilities , investment opportunities and value of money. Based on these variables questionnaire outline and shared through hard copy with the students to understand their household economics, nearly hundred samples have been collected to analyze their economic status. The calendar year of 2020 to 2022 had been taken specifically to study the post covid situation. Therefore the per capita income of the lower middle class people combined with their consumption and savings had been studied through final year students of their family with that of convenient non – random sample technique to comprehend the growth of the national economy.

Keywords: Household Consumption and Savings, Psychology, Human Nature, Experience, S Advertisement, Investment Opportunities and Value of Money, Post Covid Situation, Growth of The National Economy.

INTRODUCTION

As per the budget 2023 announced by Finance minister of India based on the PRICE Research that is People Research on India's Consumer Economy the household consumption and savings of the lower middle class that is aspiring households earn from ₹1.25 lakhs to ₹5 lakhs annually and also based on the most important economic tool of Keynes is that consumption and savings functions of every individual the study was exposed. Symbolically $C = f(Y)$ whereas $S = Y - C$, C represents Consumption, S represents Savings, f represents a function, Y represents income. In both the equations Income is the main perception in determining the consumption and savings. The relationship between savings and income, the relationship between consumption and income are based on common factors they are psychology, human nature, experience, social security's, credit facilities, advertisement, standard of living , family, social status, banking facilities , investment opportunities and value of money. The household consumption and savings of lower middle class people are the energetic force for the economic development.

Objectives

1. To study the standard of living of the people during post covid position
2. To analyze the consumption and savings pattern of the people during post covid position

METHODOLOGY

The Area of study is based on middle class of people with random sampling technique. Data collection all the way through hard copy of questionnaire shared with the final year students of their family with that of convenient non – random sample technique nearly hundred samples had been collected.

REVIEW OF LITERATURE

Gomes, Francisco, Michael Haliassos, and Tarun Ramadorai. (2021). "Household Finance." *Journal of Economic Literature*, 59 (3) stated that Household Financial is complex phenomenon it is purely based on the education of the people with their attitude, behavior, cultural and traditional concept. Also made a study on life cycle based on their assets and liabilities using credit cards.

Sang-yoon Song (2020), "Review of Economics of the Household", volume 18, pages 1213–1244 made a study on Leverage, Hand-to-Mouth Households, and Heterogeneity of the Marginal Propensity to Consume from South Korea accentuate that liquid asset after tax income with the positive and negative income changes which is left for their aggregate spending growth.

Jappelli, Tullio, and Luigi Pistaferri. (2020), "Reported MPC and Unobserved Heterogeneity", *American Economic Journal: Economic Policy*, 12 (4): 275-97 based on the Italian survey of household income which analyzed the relationship between MPC and cash on hand remarked the effectiveness of revenue fiscal policies of the households.

Pranab Bardhan and Christopher Udry (1999), "Human Capital and Income Distribution", *Development Microeconomics* explored the origin of income and human capital for the elasticity of income on calories and education on human productivity resulted in income inequality.

Klaus Hesse (1984), "Household Economics and Economics", *Journal of Consumer Studies and Home Economics* studied the relationship between national income with that of household income and stated that these two thought are the factual entity for economic theories.

FREQUENCY DISTRIBUTION

The respondent age wise is that 18-20 is 66.7% and 21-23 is 33.3%. The respondent is UG qualification is that 79.2% and PG qualification is that 20.8 %.

The respondent father qualification is up to tenth standard is 66.7%, up to twelfth standard is 16.7 % , holding Degree is 12.5 % and engineers is 4.1 % . The respondent father occupation is 80.2 % are entrepreneur, 10.4 % are central government employees and 9.3 % are state government employees.

The respondent mother qualification is up to tenth standard is 77.1 % , up to twelfth standard is 12.5% and holding Degree is 10.4%. The respondent mother occupation is 89.6 % are Home makers and 10.4% are working women.

The respondent families members are 64.6% are with four members, 25% are with five members and 10.4 % are with three members.

The respondent family income per month is 58% of the families earning is less than ₹ 20,000 per month, 23% of the families earning is between ₹ 21,000- ₹ 30,000 per month and 19% of the families earning is greater than ₹ 30,000 per month. The respondent family expenditure per month is 53% of the families expenses is less than ₹ 20,000 per month , 35% of the families expenses is between ₹ 21,000- ₹ 30,000 per month and 12% of the families expenses is greater than ₹ 30,000 per month .

The respondent family savings is 20% of the families save up to ₹ 1000 per month, 42% of the families save up to ₹ 500 per month and 33% of the families cannot have savings. The respondent families managed their expenses by taking loan from bank is 50% , some of the families managed their expense by borrowing money from friends and relatives is 27.1% and some of the families managed their expenses by pledging their jewels is 22.9%.

The respondent family tax payment is that 60% of the families pay property tax which means the respondent have own house, 50% of the families pay income tax which means the respondent earn monthly income, 38% of the families pay professional tax which means the respondent are doing business and 62% of the families pay water tax which means the respondent are receiving corporation water.

ANALYSIS

Table 1 Percentage of the respondent in consumption and savings pattern for the calendar year 2020-2021

Variables	Strongly Agree	Agree	Neutral	Strongly Disagree	Disagree
Happy with Income	12.5%	26 %	37.5%	8.3%	16.7%
Met Expenses	8.3%	27.1%	43.8%	8.3%	12.5%
Saved Money	10.4%	31.2%	25.1%	12.5%	20.8%
Paid loans& Insurance	4.2%	39.6%	20.8%	10.4%	25%
Happy with Amenities	4.2%	33.3%	25%	12.5%	25%

Tables 1 reveal that the consumption and savings pattern of the respondent for the calendar year 2020-2021 is 37.5% of the respondent are neutral with their income, 43.8% of the respondent are neutral in meeting with their expenses, 31.2% of the respondent agree that they saved money, 39.6% of the respondent agree that they paid loan & Insurance and 33.3% of the respondent agree that they are happy with amenities.

Table 2 Percentage of the respondent consumption and savings pattern during post covid position for the calendar year 2021-2022

Variables	Strongly Agree	Agree	Neutral	Strongly Disagree	Disagree
Happy with Income	10.4%	20.8%	54.2%	4.2%	10.4%
Met Expenses	6.2%	35.4%	37.5%	4.2%	16.7%
Saved Money	8.4%	27.2%	37.2%	8.4%	18.8%
Paid loans& Insurance	4.2%	45.8%	20.8%	10.4%	18.8%
Happy with Amenities	6.2%	31.2%	16.7%	14.7%	31.2%

Table 2 show that the consumption and savings pattern during post covid position for the calendar year 2021-2022 is 54.2% of the respondent are neutral with their income, 37.5% of the respondent are neutral in meeting with their expenses, 37.2% of the respondent are neutral in saving the money, 45.8% of the respondent agree that they paid loan and insurance and 31.2% of the respondent agree as well as disagree that they are happy with amenities.

Table 3 Percentage of the standard of living of the people during post covid position

Variables	Percentage
Best	4.2%
Good	25.0 %
Fair	33.3%
Better	22.9%
Bad	14.6%

Tables 3 say about the standard of living of the people during post covid position is 33.3% of the respondent feel fair, 25% of the respondent feel good, 22.9% of the respondent feel better, 14.6% feel bad and 4.2 % of the respondent feel best.

CONCLUSION

The above analysis illustrate that Keynes perception on consumption and saving is based on income which hold good with the lower middle class population especially during the period 2020-2022 the post covid position. The data on income of the respondent is 58% of the families earning is less than ₹ 20,000 per month, 42% of the families save up to ₹ 500 per month, 43.8% of the respondent are neutral in meeting with their expenses during 2020-2021, 37.5% of the respondent are neutral in meeting with their expenses during 2021-2022. The common factors of psychology, human nature, experience, social security's, credit facilities, advertisement, standard of living, family, social status, banking facilities, investment opportunities and value of money are the energetic force for the lower middle class people which in turn gives a big push to the economy. Therefore the

consumption and savings with that of standard of living of the households are very well balanced during covid position.

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A DETAILED STUDY ON AGRICULTURE AND FOOD SECURITY IN INDIA

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ABSTRACT

Agriculture and food security are closely intertwined and play a crucial role in ensuring the well-being and survival of human populations. Agriculture involves the cultivation of crops, rearing of animals, and the production of food, fibers, and other goods derived from plants and animals. Food security, on the other hand, refers to the availability, accessibility, and utilization of food that is safe, nutritious, and sufficient to meet the dietary needs and preferences of individuals at all times. It encompasses several dimensions, including physical availability, economic and physical access, utilization, and stability of food supply.

In conclusion, agriculture plays a vital role in ensuring food security by increasing food production, enhancing availability, generating income and employment opportunities, and contributing to economic stability. However, challenges such as climate change, land degradation, water scarcity, pest and disease outbreaks, and population growth need to be addressed through sustainable agricultural practices, research and technology, market access, rural infrastructure development, and social safety nets. By implementing these strategies, it is possible to achieve food security for all and ensure a sustainable and resilient agricultural sector.

Keywords: India, Agriculture, Poverty, Hunger, Food Security

INTRODUCTION

Agriculture and food security are closely interlinked concepts that are of paramount importance for the well-being of individuals, societies, and nations. Agriculture refers to the cultivation of crops and the rearing of animals for food, fiber, medicinal plants, and other products used to sustain and enhance human life. On the other hand, food security is the state in which all individuals have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and preferences for an active and healthy life. Agriculture plays a fundamental role in ensuring food security. It is the primary source of food production, providing the necessary resources to meet the nutritional needs of a growing global population. It contributes to food security by producing a variety of crops, livestock, and aquaculture products that are essential for a balanced diet. Additionally, agriculture enables the generation of income and employment opportunities, particularly in rural areas, thereby reducing poverty and enhancing livelihoods.

Food security, on the other hand, encompasses various dimensions that go beyond mere availability of food. It also includes access to food, utilization of food, and stability of food systems. Access to food implies that individuals, households, and communities have the means to obtain food, either through their own production, purchase, or social safety nets. Utilization of food involves the utilization of food in ways that allow individuals to meet their dietary needs and maintain good health. This includes aspects such as food safety, nutrition education, and access to clean water and sanitation. Finally, stability of food systems refers to the ability of food production, distribution, and consumption to withstand shocks, such as climate change, natural disasters, or economic fluctuations, without compromising food security.

Several factors influence agriculture and food security. Climate change and extreme weather events pose significant challenges to agricultural production, leading to crop failures, reduced yields, and increased vulnerability of farmers. Inadequate access to modern technologies, inputs, and resources, such as land, water, and credit, can limit agricultural productivity and undermine food security. Issues related to land tenure, gender inequality, and social disparities also impact food security, as they affect access to resources and opportunities for marginalized groups. Furthermore, conflicts, political instability, and inadequate governance can disrupt food production, distribution, and access, thereby exacerbating food insecurity.

Addressing the challenges of agriculture and food security requires a multi-faceted approach. Investing in agricultural research, extension services, and innovation is crucial for enhancing productivity and sustainability. Promoting climate-smart agricultural practices, such as conservation agriculture, agro forestry, and precision farming, can help reduce the impact of climate change on agricultural systems. Strengthening market linkages, improving infrastructure, and enhancing access to financial services can enhance farmers' bargaining power and income generation. Enhancing the role of women in agriculture, ensuring land tenure security, and reducing inequalities are critical for inclusive and sustainable food systems. Moreover, promoting nutrition education, food safety measures, and social protection programs can improve utilization and access to food.

In conclusion, agriculture and food security are intertwined and have significant implications for human well-being and development. A sustainable agricultural sector, supported by policies, investments, and interventions, is essential for meeting the nutritional needs of a growing population, reducing poverty, and achieving food security at the global level.

ADVANTAGES OF AGRICULTURE AND FOOD SECURITY

1. Economic Growth: Agriculture contributes to the overall economic growth of a country by providing employment opportunities and generating income for farmers and agricultural workers. It also serves as a source of revenue through export of agricultural products.

2. Food Security: Agriculture plays a crucial role in ensuring food security by producing sufficient quantities of food to meet the demands of a growing population. It reduces dependence on imported food and helps stabilize food prices, ensuring accessibility and availability of food for all.

3. Poverty Reduction: Agriculture is a key sector in rural areas, where majority of the world's poor live. By increasing agricultural productivity and income, it helps lift small-scale farmers out of poverty and reduces income disparities.

4. Nutritional Benefits: Agriculture provides a diverse range of nutritious food, including fruits, vegetables, grains, and dairy products, that are essential for a healthy and balanced diet. It promotes better nutrition and reduces malnutrition and related health issues.

5. Environmental Sustainability: Sustainable agricultural practices help protect and conserve natural resources, such as soil, water, and biodiversity. These practices minimize negative impacts on the environment and promote the long-term viability of agricultural systems.

6. Climate Change Adaptation: Agriculture can contribute to climate change adaptation by implementing strategies that enhance the resilience of agricultural systems. This can include adopting climate-smart practices, such as crop diversification, conservation agriculture, and water management techniques.

7. Rural Development: Agriculture is closely linked to rural development as it provides livelihood opportunities, infrastructure development, and improved living conditions in rural areas. It helps to reduce migration from rural to urban areas and promotes balanced regional development.

8. Cultural Preservation: Agriculture is deeply rooted in the cultural heritage of many communities around the world. It helps preserve traditional farming practices, indigenous knowledge, and cultural identities, contributing to the overall cultural diversity and heritage of a country.

9. Energy and Raw Materials: Agriculture serves as a source of renewable energy and raw materials for various industries. Examples include bio-fuels derived from crops, natural fibers for textiles, and bio-based materials for construction and packaging.

10. National Security: A strong agricultural sector enhances a country's food self-sufficiency and reduces dependence on external sources for food. This improves national security and reduces vulnerability to food price shocks and global food supply disruptions.

LIMITATIONS OF AGRICULTURE AND FOOD SECURITY

- 1. Climate Change:** Changing weather patterns and increased frequency of extreme weather events can negatively impact agricultural productivity and food security. Droughts, floods, hurricanes, and heat waves can destroy crops, reduce yields, and disrupt food supply chains.
- 2. Limited Land Availability:** As the global population continues to grow, the availability of arable land for agriculture is becoming limited. Urbanization, deforestation, and soil degradation further reduce the amount of land suitable for farming, making it challenging to meet the growing demand for food.
- 3. Water Scarcity:** Agriculture requires significant amounts of water for irrigation, and water scarcity is a major constraint for many regions. Competition for freshwater resources between agriculture, industry, and domestic use can lead to water stress, affecting crop production and food security.
- 4. Soil Degradation:** Unsustainable farming practices, such as excessive use of chemical fertilizers and pesticides, overgrazing, and soil erosion, can lead to soil degradation. Degraded soils have reduced fertility, compromising agricultural productivity and food security.
- 5. Pests, Diseases, and Invasive Species:** Pests, diseases, and invasive species pose significant threats to agricultural crops, reducing yields and causing economic losses. Climate change can also favor the spread of certain pests and diseases, further exacerbating the problem.
- 6. Lack of Access to Inputs and Technology:** Many small-scale farmers, particularly in developing countries, lack access to modern farming inputs, technologies, and knowledge. Limited access to improved seeds, fertilizers, machinery, and training hinders their ability to increase productivity and ensure food security.
- 7. Market Access and Price Volatility:** Farmers often face challenges in accessing markets, particularly for smallholder farmers in remote areas. Limited infrastructure, transport costs, and market price volatility can make it difficult for farmers to sell their produce at fair prices, affecting their income and food security.
- 8. Poverty and Inequality:** Poverty and inequality can have a direct impact on food security. Lack of financial resources, education, and access to nutritious food can prevent individuals and communities from achieving food security.
- 9. Global Trade Policies:** Trade policies, subsidies, and tariffs can influence agricultural production and food security. Unfair trade practices, such as dumping of subsidized agricultural products, can undermine local farmers' livelihoods and food security in importing countries.
- 10. Lack of Agricultural Research and Development:** Insufficient investment in agricultural research and development limits the development and adoption of new technologies and practices. This hampers agricultural productivity improvements and the ability to address emerging challenges in food security.

LITERATURE REVIEW

There is a significant body of literature on the topics of agriculture and food security, which examine various aspects of these domains. Below is a brief review of the literature highlighting key findings and trends in this field:

- 1. Global Food Security:** Many studies focus on understanding global food security challenges and assessing the adequacy of food production to meet the growing global population's needs. These studies often emphasize the importance of sustainable agricultural practices, efficient resource allocation, and effective distribution systems.
- 2. Climate Change and Agriculture:** Literature also explores the impact of climate change on agricultural productivity and food security. It highlights the need for adaptation strategies, such as crop diversification, irrigation technologies, and improved water management, to mitigate the adverse effects of changing climatic conditions on agriculture.
- 3. Smallholder Farmers:** A significant portion of the literature examines the role of smallholder farmers in ensuring food security, particularly in developing countries. These studies typically focus on enhancing

smallholders' access to resources, credit, and markets, as well as strengthening their resilience to climate shocks and price fluctuations.

4. Agricultural Technology and Innovation: Another important area of research is the role of technology and innovation in improving agricultural productivity and food security. This includes studies on the adoption and impact of modern agricultural practices, such as precision farming, genetic engineering, and digital tools, in enhancing crop yields, reducing post-harvest losses, and improving food safety.

5. Gender and Food Security: The literature also sheds light on the gender dimensions of agriculture and food security, emphasizing the need to address gender inequalities in access to land, resources, and decision-making processes. It highlights the potential benefits of empowering women farmers and promoting gender-inclusive policies for improving food security outcomes.

6. Food Waste and Losses: Several studies examine the issue of food waste and post-harvest losses throughout the value chain. These studies highlight the economic, environmental, and social implications of food waste and propose strategies to reduce losses and improve food utilization, such as improved storage facilities, transportation logistics, and consumer education.

7. Policy and Governance: Finally, literature on agriculture and food security often explores the role of policy and governance in shaping agricultural outcomes and ensuring food security. These studies assess the effectiveness of national and international policies, trade regulations, and institutional frameworks in promoting sustainable agriculture, reducing market distortions, and enhancing food access for vulnerable populations.

Overall, the literature on agriculture and food security is expansive, covering a wide range of topics related to sustainable agriculture, climate change adaptation, technology adoption, gender equality, food waste, and policy frameworks. The findings from these studies contribute to our understanding of the challenges and opportunities in achieving global food security and inform policy and practice interventions in the agriculture sector.

CONDITION OF AGRICULTURE AND FOOD SECURITY IN INDIA

India is an agrarian economy with more than half of its population engaged in agriculture. Agriculture plays a crucial role in ensuring food security for the country's population. However, India faces several challenges in this sector, including population growth, climate change, declining farm incomes, and lack of modern infrastructure. Here are some key points regarding agriculture and food security in India:

1. Importance of Agriculture: Agriculture contributes around 15% to India's GDP and is a major source of employment. It provides food for the growing population, raw materials for industries, and exports to earn foreign exchange.

2. Population Pressure: India has a huge population, and ensuring food security for over 1.3 billion people is a significant challenge. The agricultural sector needs to adopt innovative practices to increase productivity and meet the growing demand for food.

3. Climate Change Impact: India is highly vulnerable to the impacts of climate change, including erratic rainfall patterns, droughts, floods, and rising temperatures. These factors can affect crop yields, soil fertility, and overall agricultural productivity.

4. Green Revolution: India witnessed a Green Revolution in the 1960s and 1970s, which led to a significant increase in agricultural production through the adoption of high-yielding varieties of seeds, modern irrigation techniques, and use of fertilizers and pesticides. This helped in achieving food self-sufficiency.

5. Need for Sustainability: While the Green Revolution increased production, it also had negative consequences such as soil degradation, water pollution, and over-dependence on chemical inputs. Therefore, there is a need to promote sustainable agricultural practices that ensure long-term food security without harming the environment.

6. Smallholder Farmers: The majority of farmers in India are small-scale, subsistence farmers who face challenges such as inadequate access to credit, technology, and markets. Supporting smallholder farmers and empowering them with knowledge, resources, and market linkages is crucial for enhancing food security.

7. Technology and Innovation: The adoption of modern agricultural technologies, such as precision farming, drip irrigation, and use of biotechnology, can help increase yield, reduce post-harvest losses, and enhance overall efficiency in the agricultural sector.

8. Government Initiatives: The Indian government has implemented various schemes and programs to promote agriculture and food security. These include the National Food Security Mission, Pradhan Mantri Fasal Bima Yojana, National Agricultural Market, and Kisan Credit Card scheme, among others.

9. Food Wastage: Despite being one of the largest producers of food, India also faces significant food wastage due to inadequate storage and transportation infrastructure, post-harvest losses, and lack of proper processing facilities. Addressing these issues is crucial to ensure food security.

10. Trade and Imports: India is also a net importer of certain food commodities like pulses, edible oils, and fruits. Balancing domestic production and imports is essential to ensure adequate food supply and stabilize prices.

In conclusion, agriculture and food security are vital for India's economic growth and social stability. The country needs to address the challenges faced by farmers, promote sustainable agriculture, invest in infrastructure, strengthen research and development, and adopt innovative technologies to ensure long-term food security for its population.

STEPS TAKEN BY INDIAN GOVERNMENT REGARDING AGRICULTURE AND FOOD SECURITY

The Indian government has taken several steps to address issues related to agriculture and food security. Some of the key steps include:

1. Pradhan Mantri Fasal Bima Yojana (PMFBY): This is a crop insurance scheme that provides financial support to farmers in case of crop loss due to natural calamities, pests, or diseases. It aims to stabilize farmers' income and ensure their financial security.

2. Soil Health Card Scheme: Under this scheme, soil health cards are provided to farmers, which contain information about the nutrient status of their soil and recommendations for appropriate crop-specific fertilizers. This helps in improving soil fertility, optimizing fertilizer use, and enhancing crop productivity.

3. National Food Security Act (NFSA): This act aims to provide subsidized food grains to around two-thirds of the Indian population. It guarantees a fixed quantity of food grains, namely rice, wheat, and coarse grains, at affordable prices to eligible households under the Public Distribution System (PDS).

4. Pradhan Mantri Kisan Samman Nidhi (PM-KISAN): This scheme provides direct income support to small and marginal farmers. Under this scheme, eligible farmers receive financial assistance of Rs. 6,000 per year in three equal installments, directly credited to their bank accounts.

5. Kisan Credit Card (KCC) Scheme: This scheme provides credit facilities to farmers for meeting their agriculture-related expenses. It aims to ensure timely availability of credit to farmers for crop production, post-harvest expenses, working capital, and other agricultural activities.

6. E-NAM (Electronic National Agriculture Market): This is an online trading platform that connects all agricultural produce market committees (APMCs) across the country. It enables farmers to sell their produce directly to buyers, eliminating intermediaries and ensuring fair prices for their produce.

7. Pradhan Mantri Krishi Sinchai Yojana (PMKSY): This scheme aims to enhance the water-use efficiency in agriculture and expand irrigated area. It includes various components like the development of water sources, efficient water management practices, promoting micro-irrigation, and improving on-farm water use.

8. Rashtriya Krishi Vikas Yojana (RKVY): This scheme provides financial support to states for promoting holistic development of agriculture and allied sectors. It focuses on improving productivity, enhancing natural resource management, strengthening market infrastructure, and promoting agribusiness.

SUGGESTIONS TO IMPROVE CONDITIONS OF AGRICULTURE AND FOOD SECURITY

- 1. Increase investment:** Governments and organizations should allocate more funds to agricultural research and development, infrastructure improvement, and farmer support programs. This will help improve productivity, efficiency, and sustainability in agricultural practices.
- 2. Promote sustainable farming methods:** Encourage the adoption of sustainable farming practices such as organic farming, agro-forestry, and precision agriculture. These methods minimize the use of chemical inputs, reduce soil erosion, and conserve water resources.
- 3. Enhance access to credit and insurance:** Small-scale farmers often face limited access to credit and insurance services, making it difficult for them to invest in their farms or recover from crop failures. Governments and financial institutions should provide affordable credit and insurance schemes tailored to the specific needs of farmers.
- 4. Improve market access:** Enhance transportation and storage infrastructure to reduce post-harvest losses and ensure farmers can access markets. Establish farmer cooperatives or market networks that enable small-scale farmers to collectively negotiate prices and sell their produce.
- 5. Develop climate-resilient crops:** Support agricultural research and development to breed and promote climate-resilient crop varieties that can withstand extreme weather conditions and diseases. This will minimize crop losses and ensure food security in the face of climate change.
- 6. Enhance irrigation systems:** Invest in irrigation infrastructure and promote efficient irrigation techniques to ensure water availability for agriculture, particularly in regions prone to drought or water scarcity.
- 7. Strengthen agricultural extension services:** Improve the availability and quality of agricultural extension services to provide farmers with up-to-date information, technical assistance, and training on sustainable farming methods, pest control, and crop management.
- 8. Foster agricultural education and training:** Support education and training programs that equip farmers with modern agricultural techniques, business skills, and market insights. This will enable farmers to make informed decisions, improve productivity, and enhance their income-generating potential.
- 9. Support women in agriculture:** Recognize and promote the crucial role of women in agriculture by providing them with equal access to land, credit, and agricultural resources. Empowering women farmers can significantly contribute to improving food security and agricultural productivity.
- 10. Strengthen international cooperation:** Encourage collaboration and knowledge exchange between countries to share best practices, technologies, and innovations in agriculture. This can help address food security challenges on a global scale and promote sustainable agricultural development.

FINDINGS

- 1. Agricultural Productivity:** Several studies have found that increasing agricultural productivity is crucial for achieving food security. This can be done through improved technology, better crop management practices, and increased access to inputs such as fertilizers and irrigation.
- 2. Climate Change Impact:** Climate change poses a significant threat to food security, as it affects agricultural production through changes in temperature, rainfall patterns, and extreme weather events. Studies suggest that climate change can lead to lower crop yields and reduced nutritional quality of crops.
- 3. Land Degradation:** Land degradation, including soil erosion and nutrient depletion, is a major concern for agriculture and food security. Research has shown that land degradation can reduce crop yields, limit the availability of arable land, and increase vulnerability to climate change.
- 4. Water Scarcity:** Water scarcity is a significant challenge for agriculture, particularly in regions that heavily rely on irrigation. Studies highlight the importance of sustainable water management and efficient irrigation practices to ensure food security.

5. Gender Inequality: Gender inequality in agriculture can have detrimental effects on food security. Research has shown that empowering women in agriculture, through access to resources, education, and decision-making power, can improve food production and nutrition outcomes.

6. Smallholder Farmers: Smallholder farmers, especially in developing countries, play a crucial role in ensuring food security. Studies emphasize the importance of supporting smallholder farmers through improved access to credit, markets, and technology to enhance their productivity and income.

7. Food Waste and Loss: Food waste and loss throughout the supply chain contribute to food insecurity. Research indicates that reducing food losses, improving post-harvest handling, and implementing efficient storage and distribution systems can enhance food security.

8. Nutrition Security: Food security goes beyond just having enough food available; it also encompasses access to nutritious and diverse diets. Studies highlight the need for promoting agricultural practices that enhance the availability and affordability of nutritious foods, especially for vulnerable populations.

9. Trade and Globalization: Global trade plays a crucial role in addressing food security by facilitating the transfer of food from surplus to deficit regions. Research suggests that trade liberalization and reducing trade barriers can enhance food security by improving access to diverse food sources.

10. Policy Interventions: Effective policy interventions are essential for promoting agriculture and food security. Research shows that targeted policies, such as investment in agricultural research and development, rural infrastructure development, and social safety nets, can significantly improve food security outcomes.

CONCLUSION

In conclusion, agriculture plays a crucial role in ensuring food security for the world population. It is the primary source of food production and provides nutrition to people globally. However, several challenges need to be addressed to ensure sustainable and resilient food systems.

Firstly, climate change poses a significant threat to agriculture, leading to unpredictable weather patterns, natural disasters, and the spread of pests and diseases. To achieve food security, farmers need to adopt climate-smart agriculture practices, such as drought-resistant crop varieties, efficient irrigation systems, and sustainable land management techniques.

Secondly, the increasing global population puts pressure on agricultural systems to produce more food. This requires promoting sustainable intensification methods that maximize productivity while minimizing environmental impacts, such as precision farming, organic farming, and agro-forestry.

Additionally, promoting agricultural research and innovation is crucial to address emerging challenges and improve food production. This includes investing in advanced technologies like genetic engineering, precision agriculture, and vertical farming to enhance crop yields and reduce resource use.

Furthermore, enhancing access to markets, improving infrastructure, and empowering small-scale farmers are essential for food security. Providing access to credit, training, and modern farming techniques can uplift rural communities and increase agricultural productivity.

Lastly, addressing issues of food waste and loss is critical to achieving food security. Implementing efficient post-harvest management systems, improving storage and transportation facilities, and raising awareness about reducing food waste can significantly contribute to food availability.

In conclusion, ensuring food security requires a multidimensional approach that encompasses sustainable agricultural practices, climate resilience, technological advancements, inclusive policies, and reducing food waste. By addressing these challenges and implementing effective strategies, we can achieve a world where everyone has access to safe, nutritious, and sufficient food.

RECOMMENDATIONS REGARDING AGRICULTURE AND FOOD SECURITY

1. Increase Investment in Agriculture: Governments and international organizations should prioritize increasing investment in agricultural research, infrastructure, and technology. This will help improve productivity, enhance resilience to climate change, and promote sustainable farming practices.

2. Support Smallholder Farmers: Small-scale farmers play a crucial role in food production, particularly in developing countries. Governments should provide them with access to credit, training, and markets to improve their productivity and income. Additionally, initiatives to improve land tenure security can empower smallholders and encourage long-term investments in agriculture.

3. Promote Sustainable Farming Practices: Encourage the adoption of sustainable agricultural practices, such as agro-forestry, organic farming, and precision agriculture. These practices can enhance soil health, conserve water, reduce greenhouse gas emissions, and minimize the use of pesticides and synthetic fertilizers.

4. Develop Climate-Resilient Crops: Invest in research and development to breed climate-resilient crop varieties that can withstand extreme weather conditions, pests, and diseases. This will help ensure stable food production even in the face of climate change.

5. Improve access to Markets: Strengthen market infrastructure, transportation networks, and value chains to ensure farmers can sell their produce at fair prices. This includes developing storage facilities, cold chains, and efficient transportation systems to reduce post-harvest losses and connect farmers to consumers.

6. Enhance Agricultural Education and Training: Invest in agricultural education and vocational training programs to equip farmers with the knowledge and skills needed to adopt modern farming techniques, manage risks, and access new markets. This will help improve productivity and promote innovation in the agriculture sector.

7. Encourage Responsible Water Management: Adopt sustainable water management practices, such as drip irrigation and rainwater harvesting, to reduce water wastage and increase water-use efficiency in agriculture. This is particularly important in water-scarce regions.

8. Strengthen Social Safety Nets: Establish social safety nets and insurance schemes to protect vulnerable farming communities from the impacts of crop failures, price fluctuations, and natural disasters. This can help reduce food insecurity and poverty in rural areas.

9. Improve Data Collection and Analysis: Enhance data collection and monitoring systems to gather accurate and timely information on agricultural production, yields, market prices, and food consumption patterns. This will enable evidence-based decision-making and help identify areas that require intervention.

10. Foster International Cooperation: Enhance collaboration among governments, international organizations, and research institutions to share best practices, promote technology transfer, and coordinate efforts in addressing global agricultural challenges.

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CAN G-20 ADDRESS CHINESE ILLEGAL, UNREGULATED, UNDERREPORTED (IUU) FISHING?

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ABSTRACT

India assumed Presidency of G-20 multilateral group. The agenda for G-20 is food and energy security. India is a country with highest population and hence both of these issues are key concern for policy makers in New Delhi. India's economic outlook is positive in the coming years. Due to hyper globalization India's dietary habits are fast changing. Recently, consumption of deep-sea fish such as Tuna, Salmon and caviar has picked up among urban consumers. However, fisheries are fast depleting owing to China's unregulated and unreported over fishing. Globally only a few countries have distant water fleet (DWF) such as China, Japan, Korea and the United States. China is a leading exporter of sea fish. Due to over fishing the resources in the Pacific have depleted and Chinese distant water fleet are seen in African waters and Eastern Indian Ocean. It is a security concern for the littorals because some of these countries main livelihood comes from fishery and overfishing by China can result in loss of industries for the small developing countries. G-20 can act as a platform to voice these concerns of these small developing countries.

Keywords: G-20, IUU Fishing, Chinese Dwfs, Indian Ocean, Maritime Militia

INTRODUCTION

India on December 2022, took over the presidency of G-20. Since ascending to the position of Prime Minister of India the Modi administration has elevated India's position in the global politics through active diplomacy. During India's G-20 presidency, New Delhi looks forward toward building a consensus on delivering global goods, security issues and critical development. India has decided to release INR 47.66 crore for the G-20 meeting. India is striding toward inclusivity to ensure the membership of the African Union in the G-20. New Delhi has placed its proposal for the AU membership.

WHY DO WE REQUIRE MULTILATERALISM?

Due to globalization, the world has become more complex where maintaining socio-economic progress of countries is a pressing challenge for the governments. Emerging issues like cybersecurity, macroeconomic instability, migration, climate change and conflicts require inter-government cooperation to manage these issues. The Covid-19 pandemic is a case in point where unprecedented emergencies can disrupt supply chains and economic progress. Globally health infrastructure become overwhelmed. Similarly, many present-day challenges require interstate cooperation. India while assuming the G-20 presidency India therefore emphasized that its agenda would be inclusive, action-oriented and decisive. Ensuring delivery of public goods through multilateralism is an uphill task for India as multilateral cooperation is facing various crises. The present International System is in a flux due to great-power tensions and multilateral forums to be efficient and functional depends on the consensus of the powerful members on a particular issue. Ukraine war is a case in point underscoring the polarized geopolitics of the current system. Sourcing food supplies and energy become a challenge during the Ukraine war for the developing world. Although, the Western sanctions on Russia failed as China came to rescue Moscow by buying Russia's energy supply.

The global politics is polarized and many multilateral groupings have turned dysfunctional as they don't serve the interests of the powerful members. Hence for effectively utilizing the multilateral fora the need of the hour is genuine political will and leadership. Furthermore, G-20 can prove to be an efficient multilateral group if it focuses on issues like economic challenges and ensure efficient delivery of public goods. Because, in its origin G-20 is a forum to address economic crisis.

G-20 ORIGIN AND EVOLUTION

G-20 is a multilateral grouping formed in the year 1999 after the Asian financial crisis. It comprises of nineteen countries with some of the world's largest economies such as Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom (UK) and the United States. Together these grouping account for 80 percent of global economic output, contributing about 75percent of global exports, and about 60 percent of the world's population. As many of the world's large emerging market economies are member in the group it has assumed greater significance after the 2008 global recession when the multilateral group G-7 of advanced democratic market economies received major setback. In 2008 and 2009, G-20 nations arrived at a consensus to spend stimulus of around US\$4 trillion to rescue their economies and reforming the financial system. After the 2008, global recession the G20 group included the heads of state and government. The G-20 consists of two parallel tracks: Sherpa Track, Finance Track. Finance track is led by Finance Ministers and Central Bank Governors. Sherpas are personal emissaries of the Leaders from member countries. Sherpa Track oversees inputs from 13 working Groups. The outcome of Sherpa Level meetings is a Leaders' Declaration document.

ILLEGAL, UNREGULATED AND UNDER-REPORTED MARINE RESOURCES FISHING OF CHINA: A CHALLENGE

In order to make New Delhi's G-20 presidency efficient India can look towards the Global South. The problems which are of concern to the Global South, New Delhi can use G-20 to focus on these issues. The Covid-19 pandemic has raised eyebrows about China's unchecked consumption and food habits. It is believed that the Covid-19 outbreak have originated from the wet markets of Wuhan, in China. World Health Organization (WHO) sent a team to investigate although to know which animals were being sold prior to the outbreak. Although, the team could not come out with a conclusive, authoritative report but it suggested to surveil bat and pangolin trading. Pangolins are sold in Chinese cities which are kept in unhygienic conditions from where infectious diseases can spread. Like the Covid-19, another issue that concerns many developing countries is China's illegal and unregulated deep-sea fishing. (Scholaert 2023) In the long term it has serious implications for developing countries.

China is the world's largest producer of fisheries, and consumes about 36 percent of total global fish production and catches about 15.2 million tonnes of marine life annually which makes about 20 percent of world's annual catch. China's marine fisheries catches have increased at a tremendous rate. According to Sea Around Us research initiative China's marine fisheries catches have increased from about 3 million in the 1980s, to over 12 million tonnes in the late 1990s before getting stable at 12 to 14 million tons in 2014-2015. Around 4,600 vessels comprise China's distant water fleet making it the world's largest. Countries are increasingly concerned about China's illegal, unregulated, unreported (IUU) fishing. IUU is a harmful fishing practice due to decline in China's own coastal fisheries due to overfishing and degradation of marine environment compelling China to build the world's largest Distant Water Fleet (DWF). While on one hand China has adopted strict regulation to domestic inshore fisheries Beijing carries out fishing in distant disputed waters and adjacent waters of other nations while the Chinese DWF is found fishing in the waters in Eastern Indian Ocean and coast of Africa. In order to improve domestic food security China puts into jeopardy the aquaculture industry of others. Global fisheries stocks have depleted due to China's illegal fishing. From 1961 to 2017, global fish consumption has grown at the rate of 3.1%. Fish accounted for 17% of the global population's intake of animal protein in 2017. Due to unavailability of data it is difficult to exactly ascertain how distant water fleet impact marine fishery. The United Nations Convention on the Law of the Sea (UNCLOS) provide a legal framework for states to cooperate in fisheries management. The articles in the UNCLOS have acknowledged the authority of the coastal states in broader terms. The coastal states have authority over living resources within the territorial sea and Exclusive Economic Zone (EEZ) upto a maximum of 200 nautical miles seaward from the baselines used to measure territorial sea. The coastal states allow catches within a limit for optimal use of resource.

China has become the largest producer of seafood in the world and has increased its share from 10% in 1961 to 35% in 2018. In 2018, China's total seafood production was 62.2mt which was 35% of world seafood production. China's marine fisheries landing of 12.7mt from inshore, offshore and distant water fishing accounting for 15% of world marine fish landings. Inshore and offshore accounted for 10 percent while distant

water accounted for 2.3 mt from distant water landings. China defines a significant amount of its fishing activity as offshore and not distant waters. China lacks transparency in enlisting fleet size and fishing activities.

China has strategically used its fishing fleet and Chinese maritime enforcement vessels to claim over maritime rights as well as carried on fishing activities. Fisheries resources in East China Sea and South China Sea are depleted due to overfishing by Chinese fishing vessels. Fish stocks in South China Sea have declined by 90-95% by 2017 from that of 1950s as result the distant water fleets have to venture farther. Assertion of maritime rights by China makes it difficult to conserve resources as it leads to increase in competition among others. South China Sea has fish stocks and is the largest source of protein for many of them. China's neighbours like Indonesia, Vietnam protest against the illegal fishing of China. According to a study on the impact of distribution of fisheries catch due to climate changes, the fish stocks in the southward margins of semi-enclosed seas will decline considerably. Changes are vivid in Pacific Ocean. Exclusive Economic Zone regions with considerable decline in catch potential will include Indonesia, Chile and China socioeconomically affecting many of these regions. (Cheung et al. 2009) Indonesia has reportedly sunk many Chinese ships in the last four years which were found to be dangerously close to their boundary.

There are Regional fishing management organizations (RFMOs) which are dedicated regional fishery bodies responsible for conservation of highly migratory species and straddling stocks. They have agreements which are binding upon the parties providing coverage for world's ocean and fresh water areas.

EXPLOITATIVE TUNA FISHING IN THE WESTERN AND CENTRAL PACIFIC OCEAN

Tuna stocks are found in the South and the Western Pacific Ocean. Near the Exclusive Economic Zone (EEZ) of the Pacific island and adjacent high seas areas in the region are the areas where heavy fishing is carried on by the DWF fleets. The Pacific island nations have established regional associations to regulate Tuna fishing in the region. The Western and Central Pacific Fisheries Commission (WCPFC) is a RFMO established under the Western and the Central Pacific Fisheries Convention to manage the highly migratory Tuna stocks. There is a Nauru Agreement to enlist the terms of access to the fish stocks. China maintains one of the largest fleet is registered with the WCPFC to operate in the region. China carries out its Tuna fishing near the EEZs of Vanuatu, Solomon Islands, and Micronesia. Many foreign vessels including the Chinese vessels are supposedly underreporting their catch. Information about level of Chinese government subsidies to Madagascar, Mauritius, Ecuador and to the Solomon island are not available. (Scholaert 2023)

CHINESE IUU FISHING IN WEST AFRICAN AND INDIAN OCEAN

IUU fisheries exploitation in West Africa have attracted attention amid declining fish stocks due to severe changes in climatic conditions have adversely affected the various species in the Eastern Central Atlantic zone. Climate change will impact the spatial distribution of marine fisheries leading to 30-70% increase in high-latitude regions and a drop of up to 40% in the tropics. (Cheung et al. 2009) Observers have also reasoned out IUU fishing as one of the major reasons. In 2017, 40% of assessed fish stocks were harvested at unsustainable levels. These fish stocks is the main source of protein for the people living near the coast. It impacts the whole socio-economic conditions of the country as access to fish proteins get reduced. The scale and scope of fishing in these waters remain has no definite documentation West Africa has gradually attracted attention of Chinese DWFs. China's DWF reached the African coast in 1985 since then the fleet size have expanded. Chinese flagged vessels although disproportionately small appear near Ghana, Mauritania. Chinese fleets operating in Mauritania and Senegal have received higher subsidies from the Chinese government. According to the research initiative by University of British Columbia, from 2000-2011 West Africa accounted for 64% of annual Chinese DWF catch. Support from Chinese state for DWFs in West Africa encourages fishing practices at exploitative level such as under-declare catch levels which has put the domestic sectors at a disadvantageous position. China is the largest recipient of state subsidies. To gain favourable access terms Chinese DWFs may misrepresent their vessel sizes to secure licenses. In Ghana, many Chinese companies are involved in 'Saiko' trade. It is a practice where industrial trawlers transfer illegal or unintended catch to other intermediaries for sale. Due to declining fish stocks and fishing practices at unsustainable rate some West African governments have revoked their licenses of Chinese trawlers citing sustainability concerns. Failure of sustainable fisheries management occur due to poor cross-border coordination and weak maritime security enforcement regime and capacities making IUU a growing security concern for many West African governments. The growing challenge of IUU a

reflection of the current power imbalance between foreign governments and African countries. Highly migratory marine fishery stocks can be managed through international cooperation by encouraging conservation by bringing in more stringent Fishing Moratorium Protection Act to address the growing challenge of IUU fishing or bycatch of protected living marine resources (PLMR). Surprising is the absence of African Union in G-20 when real problems of climate change, resource depletion continue to pose serious development challenges.

Exploitative illegal fishing and under reporting by China is an act of weaponization of the global seafood market. Furthermore, such illegal activities at an unsustainable level leads to degradation of marine environment. While the great powers ensure effective governance of public goods and Chinese President Xi Jinping has authored a book on 'Governance' Beijing clearly violates the international and regional agreements. Furthermore China have drained out natural resources from African countries. China has not stopped. In 2016, China secured a base in Djibouti which possibly supports Chinese naval facilities besides owning a commercial deep seaport in Equatorial Guinea.

Similarly, in the Indian Ocean as well around 392 incidences of Chinese IUU fishing in 2021 has come to the notice of the Indian Navy. There is increasing presence of the Chinese DWFs in the Northern Indian Ocean Region (NIOR) where countries like India, Sri Lanka, Pakistan, Iran and Oman are located and incidences of unregistered Chinese fishing vessels have been reported. Reports from Sri Lanka and Maldives have also confirmed the presence of Chinese DWF vessels. India have initiated regional efforts with other countries such as the United States, Australia to bring in more authoritative documentation. Sometimes these distant water fleets can act as maritime militia for China. Maritime militia is composed of civilian fishermen forming irregular military force for China. They are deployed for the purpose of intelligence gathering. Since China uses ordinary fishermen as a para military force the maritime militia is a classic example of China's civil-military integration or 'dual use' policy. Due to lack of transparency and ambiguous representation creates a challenge for other states in terms of tactical measures to counter the militia. Beijing has been exploiting the ambiguous nature of maritime militia for its economic and security objectives in the maritime domain. During peace time, maritime militia can help with intelligence gathering. In order to protect the civilian fishermen, China has installed Beidou satellite navigation devices on fishing vessels. With the help of these navigation satellites, Chinese fishermen have been able to establish communication with the Chinese authorities even at high seas and inform when under threat. As China upgraded the security of fishermen and fishing fleet along with inter agency operability. In medium to high intensity conflict, the CMM can act in conjunction with PLA navy and augment claims to disputed areas through seizure of claimed maritime features. (Nayak ed.2020) China PLA navy observers know the extensive use of maritime militia China has made in the South China Sea to build artificial features.

G-20 AND HOLDING CHINA ACCOUNT FOR IUU

G-20 can play an instrumental role by raising awareness about Chinese DWF fishing in African and Indian Ocean waters. New Delhi can act in tandem with African countries and Pacific Island countries to come out with a binding agreement on IUU fishing activity of China. A non-military approach can be more effective in maintaining a sustainable order at sea.

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POVERTY, MARGINALIZATION AND INDEBTEDNESS- A CASE STUDY AMONG WOMEN IN FISHING COMMUNITY

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ABSTRACT

Women are generally marginalized and vulnerable segments of the society. Livelihoods of fisherwomen are still synonymous with poverty a problem which is a classical coastal phenomenon. Women fishermen have the potential as a driving force to empower coastal communities. Therefore, efforts to improve the welfare of fishing communities become an important discourse in the development of coastal areas. Coastal residents mostly work as traders, or activities in marketing and processing fishery products. The existence of these facilities is very strategic for the development of the marine fisheries sector, because in this sector provides a great opportunity for the emergence of other employment sectors that are still associated with the use of raw materials for fisheries resources, such as the scanning industry, fish crackers, fish drying, and fish trade. Marine resources are the main potential that drives the village economy. In general, village economic activities are fluctuating because they depend heavily on the high and low productivity of fisheries. If productivity is high, then the income level of fisherwomen will increase, so that the purchasing power of the majority of fisherwomen will also increase. Vice versa, if productivity is low, the level of income of fisherwomen will decrease so that the level of purchasing power of people is low. Thus, it will affect the economic conditions of fishermen as a whole and fisherwomen in particular. Coastal or marine resources with high productivity are basically expected to play an important role in overcoming poverty which covers most of the fishing communities. Therefore, it is necessary to understand the factors that cause fisherwomen's poverty, so that potential marine resources can really play a role in encouraging economic development through labour supply, and improving the welfare of coastal populations.

Keywords: Marginalisation, Unemployment, Underemployment, Indebtedness, Vending

INTRODUCTION

Fishing is an important sector in most of the developed and developing countries of the world from the stand point of income and employment generation. The experience in these countries indicates that the growth of the fishing sector stimulates development and employment in related industries which contributes significantly to the total economic growth of the country. Women play an important role in the development of the household, society and hence the country. In the past her contributions were not quantified and also not recognized. Presently the role of women in the economy and their contribution has been receiving attention in a much lesser pace and women continue to excel men in many fields. For the educated and employed women there have been some relief by virtue of their position in society, but no one cares much about the women who are illiterates, living in rural and coastal areas and strive hard to earn their bread.

Women fish retailers are threatened by the competition from the emergence of men fish vendors, organized retail shops, super stores, etc. The fisher women provide a substantial support to the family welfare and income. However, with increasing market share and income of the younger men retailers, the fisher women retailers are being marginalized in spite of their excellent marketing skills and comparable levels of profitability. Women are present in all phases of fish production, processing and distribution, and contribute to the generation of wealth, and the maintenance of households and communities in rural and coastal regions. They make up half the workforce and play a prominent role in fisheries and yet their work goes unrecognized in official statistics, sector policies and development programs. Poverty is something related to lack of power and resources. Some of the poverty measurements are low consumption expenditure, poor health, illiteracy, unemployment, underemployment and unsanitary housing. Lack of proper infrastructure facilities causes these region and

communities to live in relative isolation from the mainstream. Hence it is high time to see the coastal area as a sensitive border and resultant obligation of border area development schemes to wipe out poverty. In Kerala, the socio-economic status of the fisherwomen community is still not better, the result of which is that the educational, health, occupational and income status have not been good enough to achieve personal economic well-being.

REVIEW OF LITERATURE

MARY JOHN (2014) a study conducted on the life and work of fish vending women in South Kerala found that low income and low asset formation, indebtedness, alcoholic husband, lack of savings for the future, insufficient capital, improper transportation facility and lack of political awareness are the major problems of the women fish vendors. The working conditions of these women are very poor. They have to work for long hours and the benefit derived out of it were very low. They are considered par with fishermen and no special schemes were allotted to these categories either by the government or local bodies. As they are not from the organized sections, very less participation in civil society activities also. Compared to the past thirty-five years the participation of women fish vendors is much improved. There is an improvement in the income, better transportation facilities, and government support schemes for easy credit facilities and formation of SHG is the major advantage.

GUNAKAR & RAMACHANDRA BHATTA (2016), Socioeconomic Status of Fisher-Women conducted a comprehensive analysis of socio demographic and economic profile of the fisher women and threats to their sustainable livelihood. It was observed during the process of pre-market survey that the fish retailers were not a homogeneous group . In small-scale fisheries, women receive and contribute a substantial part of the family income. The study has also found that, men mobile counterparts spend less time on marketing and are able to earn 30-40 per cent higher income. The low educational level suggests that these fisher women get less opportunity to move out of their business and hence, the state policy to support modernization of fish marketing through the entry of modern retail stores should consider the social impact of such measures on these women groups.

PREMAPRIYA & JEYASEELAN (2018) studied the socioeconomic conditions and problem faced by women fishmongers. It was identified that most of the fish mongers are illiterate and lack of infrastructure and proper transportation are their prime problems. They are exploited by the middle men or money lenders; all the respondents have some health issues which are related to their fishing activity.

STATEMENT OF THE PROBLEM

Women play significant roles in all aspects of fisheries; both in the artisanal, small sector and in the commercial sector, yet their roles remain unarticulated and unrecognized. The major constraints faced by women in fisheries include limited access and control over resources like water, land, boat, craft and gear, knowledge, training, finance, tools, technologies, information technologies, infrastructural facilities etc. The socio-economic status of the fishing communities in the nine maritime districts of the coastal belt of Kerala depicts a picture of diversity. They always come in the lowest ladder of Kerala society with poor education, status and lack of basic livelihood facilities.

Fishing villages are deprived of basic amenities such as health care facilities, transportation and communication facilities, water supply and electricity. Problems like anemia, malnutrition and vitamin deficiency is observed in fishing communities especially among fisherwomen and children. Furthermore, poor awareness or knowledge in the areas of education, health, nutrition and child care heightened their problems. By tradition men in the fishing communities in India mainly in fish capture, while women take care of shore-based activities such as fish handling, processing, distribution and marketing.

The involvement of women in fish processing and marketing generates additional income to support their families. Even though women are as efficient as men, different payments are made to them therefore earnings are not always the same. In Kerala the socio-economic backwardness is the hallmark of the fisherman community. They are the socially isolated community. The prominent reason for the isolation is the outlook of the society towards them and the other factors are low social status, poor economic conditions, illiteracy, heavy

indebtedness, low production rate- and income influence the socio-economic conditions of fisherwomen. Thus, the problem of the study is to determine the socio-economic conditions of fisherwomen community in Kerala.

OBJECTIVES

1. To analyse the socio- economic and demographic conditions of fisherwomen.
2. To trace out the problems faced by women during their vending activity.
3. To evaluate the indebtedness faced by the fisherwomen.

DATA SOURCE AND METHODOLOGY

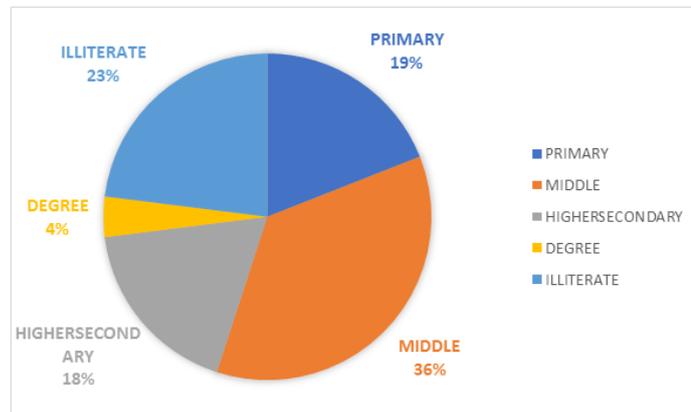
A study has been done classifying Kerala into three regions; Thiruvananthapuram and Kollam from the southern region and Ernakulam and Alappuzha from the central region and Kozhikode from the northern region have been selected for the study. From all three areas, Data collection is done by collecting information from one hundred people randomly. Questionnaire method using the scale method is adopted here. Percentage method and tables are used as analysing tool.

DATA ANALYSIS AND INTERPRETATION

EDUCATIONAL QUALIFICATION

Education is an important social factor. The distribution of Fisher women on the basis of their educational qualification are presented in Figure.1

Figure.1 Educational Qualification



Source- Primary Data

INTERPRETATION

Figure.2 clearly shows that majority of the respondents (36%) have only attended middle school ,23% of the respondents are illiterate,19 % of the respondents have attended only the primary level of schooling and 18% of the respondents have qualified higher secondary education and only 4% of the respondents have qualified degree. Despite several programmes implemented by the State to improve the educational status, the coastal villages particularly the fisherwomen communities have not reserved adequate attention.

FAMILY SIZE AND SIZE OF HOUSEHOLD EARNERS

The family size and the number of household earners and the number of dependent members is analyzed with the help of the Table.1

Table 1 Family Size and Size of Household Earners

SL NO.	PARAMETERS	VARIABLES	FREQUENCY	PERCENTAGE
1.	NO OF FAMILY MEMBERS	•4 MEMBERS •5 MEMBERS •6 MEMBERS •ABOVE 6 MEMBERS	18 34 32 16	18 34 32 16
2.	NO OF DEPENDENTS	• TWO •THREE •FOUR •ABOVE 4	15 47 21 17	15 47 21 17
3.	NO OF HOUSEHOLD EARNERS	• ONE • TWO •THREE •FOUR	47 26 21 6	47 26 21 6
	TOTAL		100	100

*Source- Primary Data***INTERPRETATION**

Figure.1 clearly shows that 34% of the respondent's have a family consisting of 5 members and 32% having a family size of 6 members and 18 % having a family size of 4 members and the remaining 16% with a family six above 6 members. It can also be interpreted that 47% of the family has 3 dependents and 21% has a dependent population of 4 members and 17% of the family has above 4 dependent members. It can also be analyzed that in 47% of the households there are only single earning member and only 6% of the households with earning members of 4.

DEBT ANALYSIS*Table 2 Debt Status of Respondents*

Option	Frequency	Percentage(%)
Yes	93	93
No	7	7
Total	100	100

*Source- Primary Data***INTERPRETATION**

Table.2 shows that 93% of the respondents have availed loans for meeting their financial requirements like child-rearing and education, medical expenses, social customs and festivity, for marriage of their children etc.

Debt Lending Institutions

Banks, Money Lenders etc. are the major debt lending institutions.

Table.3 Debt Lending Institutions

Option	Frequency	Percentage(%)
Banks	12	12
Money Lenders	38	38
KFWFB	43	43
No Debt	7	7
Total	100	100

Source- Primary Data

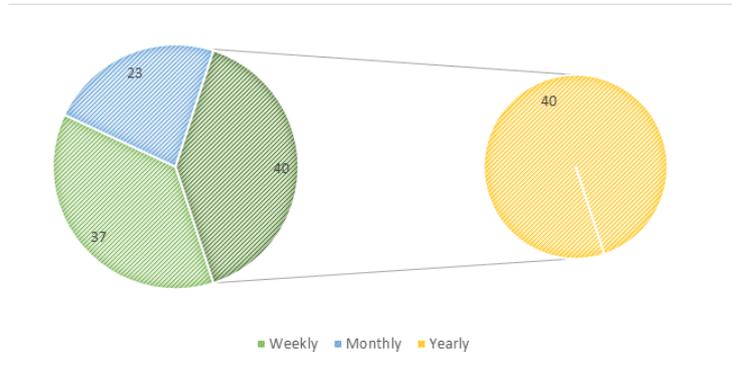
INTERPRETATION

Table.3 shows that majority of the respondents (43%) lend money from KFWFB (Kerala Farmers Welfare Fund Board) and 38% of the workers borrow money from money lenders and the remaining 12 % of the respondents from banks.

REPAYMENT OF LOANS/DEBT/BORROWINGS

The repayment of loans or borrowings is analyzed with the help of the Figure.2

Figure.2 Repayments of Loans/ Borrowings



Source- Primary Data

INTERPRETATION

Figure.2 clearly points out that 40 % of the respondents are yearly paying off their debt or borrowings and 37 % of them are paying off their debt weekly as installments and the remaining 23% of them are monthly paying off their debts.

PROBLEMS ENCOUNTERED

The main problems encountered are summarized in Figure 4.3

Figure.3 Problems Encountered



Source- Primary Data

INTERPRETATION

It is very clear from the above figure that majority of the respondents (32%) face the difficulty of storage facility and 30% of them suffer from the lack of adequate transportation facility and 23 % of them opined that there is the lack of proper latrine facility and the remaining 13% of them faces the problem of marketing.

SUGGESTIONS

1. Government must provide adequate facilities to the fisherwomen in Kerala to improve their living conditions.
2. The fishermen must be educated and trained for doing many other jobs at the time of offseason so that it will be helpful to them for improving their income at that time.
3. In order to uplift the living condition of the fishing population, more of infrastructural facilities should be furnished, which will in turn reduce their strains and stress for their better living in the villages.
4. Proper steps should be taken to provide alternative income sources to fishermen during closed season of fishing so that their economic standard and way of living will be improved.
5. The authorities ought to deliver loans for them at a low-interest charge and create alternative activity possibility in off-top season.
6. Establishment of Fisheries Polytechnic Institutes to train women for specialized functions.
7. Creation of opportunities in alternate income generating activities for the fisherwomen especially in the field of post-harvest fishery and mariculture activities with a suitable market link.
8. Encouragement of maintaining some livestock wherever feasible to serve as domestic support as well as to supplement the income of the family

CONCLUSIONS

Women are always vulnerable and fisher folk women are also not spared. The fishing sector plays a crucial role in development of economy of the country by way of providing proteinaceous food to people, providing employment opportunity to the larger section of the society and contributing to the foreign exchange. The participation of women in fish marketing is unique in this area as in no other sector there is as much involvement of women as in this sector. The women dominate the fish retail marketing and have excellent skills and knowledge critical to product quality and thus market access. A large numbers of fisherwomen families were unable to fulfil their minimum needs. Necessary steps should be taken by the Governments organizations, NGOs and respective organisations or groups to assist the community with a view to improving their livelihood. Priority on literacy level and alternative income-generating options may be considered in this regard. Besides, the availability of fish it is being reduced due to environmental and human made activities such as overfishing and illegal fishing.

Most of them are taking loan on daily basis but could sell only for lesser amount the balance fish will keep it in refrigerator for the next day. After day sales, they have to pay back the principal along with the interest to the money lenders nothing left after meeting the expenditure for savings. This makes them always to live in indebtedness. Income earned from selling fishes is not sufficient hence they also depend on subsidiary sources like agriculture, working in related industries, labour work. Major problem faced by the fisherwomen is uncleanliness and improper infrastructure facilities. They do not have cheap source of transportation facilities to the distant markets. Public transports usually do not allow carrying the fish baskets in the early morning. Hence an alternative mode is taken by the fisherwomen which have added on to their cost. The respondents grieved about the exploitation of middlemen as they vary price unreasonably and without any choice, they purchase fishes on credit basis ending up with low profit. Fisheries sector is seasonal hence needs to save up for the off season. Most spend off season in factories of net making, packaging, ice plants, etc to lead their livelihood. This study helped me to get to know about the boldest and hardworking women whom we meet on a daily basis share beautiful stories of hardships and sustainability. It is inspiring how woman supports her family and balance both the work and family at the same time.

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PROGRESS OF INDIA IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS

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ABSTRACT

The Sustainable Development Goals (SDG) is goals introduced by UNDP with the objective to tackle some of the world's economic, social and environmental issues. The SDGs have been divided into 17 goals with 169 targets. Some of the important goals are reduction of poverty, quality of education, gender equality and global partnership. India has adopted SDGs as a path of achieving sustainable development. NITI Aayog is the institution responsible for achieving SDGS in India. The article studies the progress made by India in achieving the SDGs and the schemes launched for this purpose.

Keywords: Sustainable, Development, Progress

INTRODUCTION

SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Sustainable Development Goals (SGDs) have been introduced by UNDP in 2015 following the success of Millenium development gaols. The member countries adopted these goals on 25th September 2015 which focusses on issues like tackling poverty and hunger, achieving gender equality, investment in renewable energy and promoting sustainable growth till the year 2030. According to the Agenda for Sustainable Development, the purpose of introducing SDGs is to transform the lives of the people across the world.

Features of SDGs

1. **Inter-connectedness:** SDGs have been formulated with an idea that these goals are not confined to the national boundaries but are rather global in nature. What happens in one country influences the other nations-whether it is poverty or issues of environmental degradation. All these issues are becoming transborder in nature. Thus, the essential philosophy of the SDGs is based on the inter connectedness of the global problems.
2. **Multi-dimensional approach:** The SDGs are spread across 17 goals and 169 targets. The 17 SDGs are based across 3 dimensions of SDGs with 6 social goals, 5 economic goals and 4 environmental goals. A separate goal 16 is adopted on peaceful societies and effective institution for creating an environment for development in a country. A standalone goal (17) on global partnership has been included to provide financial, technological and systematic support to the developing countries.
3. **Method of implementation:** An important feature of the SDGs is their focus on the method of implementation. The issues of mobilization of financial resources, capacity building is part of the mechanism of achieving the targets under each goal. Thus, separate means of implementation targets have been included under each of the goals.
4. **Monitoring and Review:** Review and monitoring has been accorded special significance in SDG so as to track the progress of the developmental goals and targets. The UN Resolution underlines the importance of follow up at the national as well global level.
5. **Voluntary National Review:** As part of its follow up and review mechanism, countries are urged to conduct regular reviews of progress of each target. They are called as voluntary National Reviews.

SDG AND INDIA

India has emphasized on rapid economic growth as means of lifting large number of people below the poverty line. India has witnessed tremendous growth in the last 10 years and is termed as one of the fastest growing economies in the world. However, it is reasoned that while a lot of work has already been done for infrastructure development, not every Indian has benefitted from this growth uniformly. These challenges continue to be faced by all countries across the world. India has adopted SDGs as an agenda for development.

In India, NITI Aayog has been given the responsibility of implementation of SDGs at the national level. NITI Aayog in consultation with Central Ministries, State and Union Territories has created targets specific to India under each goal. Beginning with a baseline report on these targets in 2018, NITI Aayog has been tracking the progress under SDGs through yearly reports. In 2018, India had a score of 57 in SDG Index which has increased to 66 in 2020-21.

SDGS: PROGRESS OF INDIA

Based on 62 priority indicators identified by NITI Aayog, the SDG India Index Report has been generated. The report helps in tracking the progress made by India under the SDG. The performance of state and union territories under each goal is identified to map their achievement and the follow up action to be taken to enhance their efforts.

Goal 1: Goal 1 aims at eradicating poverty - not only in monetary terms but in all forms and dimensions by 2030. This involves targeting the most vulnerable sections of the society, increasing basic means of survival, and supporting communities affected by conflict and climate-related disasters. The Goal 1 is measured on the basis of 5 national level indicators. The index score for SDG 1 on poverty was 54 in 2018 to which has improved to 60 in 2020-21. Some of the important anti-poverty programmes introduced by Government is Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005 and the National Rural Livelihood Mission. These schemes aim at creating employment, skill development and livelihood opportunities among the poor. Achievement: Global SDG target aims to reduce at least by half the proportion of people living in poverty in all its dimensions according to national definitions. According to Tendulkar Committee estimates, poverty rates in India stand at 21.92 percent.

The MGNREG Act, 2005 aims to provide hundred days of guaranteed wage employment in every financial year to every rural household whose adult member is willing to do unskilled work. During 2019-20, 84.44 percent of people who demanded employment were covered under this act.

Goal 2: The objective of Goal 2 is to eradicate all forms of hunger and malnutrition by 2030, including children ensuring sufficient and nutritious food all year. This includes promoting sustainable agricultural, supporting marginal farmers and providing equal access to land, technology and other resources. Under this goal, 4 national level indicators have been identified. The SDG Score in 2018 stood at 48 which has marginally reduced to 47 in 2020-21. The notable programmes introduced under this goal includes Antyodaya Anna Yojana and Mid-day meal scheme.

Achievement: 99.51 % of beneficiaries were covered under the National Food Security Act 2013 in 2019-20. Efforts are being made to double the productivity of rice and wheat (from the base year of 2015-16) to 5,322 kg/Ha by 2030.

Goal 3: Good health is vital to sustainable development. It considers factors like rising economic inequalities, rapid urbanisation, threats of climate change and the environment and emerging challenges such as non-communicable diseases. The Goal 3 also tackles mental health issues as well. Universal health coverage, including health insurance, access to quality affordable health services and access to affordable medicines are integral to this goal to measure India's Performance for Goal 3, 5 national level indicators have been identified. The SDG index Score for India in 2018 was 52 which rose to 74 in 2020-21. The notable initiatives introduced by India include the National Health Mission, Beti Bachao Beti Padhao yojana, Sukanya Samridhi Yojana.

Achievement: The Maternal Mortality Ratio (MMR) in India stood at 113 per 1,00,000 live births while Global target aims to reduce it to 70 per 1,00,000 live births by 2030. According to the Health Management Information

System, during the period April 2019-March 2020, 91 percent of children in India in the age group of 9-11 months were fully immunized.

Goal 4: Achieving inclusive and quality education for all restates the belief that education is one of the most powerful tools for sustainable development. This goal is aimed at ensuring that all girls and boys complete primary and secondary schooling by 2030 and are provided equal access to affordable vocational training and achieve universal access to a quality higher education. It also stresses on lifelong learning opportunities, so as to achieve adult literacy and numeracy, and on building and upgrading existing educational facilities that are sensitive to children and all forms of disability. Goal 4 is based on quality education. 7 National level indicators are identified under this goal. The SDG score for Goal 4 in 2018 stands at 58 which rose marginally to 57 in 2020-21. The important programmes identified by government includes the flagship programmes of Samagra Shiksha, Sarva Shiksha Abhiyan.

Achievement: The Net Enrolment Ratio at Elementary (Class 1-8) level in India stood at 87.26 percent. Three States and one UT namely Karnataka, Manipur, Tripura and Delhi have achieved the target of 100 percent enrolment at elementary level.

The average annual dropout rate at the secondary level in India is 17.87%. The Gross Enrolment Ratio (GER) at higher secondary level was 50.14%. In 2018-19, 84.76 % of schools had access to basic infrastructure (electricity and drinking water).

Goal 5: Ending all forms of discrimination against women and girls is a necessity for sustainable development. Goal 5 aims at eradicating all forms of violence and sexual exploitation of women and girls. The Goal 5 gives importance to equal participation and equal opportunities for women at all levels of decision-making in the country including political, economic and public life in the country. 6 National level indicators are identified under this goal. The SDG score in 2018 stood at 36 which rose to 48 in 2020-21. The important schemes launched by India includes Beti Bachao Beti Padhao campaign and Sukanya Samrddhi yojana.

Achievement: Sex Ratio at Birth in India stood at 899 females per 1,000 males against the target of sex ratio at birth of at least 950 females for 1,000 males. The average wage earned by females is only three-fourth of that of males among regular wage/salaried employees for the period April 2018-March 2019. The ratio of female to male LFPR stood at 0.33 in 2018-19. On an average, 8.46 percent of seats in the State Legislative Assemblies are held by women against the target of 50 % of the seats being held by women.

Goal 6: Goal 6 aims at providing access to safe and affordable drinking water, sanitation facilities, and hygiene for all by 2030. Water resources are important for agriculture and industrial usage and therefore protecting and restoring water bodies is essential for protecting communities in the country. The goal highlights improving water quality in the country by reducing pollution and encouraging the participation of local communities in improving water and sanitation facilities. Goal 6 is based on clean water and sanitation. 5 national level indicators are identified. The SDG index in 2018 stands at 63 which have improved substantially to 83 in 2020-21. The important policy includes National rural drinking water programme, Swach Bharat Mission -Gramin.

Achievement: Around 51 % of the people living in rural areas receive safe and adequate drinking water in their houses through piped water supply. The aim is to increase it to 100 %. While the national target is to provide access to improved source of drinking water to all, currently 97.44 % of the rural population in India has access to improved sources of drinking water. Another important milestone is that around 95 % of schools in the country have separate toilet facilities for girls. The target is to eventually cover all schools.

Goal 7: Availability of energy is essential for socio-economic development. Access to energy enables people to increase their income and productivity, enhance access to water and education, and improve their overall quality of life. Goal 7 is aimed at ensuring universal access to affordable and efficient energy facilities by 2030. Expanding infrastructure and upgrading technology to provide clean and efficient energy is critical to this objective. To achieve goal 7 of affordable and clean energy, 3 national level indicators have been identified. The SDG score in 2018 was 51 which have increased to 92 in 2020-21. The important programme launched by government includes the National electricity plan, National energy policy, Deen Dayal Upadhyaya Gram Jyoti Yojana and Pradhan Mantri Ujjwala Yojana.

Achievement: India has made tremendous effort to increase household electrification and is set to achieve the target of providing universal access to electricity to every household. At the end of March 2019, as per the Saubhagya dashboard of the Ministry of Power, nearly 99.99 % of households were covered by electricity.

Goal 10: This goal aims at innovation; and reliable and strong infrastructure which are imperative for economic growth and development. It also looks at measures to improve resource efficiency and greater adoption of better technologies for environmental protection. It recognises the importance of promoting sustainable industries and investing in scientific research and innovation, which are all important ways to facilitate sustainable development. 5 national level indicators are identified for achieving this goal. The score in 2018 is 71 to fell to 67 in 2020-21. The important government schemes are Pradhan Mantri Jan dhan yojana, Prime Minister Employment Generation Programme, Deen Dayal Upadhayaya Grammen Kaushalya Yojana.

Achievement: Good connectivity is essential for industrialisation and development. The Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched by the Government of India to provide connectivity to unconnected habitations through all-weather roads. At the national level, close to 98 percent of targeted habitations have been covered to date under PMGSY. As per the Periodic Labour Force Survey, 12.07 percent of India's total workforce was engaged in the manufacturing sector in 2018-19. Presently, for every 100 people in the country, 84 persons have a mobile connection while only 55 persons have internet connection.

Goal 11: The Goal aims at reducing inequalities in all forms by guaranteeing equal opportunities and promoting social, economic and political inclusion of all, irrespective of age, sex, disability, religion or economic or any other parameter within a society. It also aims at enhancing representation and voice for developing countries in decision making in international economic and financial institutions. Goal 11 focusses on sustainable cities and communities. 4 national level indicators have been identified. The SDG score for this goal 2018 was 39 which rose to 79 in 2020-21. The various strategies formulated are Atal Mission for rejuvenation and Urban Transformation and Pradhan Mantri Awas Yojana.

Achievement: According to the Wealth Index of the National Family Health Survey-4, in 2015- 16, there exists wide disparity in wealth distribution in India. There is regional disparity in living standards across India. The Indian Constitution provides for reservation of one-third of the seats of Panchayati Raj Institutions for women. In 2020, 45.62 percent of the seats in the Panchayati Raj Institutions in India were held by women.

Goal 15: SDG 15 deals with Life on land. 4 national level indicators have been identified. The score under this goal in 2018 was 90 to fell to 66 in 2020-21. The initiative taken by Government include National Environment Policy, National Agro forestry policy.

India has set a national goal of bringing 33 percent of the geographical area under forest and tree cover. The total forest cover of the country is 7, 12, 249 sq.km which is 21.67 percent of the geographic area. Tree cover covers around 25 percent of the geographical area under forest area. 1.7 million hectares of land were covered under different afforestation schemes in 2017-18.

Goal 17: In the last decade, India's role in development cooperation and partnership, especially at the global level, has undergone economic transformation. India has actively contributed to crafting of policy that offer a platform for countries of the developed and developing countries to cooperate on multiple fronts, such as ISA (International Solar Alliance); CDRI (Coalition for Disaster Resilience Infrastructure); BRICS (Brazil, Russia, India, China, South Africa), IBSA (India, Brazil, South Africa); India-Africa Forum Summit; India-PSIDS; the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) etc. Working towards global partnership has, become very relevant as a policy imperative for the country. Goal 17 focusses on global partnership for sustainable development. It looks at successful implementation of SDGs such as financing for development, access to technology, facilitator of global growth, institutional coherence and policy coverage.

CONCLUSION

Since the adoption of the SDGs, India has committed itself to achieving the various targets created under the global goals. While in certain goals, India has made remarkable progress, in others further efforts have to be made to realize the targets set. In conclusion, the growth path set by India keeping the SDGs in mind is the only way to achieve a truly inclusive and sustainable growth.

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GREEN ENERGY AND ENVIRONMENT

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ABSTRACT

This chapter will discuss the importance and benefits of the environment and human life. Green energy—everyone knows that it is a non-polluting energy or resource that we have. Such energy differs from place to place. In the Himalayan region of India, wind power cannot be developed because of its geographical location and altitude. Whereas, in the southern part of India and elsewhere, wind energy can produce this alternate source of energy. This chapter informs you of the importance and benefits of this resource to the environment because it does not harm people and is a non-polluting resource. In this chapter, the types, benefits, and importance of the environment will be discussed in detail.

Keywords: Green Energy, Climate Change, Environment, Human Health, Development

INTRODUCTION

Green energy today has become a major concern, making clean energy and renewable energy possible. Green energy is one of the core areas of development that creates electricity other than electrical energy, where the resources of the sun, wind, and solar power can be abundantly developed. Green energy is also one of the pillars of sustainable development. There are some barriers to developing green energy sources because of geographical locations. Government funding for the projects is one of the main earmarks of the development of the nation, and unless the government takes this into consideration, then the country's development is lacking. Therefore, the government is the first priority in developing the regions, and human development in any employment field will be seen. We can understand that the hilly areas of India have some difficulty with the development of wind energy; instead, solar energy can be considered. Make use of the sun, wind, and solar energy as clean energy so that developers can adopt the mechanism and strategy to produce such energy. Just as the use of plastic bags is dangerous to the earth, clean energy is the best solution for polluting energy that does not have a negative impact on the environment.

CONCEPT

The terms 'green energy' and 'renewable energy' are used synonymously. Green energy is derived from natural sources such as the sun, whereas renewable energy is also a source is continuously restored, such as solar energy, wind power, hydropower, and so on. Green power is a subcategory of renewable energy that includes resources that help the environment. All renewable energy resources are renewable, but not all renewable energy resources are green. The use of an inverter battery and electrical energy are two sources of energy that combine to create a super-powerful and energy-efficient product that provides energy with additional electrical benefits for use. Several eco-friendly solar power items have been developed as a result of creativity (Kalyani, 2015, p. 18–19). We need development, but our goal is to save the planet by developing smart technology that employs environmentally friendly energy resources. Green energy, according to the Environmental Protection Agency (EPA), delivers the greatest environmental advantages and includes power generated by solar, wind, geothermal, biogas, low-impact hydroelectric, and certain qualified biomass sources.

LITERATURE REVIEW

The following is the related literature review:

Samaz, U. M. et al. (2020), urge theorising that renewable energy sources positively impact human development and health. Governments face challenges in investing in renewable energy, including public knowledge, policies, land scarcity, political awareness, and technical issues. Policymakers encourage private sector investment through feed-in tariffs (FIT), tax credits, and financing loans.

Rogers, S.A. (2021), urges that green energy, derived from renewable resources like sunlight, wind, rain, tides, plants, algae, and geothermal heat, is becoming affordable due to advancements in renewable energy technologies. Urge that these non-polluting energy sources include photovoltaic cells, solar energy, wind energy, hydroelectric power, geothermal energy, biomass, and biofuels. These renewable energy resources provide energy without the need for fossil fuels, making them a sustainable and eco-friendly alternative to traditional energy sources.

Azam et al. (2023) urge that governments in underdeveloped nations invest in renewable energy sources like wind, solar, and geothermal for sustainable development. This will improve living conditions and human growth, as conventional energy sources negatively impact energy poverty. Green energy initiatives should be prepared to address issues like depleting nature, unequal educational opportunities, income inequality, and environmental degradation.

The **United States Environmental Protection Agency (2023)** defined green power as a subcategory of renewable energy that benefits the environment by generating electricity from renewable resources like solar, wind, geothermal, biogas, and low-impact hydropower that the US voluntary market has described. However, conventional energy sources like coal, natural gas, and nuclear uranium fission have negative effects on the environment, releasing greenhouse gases and air pollutants.

Objective of the Study

Following are the objectives of this study:

1. To study the concepts of green energy and renewable energy.
2. To analyse the types of green energy and their benefits to humans and the environment.
3. To analyse the relationship between green energy and climate change with that of a wildlife scenario.

METHOD OF DATA COLLECTION

This study used secondary sources from websites like journals, articles, EPA agencies, etc. In this data analysis, descriptive methods and theoretical applications are used. As an assumption, the development of clean or green energy sources is part of energy development.

TYPES OF GREEN ENERGY

There are various types of Green energy that are non-polluting to the environment and environmentally friendly:

Solar Energy has a sub-category in this section:

Solar Thermal Application

Solar cooking and crop drying are two applications of the abundant source of solar thermal energy. (i) Solar cooking is a practical and efficient method for cooking vegetables, while (ii) solar water heaters offer environmental protection, and (iii) Solar technology also ensures clean, hygienic, and sanitary conditions for vegetables and fruits, reducing space usage, energy consumption, and environmental concerns.

Solar Thermal Power

Due to its benefits, solar energy is a very significant energy source. In many isolated places around the world where electricity is not readily available, solar radiation is abundant, making it possible to use solar energy to generate electricity. The solar collector is the main part of any solar thermal system.

Solar Photovoltaic System

Solar photovoltaic systems and electrical energy are crucial to developmental initiatives as conventional energy sources are limited. These systems convert sunlight into electricity without pollutants, noise, or vibration, while diesel substitution offers higher potential to reduce carbon dioxide emissions compared to petrol. Similarly, direct solar energy is converted to electricity using photovoltaic cells and the photovoltaic effect (Panwar et al. 2011, p. 1516).

WIND ENERGY

Wind power is rapidly expanding, with installed capacity second only to hydroelectricity. India is a promising nation for wind power development, with the potential to reduce greenhouse gas emissions and mitigate climate change effects. Wind turbines convert wind energy into electricity, providing mechanical power through airfoils, making them a practical and efficient source of electricity.

BIOENERGY

There are various subtypes of bioenergy. They are succinct.

Biogas

These systems are environmentally friendly and energy-efficient methods for producing bioenergy. They involve four stages: hydrolysis, acidogenesis, acetogenesis/dehydrogenation, and methanation. Biogas is directly fueled by domestic cooking, transportation fuel, and natural gas distribution. Biogas systems offer an economically feasible alternative to conventional heating systems, reducing greenhouse gas emissions and slowing global warming.

Impact of biogas: If not managed properly, the large quantities of animal manure and slurries produced today by the animal breeding industry, as well as the wet organic waste streams, offer ongoing contamination threats. A family-sized biogas plant's ability to combat global warming will balance and reduce greenhouse gas emissions, and it is a clean development strategy.

Bio-Diesel

Regarding the global energy scenario, fossil fuels will continue to be the dominant source of energy consumption worldwide. A clean-burning, renewable, and biodegradable fuel is biodiesel. Mahua oil, *Jatropha curcas*, *Pongamia pinnata* oil, palm oil, rubber seed oil, duck tallow, and castor seed oil are all used to make biodiesel, and mixes of these resemble diesel in their properties.

Impacts: Alternative non-petroleum fuels for engines are gaining global attention due to rising petroleum prices, environmental hazards, and climate change. Biodiesel, a major greenhouse gas generator, can lower emissions and potentially improve human health (Ibid., p. 1519). Because crop cultivation recycles the carbon dioxide produced during biodiesel combustion, it has no negative environmental effects.

Biomass Gasifier

The Indian Institute of Science (TERI) and the Sardar Patel Renewable Energy Research Institute (SPRERI) collaborate to promote biomass combustion and renewable energy through gasification technology. The Indian Institute of Science and MNRE collaborate to develop downdraft gasification-based techniques for biomass combustion and energy production, primarily targeting woody biomass.

Impacts: Gasification technology has enormous potential for use in low-temperature applications in small enterprises, and it is a clean development strategy.

Enhanced Cook Stoves

Salam Abdul and Bhattacharya highlight the imperfect technique of traditional cooking stoves, which favours partial combustion. This resulted in incomplete combustion, causing global warming and releasing harmful pollutants like Polycyclic Aromatic Hydrocarbons (PAHs), carbon monoxide, and organic chemicals. Improved cookstoves can reduce emissions and improve health standards for women and children.

Impacts: Improved household cookstoves can decrease global warming by improving fuel efficiency, clean kitchen conditions, and indoor air quality. This leads to (i) reduced fuel demand, (ii) reduced exposure to harmful air pollutants, and (iii) reduced greenhouse gas emissions, benefiting both households and the environment (Ibid., p. 1521).

Fueled by Hydrogen

The global energy future will see hydrogen play a significant role by replacing fossil fuels and providing clean, environmentally friendly energy sources. Now, coal, natural gas, and others are used to manufacture hydrogen.

Hydrogen air is used for vehicles. This promising alternative eliminates contaminants and releases water back into the environment.

Impact: Energy production using renewable resources like solar, geothermal heat, wind, and water reduces carbon dioxide emissions. Switching to sustainable biomass fuel reduces costs, increases agricultural output value, and reduces municipal waste disposal costs (Ibid., p. 1522).

DISCUSSION AND FINDINGS

Green Energy and climate change

Green energy, also known as “clean energy,” is important because our climate is changing significantly. According to the IPCC Fourth Assessment Report (AR4), anthropogenic greenhouse gas concentrations are responsible for the majority of the observed increase in global average temperature since the mid-20th century. Data show that the majority of global anthropogenic GHG emissions are caused by the use of fossil fuels. To address basic human requirements and support productive processes, all civilizations require energy services. It observes that reducing GHG emissions from the energy sector may be sufficient to meet global demand for energy services. Renewable energy has the ability to bring broader advantages due to its great capacity to combat climate change. Renewable energy, often known as green energy, has the potential to contribute to social and economic development by providing a reliable energy source while reducing negative environmental and health impacts. Additional policies would be required to attract the necessary increases in investment in technology and infrastructure (Edenhofer, 2011, pp. 7–12).

On the other side, climate change has an impact on renewable energy sources, but the precise form and scale of these consequences are unknown. Climate change has an impact on biomass production, which can modify soil conditions, precipitation, crop yield, and other aspects. On a worldwide scale, the overall impact of a global mean temperature rise of less than 2 degrees Celsius on biodiversity is likely to be quite minor. Climate change is projected to have a minor impact on the distribution and fluctuation of cloud cover for solar energy. The impact of hydropower on global technical potential is projected to be possible. As a result, these options will differ significantly among areas and within nations. According to research, climate change is unlikely to have a significant impact on the worldwide technical potential for wind energy development, but changes in the regional distribution of wind energy resources are possible. Climate change is unlikely to have a significant impact on the spatial distribution of geothermal or oceanic energy resources (Panwar et al. 2011, p. 1514).

POLICY IMPLICATION

Several policy implications are listed below

1. Governments should encourage clean energy development and create a scientific and rational energy structure. Government agencies should attempt to shift from fossil fuels to clean and renewable energy so that carbon dioxide is reduced at the global level. Countries should actively adjust their energy systems to achieve carbon neutrality. Governments should focus on developing the green protection industry, the cleaner production industry, the ecological environment industry, the clean energy industry, and the green building industry.
2. Governments should develop environment-related technologies as a priority item. They should strengthen international partnerships to improve global environmental standards and provide policy support for environment-friendly innovation and decarbonization technologies. For example, China proposed to establish a green development alliance of the ‘Belt and Road’ countries committed to promoting green investment, sharing technical knowledge, and resolving environmental problems.
3. A comprehensive green financing system should be established. Governments should set up an industrial chain and large-scale green finance to ensure the development of a low-carbon economy. Governments should stimulate the vitality of carbon assets and promote their efficiency. Flexible and diversified financial services should be applied in clean energy sectors (Quan Zhang et al., 2022, pp. 10–11).

GREEN ENERGY AND ENVIRONMENT

Green Energy, often known as green lighting, is vital for the Environment for several reasons:

1. Green energy uses renewable resources like wind, water, and sunlight to offset the negative effects of fossil fuels. Additionally, these materials are eco-friendly, clean, and renewable.
2. Green power, often known as green power, is another locally produced, reliable, and affordable source. The best residential and business locations for inverter batteries are those with a high frequency of power outages. Such sources of energy are non-polluting and environmentally protected.
3. The economic advantages of green energy include the development of jobs. Data, for example, can demonstrate that in 2018, renewable energy generated millions of jobs globally.
4. Inexhaustible resources led to sustainable energy. Like the sun and wind, which are limitless and renewable in accordance with natural cycles, it is a clean energy source. Systems using renewable energy support economic growth for future generations. It moves in the direction of a clean-green energy economy.
5. Green energy also embodies a low-cost solution for many regions of the world's energy requirements (Amplus Solar, Gurugram, Haryana, 2022).
6. Democracy is reflected in the rise of community energy projects employing renewable energy sources around the globe. At the national and international levels, cities take a proactive stance against climate change. In numerous locations throughout the world, public pressure and citizen engagement have increased cities' ambition levels for renewable energy (REN21, Renewables Now, 2019).
7. The WHO claims that 'renewable or green energy' is healthier since people all over the world breathe air that is dangerous to their health and exceeds air quality standards owing to preventable environmental factors like air pollution. According to Antonio Guterres, it is time to stop destroying the earth and to start investing in the abundant renewable energy that is available all around (Climate Action, UN).

GREEN ENERGY AND WILDLIFE

Before the establishment of Green energy, various wildlife species in that area were well adapted to live in deserts, from mangroves, salt pans, and lagoons to grasslands and dunes where severe temperatures make life difficult, according to a group of animal conservationists, 'The Habitats Trust.' Occasionally, India's wildlife faces a wide range of difficulties as a result of a lack of widespread and formal legal recognition for their habitat. The allocation of habitat for the development of renewable energy sources and the infrastructure for solar parks, wind turbines, and power lines both negatively impact endangered species by destroying their habitat. The expansion of renewable energy infrastructure in the habitat of the critically endangered Great Indian Bustard, as well as the efforts of the Corbett Foundation (TCF) to preserve neglected wildlife habitat, are a few examples. By 2030, there will be 450 gig watts of installed capacity for renewable energy, with solar energy accounting for 60 percent of that. The endangered biodiversity of Thar and Kutch needs urgent consideration in light of this growth (The Habitat Trust, 2021).

CONCLUSION

In conclusion, it can be summarized that green energy is one of the pillars of clean and non-polluting energy. But in some other related case, it has been found that there is a negative impact on the environment as well as the habitats because the wildlife home is part of the destruction as far as the developmental project is concerned. Green energy is one of the best sources of energy for sustainable development, sustainable environments, and even sustainable climate conditions. It is clean energy and one of the most suitable sources of energy. It is concluded that green or clean energy is one of the tools and technically used to generate electricity rather than fossil fuel energy sources.

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THE DOWNFALL IN CASH TRANSACTIONS? HOW DIGITALIZATION & INNOVATION REVOLUTIONIZING THE PAYMENT SYSTEM

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ABSTRACT

Digital Transformation has revolutionized the way we conduct financial transactions, making them more convenient, efficient, and secure. The growth of electronic payment systems like BHIM-UPI, IMPS, and NETC are discussed, as well as the reasons for the switch from cash to electronic payments. The fall in cash transactions and the impact of innovation and digitization on the payment system are covered in this research paper. The paper also looks at cutting-edge technology and creative solutions that are reshaping the payment landscape. The secondary data acquired from various sources has been examined in the paper by using a descriptive research design. It examines the decline of cash transactions as well as the implications of innovation and digitalization on the payment system through thematic analysis and content analysis. According to the study, the popularity of digital payments has been rising as a result of its practicality, security, and effectiveness. Additionally, it reveals that cutting-edge technologies like block chain and biometric authentication are enhancing the security and practicality of digital payments. The study comes to the conclusion that the society's transition towards digitalization in payment system is the result of fall in cash transactions. Moreover, the digital payments have the power to completely transform the payment industry and improve its convenience, safety, security and efficiency.

Keywords: Digital Payments, Cash Transactions, Innovation, Digitalization, Payment System.

INTRODUCTION

Over the past few decades, there has been a significant shift towards digitalization and innovation in payment systems. This transformation has revolutionized the way we conduct financial transactions, making them more convenient, efficient, and secure. With the advent of online banking, mobile wallets, and contactless payments, individuals now have a wide array of options to choose from when it comes to managing their money. These digital payment systems offer unparalleled convenience by allowing users to make transactions anytime, anywhere with just a few taps on their smartphones. Moreover, they provide enhanced security measures such as encryption and biometric authentication to safeguard sensitive financial information.

As a result, people can now enjoy the benefits of seamless and speedy transactions while minimizing the risks associated with carrying cash or sharing personal details. The continuous innovation in payment systems not only caters to the needs of tech-savvy individuals but also promotes financial inclusion by bridging the gap between those with access to traditional banking services and those without.

Definition of Cash Transactions: Cash transactions refer to financial transactions that involve the use of physical currency, such as banknotes and coins, as a medium of exchange. Unlike digital or electronic transactions, cash transactions are conducted using tangible money and do not require the involvement of banks or other financial intermediaries. Cash transactions have been an integral part of economic systems for centuries and continue to play a significant role in various sectors, including retail, hospitality, and informal economies. Sweden, the first European country to issue banknotes, is the world's most cashless society with 32 ATMs per 100,000 people and 98% owning debit/credit cards. It also ranks as a top mobile payment user and is leading in contactless mobile payments adoption, with some studies suggesting physical cash could be

eradicated by 2024. Cash transactions offer several advantages that make them crucial in today's economy. Firstly, they provide a sense of anonymity and privacy for individuals engaging in these transactions.

Unlike digital payments that leave a trail of data, cash transactions allow individuals to maintain confidentiality regarding their financial activities. This aspect is particularly important for those who prioritize privacy or have concerns about data security. Secondly, cash transactions are accessible to all individuals regardless of their socio-economic background or technological literacy. Not everyone has access to banking services or possesses the necessary digital devices for electronic payments

LITERATURE REVIEW

(S & D, 2017), the study examined the opportunities and difficulties of India's e-payment systems, which permit online purchases of products and services without using actual currency or checks. Given India's stage of demonetization, it wants to enhance the e-payment system and address problems in the existing digital landscape. The study highlights both the advantages and disadvantages of e-payment methods.

(Pandey & Rathore, 2018), the study revealed that Government must tackle literacy and strengthen education system from the start. Educated youths should help others and pass knowledge on, while addressing cybercrimes and security through strict rules. Further, Digital Payment in India enhances security, safety, and lifestyle by adopting latest technologies, promoting globalization and modernization, and enhancing knowledge and awareness among society.

(Ch & V.T., 2021), the paper analyzed Covid-19-related issues in the Indian economy, focusing on the banking sector, focusing on digital payment for safe, secure transactions. Digital players encourage consumers to use QR codes for payments, avoiding infection and transaction loss. Google Pay offers enhanced security and easy transactions.

(Ghosh G., 2021), this essay examined how modern payment methods were affected by digitalization, which was made possible by developments in information and communication technology. The study took into account the function of digital payments in advancing a cashless society and helping the government's Digital India goal. It also looked into the factors that led to the rising use of digital payments in India after demonetization and the seamless integration of digital wallets.

(Sahi et al., 2022), this paper attempted to summarize the growing body of research on the privacy and security vulnerabilities associated with digital payments. A bibliographical approach was utilized to survey 591 studies in order to evaluate the field's intellectual development and suggest areas for further research. The paper pinpointed potential reasons for the dearth of diverse research and made recommendations for improving digital payment research. Researchers, analysts, regulators, practitioners, and investors in the field would have gained knowledge from this study.

(Khando, Islam, & Gao, 2023) the paper review categorized digital payment technologies into card payments, e-payments, mobile payments, and crypto currencies, offering a comprehensive overview of emerging systems and improving digital finance education.

OBJECTIVE OF THE STUDY

1. To explore the digital payment revolution and technological advancements driving the shift from cash based system to digital payment methods.
2. To investigate the innovative solutions and emerging technologies that are revolutionizing the payment ecosystem.
3. To explore the future trends and possibilities in payment system and the potential impact of emerging technologies.

RESEARCH METHODOLOGY

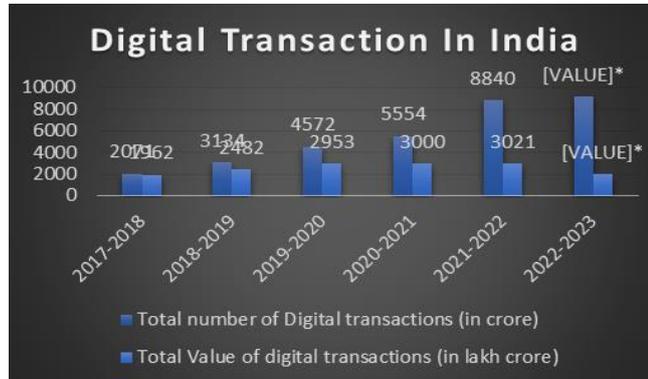
In order to investigate the decline of cash transactions and the effects of innovation and digitalization on the payment system, this study used a descriptive research design. The research design enabled a thorough

examination of secondary data gathered from numerous sources. Academic journals, books, research summaries, business periodicals, credible websites, and other pertinent sources were used to collect secondary data. These resources offered a wealth of data on the subject, enabling a thorough and trustworthy study.

The end of cash transactions and the effects of digitalization and innovation on the payment system were examined using techniques such as thematic analysis and content analysis.

THE DIGITAL PAYMENT REVOLUTION AND TECHNOLOGICAL ADVANCEMENTS

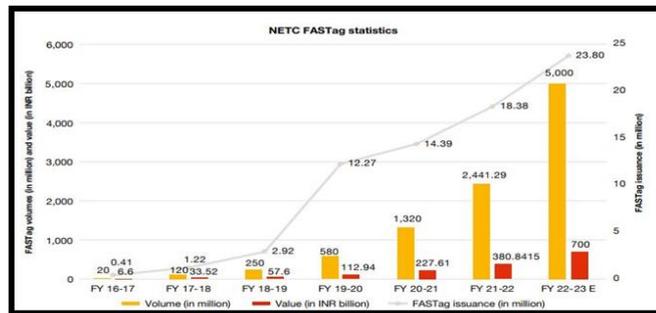
Over the past five years, digital payment modes like BHIM-UPI, IMPS, and NETC have experienced significant growth, transforming the digital payment ecosystem.



Source: Chart created by Author (<https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1897272>)

BHIM UPI has become the preferred payment mode for citizens, with 803.6 crore digital transactions valued at 12.98 lakh crore in January 2023 (IT, 2023). After Covid, people are adopting digital payments due to fear of physical contact with virus carriers. Countries are raising transaction limits for contactless payments, with the RBI waiving transaction limits on contactless cards for up to Rs. 5,000.

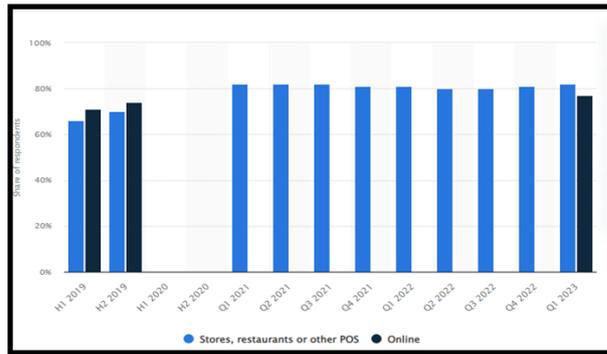
NETC FASTag a big achievement is accepted at over 650 toll plazas, including national and state highways, through 14 acquiring banks. The NETC system covers almost all national highways and adopted only at very few state highways and other city toll plazas. Expanding NETC infrastructure to these areas will reduce travel time and congestion. FASTag recharge is available through various platforms, including bank transfers, wallets, and e-mandates.



Source: <https://www.pwc.in/assets/pdfs/consulting/financial-services/fintech/payments-transformation/evolving-toll-payments-landscape-in-india.pdf>

The graphs show the growth rate has been rising year by year. Tolling solutions are becoming more innovative due to logical integration of technologies and flexibility. The NETC ecosystem can integrate with various payment solutions, increasing opportunities in the future.

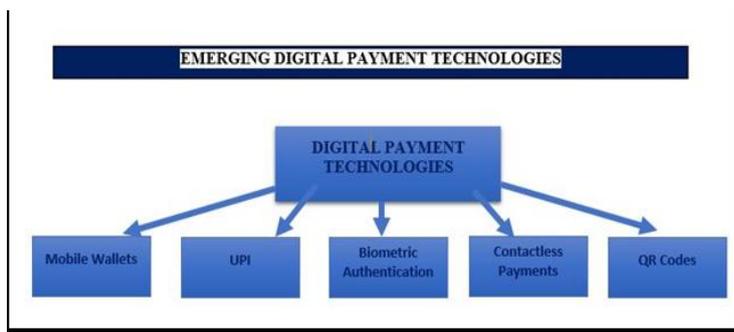
India's JAM trinity, consisting of Jan Dhan Accounts, Aadhar, and Mobile, has revolutionized the country's economic ecosystem. PM Jan DhanYojana aimed to provide financial inclusion, opening 46.25 crore bank accounts in 2022. Aadhar IDs transformed identity services, enabling digital authentication and instant payment systems. Mobile showcased India's core digital innovation, lowering data costs and enabling low-priced internet access, boosting e-commerce, food delivery, and OTT content. This has made digital payment systems accessible to remote regions, demonstrating India's potential for economic growth ((GOI), 2023). As per the report India's contactless transactions see 6x growth in three years in June 2022, The pandemic has led to a significant increase in contactless transactions, with QSRs, restaurants, groceries, drugstores, and pharmacies contributing 80% and 60% of card transactions. The number of contactless transactions in supermarkets increased from 25% in January 2020 to 31% by January 2022. The global contactless payment market is expected to reach \$6.25 trillion by 2028.



Source: Google Pay Usage either for Online Payments or at POS in India from 2019 to 1st quarter of 2023 (Statista, STATISTA.COM, 2023)

INVESTIGATE THE INNOVATIVE SOLUTIONS AND EMERGING TECHNOLOGIES THAT ARE REVOLUTIONIZING THE PAYMENT ECOSYSTEM

The payment ecosystem has been undergoing significant transformation, with innovative solutions like blockchain technology revolutionizing transactions, ensuring security and transparency. Emerging technologies like biometric authentication and artificial intelligence are reshaping the landscape, providing seamless and personalized experiences for users. From contactless payments to digital wallets, these technologies are streamlining transactions, enhancing security, and improving convenience for businesses and consumers. The future of payments holds endless possibilities for a seamless and efficient experience. Stay ahead of the curve by exploring these emerging technologies and their potential impact on the future of payments. Google Pay adoption in India increased in 2023 compared to early 2019, with 8 out of 10 respondents using the service for POS transactions and 7 out of 10 for online shopping. This indicates a growing trend among consumers in India(Statista, STATISTA.COM, 2023).



Source: Created by Author as per available information.

A report by Business Standards (Dec, 2022) reported India has 350 Million Digital payments users. GlobalData predicts a 23.9% CAGR in payments through mobile wallets between 2023 and 2027, reaching RS. 472.6 trillion (\$5.7 trillion) in 2027. Cash is declining due to India's efforts to promote digital transactions, particularly the Unified Payments Interface (UPI), making mobile wallets the preferred choice for payments in the country. UPI, launched by NPCI, has become a popular method for daily payments, enabling instant transfers between bank accounts using mobile numbers or QR codes, making transactions quicker and more convenient. High QR code adoption among merchants drives rapid mobile wallet adoption in India; Reserve Bank of India mandates interoperability from April 2022, enabling QR code payments. India's cashless society is a result of the United Payment Interface and e-wallet players, fueled by events like demonetization and the Corona pandemic. Digital payments have transformed consumer behavior, with over 72 billion digital transactions recorded in 2022 (Statista, 2022).

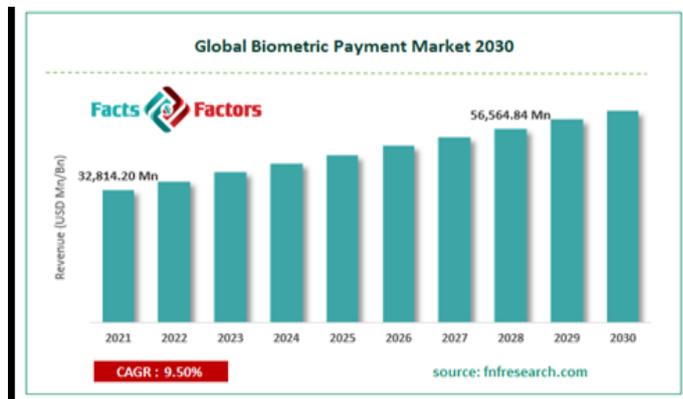
The payments industry is rapidly transforming due to new technologies, business models, and market changes. This has led to the surge of e-commerce and the transformation of customer payment services from a support function to a differentiated service offered by a growing number of providers. Payments are also becoming a source and provider of data for enterprises to target potential customers. Consumers are increasingly overcoming barriers to digital payments, making the process more convenient and less costly. However, innovation has not fully permeated certain payment streams, such as international remittances and cross-border payments. The Committee on Payments and Market Infrastructures (CPMI) reports that cross-border payments lag behind domestic payments in terms of cost, speed, access, and transparency. Additionally, many developing economies struggle to digitize their government payments and collections effectively, requiring regulators and supervisors to create an enabling environment for innovation while developing regulatory, oversight, and institutional capacities.

THE PAYMENT SYSTEMS: FUTURE TRENDS AND POSSIBILITIES

Payment system development has a bright future. It is impossible to predict what the future will bring because new technologies are always being developed. One thing is certain, though: in the years to come, how we pay for products will change significantly.

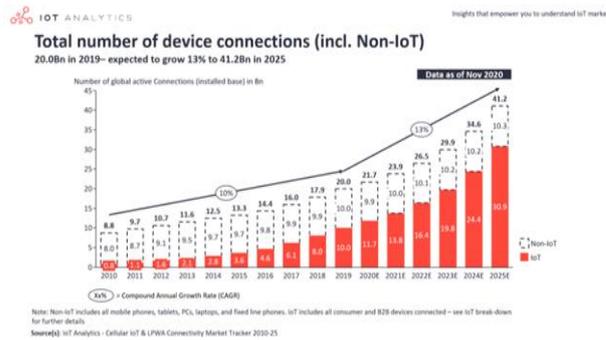
New technologies are always being developed, which is accelerating the evolution of payment systems in the future. Among the more encouraging trends are:

Biometric Authentication: To confirm a person's identification, this technology uses distinctive physical traits like voiceprints, facial scans, and fingerprints. Due to its superior security and usability compared to conventional passwords or PINs, biometric authentication is growing in popularity for payment processing.



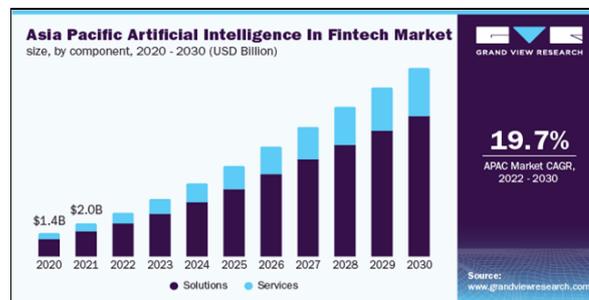
Source: FNFResearch.com

Internet of Things (IoT): The way we make payments could be completely changed by this network of actual objects that are linked to the internet. For instance, connected vehicles or smart appliances might automatically pay parking fees or tolls without the driver having to get involved.



Source: <https://www.rapyd.net/>

Artificial Intelligence (AI): New payment methods that are more effective, secure, and individualised are being created using AI. AI-driven chatbots, for instance, can respond to client inquiries concerning payments, while AI-driven fraud detection systems can spot and stop illegal transactions.



Source: <https://www.grandviewresearch.com/>

These are only a handful of the numerous trends influencing how payment systems may develop in the future.

We may anticipate seeing even more cutting-edge and practical ways to pay for goods and services in the years to come as these technologies continue to advance.

There are numerous additional elements that will affect the future of payment systems in addition to these tendencies. These consist of:

1. The expansion of mobile and e-commerce.
2. Real-time payments are becoming more and more popular.
3. Increased security and fraud prevention are required.
4. The advent of new payment paradigms like pay-as-you-go and subscription-based payments.

We may anticipate a further shift towards digital payments as these variables come into play. The integration of payment systems with other technologies, such as social media and mobile devices, will increase. Additionally, they will improve in personalization and adapt to the requirements of specific consumers.

LIMITATIONS OF THE PRESENT STUDY

1. The study only uses already-existing secondary data sources, which could have gaps in their availability, correctness, and completeness.
2. The research results might not correspond to the newest developments or trends in the world of payment systems.
3. The research topic may not be fully covered in secondary data, or there may be a shortage of information on certain important factors

CONCLUSION

The reduction of cash transactions is a natural progression of the digitalization of society. Digital payments are becoming increasingly popular due to their convenience, security, and efficiency. Innovative solutions like blockchain and biometric authentication are making digital payments even more safe and easy. The future of payments is digital, and this trend is only expected to intensify in the years to come. Digitalization and innovative payment systems have transformed transactions, transforming the way people make purchases and access financial technology. This shift towards a cashless society has opened new opportunities in e-commerce, online banking, and financial technology, eliminating the need for physical currency. Online banking, mobile wallets, and contactless payments offer convenience and enhanced security measures. These systems minimize risks and cater to tech-savvy individuals, promoting financial inclusion by bridging the gap between those with traditional banking services

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AN ECONOMIC PERSPECTIVE ON EMPLOYMENT, GENDER, EDUCATION, HEALTH, AND SOCIAL POLICIES

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ABSTRACT

India's ascent as an arising worldwide monetary force to be reckoned with has situated it as a critical player in the global field. India has assumed the prestigious G20 Presidency as it approaches its 75th year of independence, providing a unique opportunity to influence global economic policies. This examination paper analyzes the monetary viewpoint of India's G20 Administration, zeroing in on basic issues like business, orientation correspondence, schooling, wellbeing, and social arrangements. This paper aims to evaluate India's efforts to promote inclusive and sustainable economic growth on both domestic and global fronts by conducting a comprehensive analysis of data, policy initiatives, and international commitments.

Keywords: G20 Presidency, Employment, Gender, Education, Health, Social Policies

INTRODUCTION

As India moves toward its 75th year of freedom, its job as the administration of the G20 holds huge significance in molding worldwide monetary arrangements and encouraging global participation. The G20, a worldwide gathering containing major high level and rising economies, fills in as an essential stage for tending to squeezing financial difficulties and advancing aggregate activity for worldwide monetary strength and development. India has a one-of-a-kind chance to actively participate in setting the global economic agenda and advocating for policies that align with its developmental priorities thanks to its presidency of the G20. India's development as a central participant in the G20 mirrors its developing monetary ability and key significance on the world stage. As quite possibly the quickest developing significant economy, India has gained significant headway in different circles, like exchange, venture, and innovation. Its situation as the administration of the G20 permits India to impact conversations and choices on basic issues, going from business and orientation balance to schooling, wellbeing, and social arrangements.

As India accepts the responsibility of the G20 administration, it faces the test of controlling aggregate endeavors towards tending to the mind boggling and interconnected financial difficulties that nations face today. By tackling its monetary potential, encouraging worldwide collaboration, and advancing comprehensive strategies, India's G20 administration can leave an enduring effect on worldwide financial administration and support its situation as a capable and powerful player in the global local area.

EMPLOYMENT POLICIES

1. Labor Market Challenges and Reforms

Numerous obstacles hinder employment opportunities and economic expansion in India's labor market. The problem of unemployment, especially among youth, is one of the primary obstacles. High populace development and a developing labor force compound the joblessness rate, prompting social and financial ramifications. The labor market is also dominated by informal and unorganized sectors, which leaves many workers without adequate working conditions and social security. Moreover, work regulations and guidelines can be complicated and lumbering, deflecting formal work creation and blocking the simplicity of carrying on with work.

2. Skill Development Initiatives

Ability improvement is significant for upgrading employability and decreasing the abilities bungle predominant in the Indian work market. India has carried out various ability advancement drives to furnish its labor force with pertinent abilities and capabilities. The Ability India Mission, sent off in 2015, expects to prepare north of 400 million individuals in different areas by 2022. It centers around professional preparation, apprenticeships, and accreditation projects to improve the employability of the adolescent. Public-private organizations and joint effort with enterprises have been necessary to the outcome of expertise improvement drives.

3. Promotion of Decent Work and Inclusive Employment Strategies

Advancing nice work and comprehensive business is fundamental to India's endeavors to guarantee civil rights and financial turn of events. Nice work includes furnishing laborers with fair wages, safe working circumstances, and social insurance. India has taken steps to protect the rights and welfare of workers by raising labor standards and enforcing labor laws. Comprehensive business systems expect to decrease social and financial aberrations by guaranteeing equivalent open doors for underestimated and weak segments of society. Reservation programs and affirmative action policies have been implemented to increase the labor force participation and representation of underrepresented groups. Also, the public authority has zeroed in on advancing work concentrated areas like assembling and administrations to set out more work open doors. Drives, for example, Make in India and Advanced India mean to support business age and encourage financial development across different areas.

GENDER EQUALITY AND WOMEN EMPOWERMENT

1. Women's Participation in the Labor Force

Ladies' support in the workforce is a basic part of orientation equity and ladies strengthening. Cultural norms, discriminatory practices, and a lack of access to education and skill development have all made it difficult for women to enter the workforce and advanced there. Through specific policies and initiatives, efforts to increase women's labor force participation have been made in recent years. The trends in women's labor force participation in India are examined in this section. It also looks at the main obstacles and challenges women face and the role that education, vocational training, and family-friendly policies can play in increasing women's workforce representation.

2. Gender Pay Gap and Equal Opportunities

In many economies, including India, the gender pay gap continues to be an issue. Ladies frequently procure not exactly their male partners for comparative work, reflecting fundamental orientation based segregation. This part investigates the variables adding to the orientation pay hole, like word related isolation, restricted admittance to more lucrative positions, and inconsistent vocation movement and amazing open doors. In addition, it emphasizes how important it is to promote pay equity and equal opportunities in order to close the gender pay gap. In order to address this problem and make the workplace more equitable and inclusive for women, policy measures like pay transparency, anti-discrimination laws, and affirmative action programs are looked at.

3. Policy Interventions for Women's Socio-economic Empowerment

To accomplish orientation fairness and ladies' strengthening, compelling strategy mediations are critical. This part analyzes different strategy estimates embraced by the Indian government and different partners to engage ladies socio-financially. These arrangements might incorporate monetary consideration drives, ability improvement programs, business venture backing, and admittance to medical care and contraceptive administrations. The chapter looks at how these interventions changed women's economic status, ability to move up the social ladder, and overall empowerment. In addition, it discusses the significance of collaborating with actors from the private sector and civil society organizations in order to improve these policies' effectiveness and implementation.

EDUCATION

1. Enhancing Quality and Access to Education

Instruction is the foundation of human turn of events and a critical determinant of a country's financial advancement. India must prioritize efforts to improve the quality and accessibility of education at all levels during its presidency of the G20. In order to guarantee a comprehensive and inclusive learning environment for everyone, this entails making investments in curriculum development, teacher education, and the improvement of school infrastructure.

2. Skill Development and Vocational Training

To use the segment profit, India needs to zero in on outfitting its childhood with significant abilities and mastery to fulfill the needs of a quickly developing position market. Ability improvement and professional preparation projects ought to be reinforced to line up with industry needs and mechanical progressions. Public-private organizations can work with cooperation between instructive establishments and ventures to configuration preparing modules that address explicit expertise holes. By giving active preparation and down to earth information, these projects can upgrade employability and lessen joblessness rates, adding to monetary development and social turn of events.

3. Role of Education in Advancing Economic Growth and Human Capital

Economic expansion and the growth of human capital both benefit greatly from education. As India leads the G20, investing in education can help encourage entrepreneurship, research, and innovation. By supporting a knowledgeable and talented labor force, India can draw in unfamiliar speculations and advance a helpful climate for monetary turn of events. Furthermore, schooling assumes a basic part in further developing medical services results, diminishing destitution, and engaging ladies, consequently improving the general personal satisfaction. India can advocate for initiatives that place education at the top of the G20 agenda and highlight its central role in driving global prosperity because it recognizes education as a transformative instrument for sustainable development.

HEALTH AND SOCIAL POLICIES

1. Healthcare Infrastructure and Universal Access

India's medical care framework assumes a crucial part in deciding the country's capacity to give widespread admittance to quality medical care administrations. India has a unique opportunity to address its healthcare system's shortcomings and contribute to the global discussion of achieving universal health coverage as the G20 presidency. By putting resources into the development and modernization of medical services offices, further developing medical services conveyance frameworks, and improving admittance to fundamental meds, India can take huge steps towards guaranteeing that every one of its residents have impartial admittance to medical care administrations, no matter what their financial status or geographic area.

2. Ensuring Health Security and Resilience

A nation's preparedness to respond to health emergencies and pandemics depends heavily on its health security and resilience. India, as the administration of G20, plays a basic part in propelling conversations on worldwide wellbeing security and flexibility. By sharing its encounters and best practices in overseeing general wellbeing emergencies, for example, the Coronavirus pandemic, India can add to the improvement of powerful and composed systems to forestall, recognize, and answer future wellbeing dangers. Moreover, India's attention on building strong medical care frameworks, advancing innovative work in wellbeing advancements, and fortifying worldwide joint efforts can reinforce the G20's endeavors to improve worldwide wellbeing security.

3. Addressing Socio-economic Disparities in Health

Financial differences fundamentally impact wellbeing results and admittance to medical care administrations. India must address the underlying social determinants of health as the country faces a variety of health issues, such as malnutrition, maternal mortality, and communicable diseases. Through

its G20 administration, India can advocate for arrangements and mediations pointed toward decreasing financial variations in wellbeing. By zeroing in on designated wellbeing programs for weak populaces, guaranteeing impartial appropriation of medical care assets, and tending to variables like destitution, training, and disinfection, India can exhibit its obligation to working on the general wellbeing and prosperity of its residents.

SUSTAINABLE DEVELOPMENT GOALS (SDGS) AND THE G20 AGENDA

1. India's Commitment to Achieving SDGs within the G20 Framework

India's way to deal with accomplishing the SDGs inside the G20 system rotates around three key standards: inclusivity, development, and joint effort. In order to be inclusive, one must ensure that no one is left behind, paying particular attention to groups that are marginalized and vulnerable. India's strategies center around lessening neediness, improving medical care, and elevating training to address the underlying drivers of disparity and advance social consideration.

2. Climate Change Mitigation and Adaptation Strategies

Environmental change is quite possibly the most squeezing challenge confronting the world, and India is no exemption for its effects. India has pledged to take ambitious climate action to reduce greenhouse gas emissions and improve climate resilience as a signatory of the Paris Agreement. India's environmental change alleviation procedures center around advancing sustainable power, expanding energy productivity, and decreasing the carbon force of its economy. Furthermore, India is effectively seeking after environmental change transformation methodologies to upgrade its flexibility to the unfriendly effects of environmental change. The nation has started measures to moderate water assets, advance manageable horticulture rehearses, and fortify debacle readiness and reaction components.

3. Role of G20 in Fostering Sustainable and Inclusive Growth

As the head discussion for worldwide monetary collaboration, the G20 assumes an urgent part in cultivating maintainable and comprehensive development. The G20 unites the world's significant economies, which all in all record for a huge part of worldwide Gross domestic product and fossil fuel byproducts. The G20 has the potential to implement transformative policy changes and mobilize resources to address global issues like climate change and sustainable development through dialogue and cooperation.

IMPACT OF INDIA'S G20 PRESIDENCY ON THE DOMESTIC ECONOMY

1. Policy Coherence and Alignment with National Goals

During its G20 administration, India has underscored the requirement for strategy lucidness both at the worldwide and homegrown levels. By adjusting its public objectives to the more extensive G20 plan, India has had the option to actually address basic financial difficulties. For example, India's emphasis on expertise improvement and professional preparation as a component of its business strategies lines up with the G20's emphasis on human resources advancement and comprehensive development. The G20's commitment to gender mainstreaming and closing the gender wage gap is in line with India's push for gender equality and women's empowerment. This arrangement of strategies has brought about a more firm way to deal with financial improvement inside India, cultivating a helpful climate for practical development and social inclusivity.

2. Strengthening India's Position in the Global Economy

As the presidency of the G20, India has had a unique opportunity to project its economic prowess and strengthen its position in the global economy. Active participation in G20 discussions has allowed India to showcase its economic potential, investment opportunities, and policy initiatives to an international audience. This increased visibility has attracted foreign investments and collaborations, enhancing India's integration into the global economic landscape. Additionally, India's presidency has also provided a platform to shape global economic policies and advocate for the interests of emerging economies, contributing to a more equitable and balanced international economic order.

3. Lessons Learned and Future Policy Implications

India's domestic economic policymaking has benefited greatly from the G20 presidency experience. In order to advance national interests and priorities, it has emphasized the significance of proactive participation in international forums. In addition, the presidency has emphasized the significance of policy coherence and coordination for achieving growth that is both sustainable and inclusive. Examples gained from this experience will probably shape India's future financial approaches, accentuating the requirement for proceeding with commitment with worldwide accomplices and the significance of adjusting public objectives to global plans.

CONCLUSION

1. Recapitulation of Key Findings

All through this book section, we have inspected India's administration of the G20 according to a monetary viewpoint, zeroing in on basic aspects like work, orientation, training, wellbeing, and social approaches. Our investigation uncovered a few key discoveries that feature India's obligation to encourage comprehensive development, orientation uniformity, and feasible improvement on the worldwide stage.

2. India's Role in Advancing Global Economic Priorities

As the administration of G20, India has arisen as a vital player in forming the worldwide financial plan. The country's strategy drives and commitment inside the G20 structure show its devotion to tending to squeezing financial difficulties and advancing shared success. The G20 member states' discussions on sustainable job creation and economic resilience have benefited from India's focus on employment policies, skill development, and inclusive growth strategies. Besides, India's emphasis on orientation correspondence and ladies' strengthening has highlighted the requirement for orientation responsive strategies and projects at both the public and worldwide levels. India has established itself as an advocate for advancing gender equality in the economic spheres of the world by championing the causes of women's labor force participation, equal opportunities, and closing the gender pay gap.

3. Prospects for Sustainable Development and Inclusive Growth

India's administration of the G20 offers huge possibilities for progressing reasonable turn of events and comprehensive development on a worldwide scale. By effectively captivating with other part states, global associations, and common society, India has made a stage for joint effort and aggregate activity on critical monetary difficulties. The country's obligation to the Unified Countries' Feasible Advancement Objectives (SDGs) inside the G20 system supports its job in advancing practical turn of events and tending to worldwide difficulties, for example, environmental change, neediness, annihilation, and imbalance. Additionally, India's presidency of the G20 presents opportunities for bolstering its economic position, attracting investments, and establishing partnerships with other nations. Through exchange, collaboration, and vital collusions, India can use its administration to reinforce its financial standing and add to the progression of the creating scene.

In conclusion, India's G20 presidency has marked a significant turning point on its path to global economic dominance. Through its emphasis on work, orientation, schooling, wellbeing, and social arrangements, India has highlighted its obligation to economical and comprehensive development. India has made a significant contribution to shaping the G20 agenda and advancing global economic priorities by actively participating in the global economic discourse and advocating for important issues. As India keeps on directing the G20 towards a reasonable turn of events and comprehensive development, it holds the possibility to make an enduring effect and drive positive change in the worldwide economy.

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CURRENT GLOBAL SCENARIO FOR SOLAR POWER GENERATION

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ABSTRACT

Recent trends toward the adoption of sustainable technologies create an extra burden on the existing power system. This effect is overcome by installing small power generation units in the distribution section which is known as distributed generation. Solar energy is the best type of distributed generation in terms of environmental aspects. In terms of meeting the different energy needs of the community, there has been a growing curiosity recently in the adoption of solar energy-based technology. This study discusses the advantages, drawbacks, uses, and restrictions of solar generation technologies. In this paper, discussion of solar power generation has been discussed, along with global generation capacity, recent trends, and distributed generation promotion policies.

Keywords: Distributed Generation, Solar power, Photovoltaic, Maximum power point traction techniques, Distribution System.

INTRODUCTION

The development of clean energy, enhancing power supply dependability, and expanding power system capacity all require distributed generation (DG) systems based on various renewable energy resources. Here examination of DGs, their types, and their current state in this article. The sun, geothermal power, the rotation and gravitational force of the earth, the sun, the lunar, nuclear processes brought on by humans, and chemical changes from natural minerals are the five final basic power sources on earth. The sun, geothermal power from the earth, and celestial power of movement are these three sources' three renewable counterparts. The primary sustainable supply among these is incidence solar energy. The incidence of solar exposure is tremendous, even if hydropower, biomass, and wind power are disregarded as indirect sources of solar energy. Because of this, the application of solar energy-based innovations has recently garnered more attention in an effort to meet the different power needs of the community. Users which generate electricity for their purposes can transfer extra electrical power back towards the power system or transfer extra heat via a decentralized heating network under the distributed energy resources (DER) idea [1]. Combined Heat and Power (CHP) and Renewable Energy Sources (RES) are two types of distributed generation systems (RES).

CHP is the utilization of a generator to create both heat and electricity at the same time. Cooling towers, exhaust gases, and other methods are used by traditional power stations to release heat generated as a by-product of electricity production into the surroundings.

Energy from renewable sources (RES) is produced by biological processes including anaerobic fermentation and heat exchanger, but also readily available energy sources like sunlight, wind, and moving water (hydropower). Energy from renewable sources (RES) is produced by biological processes including anaerobic fermentation and heat exchanger, but also readily available energy sources like sunlight, wind, and moving water (hydropower). Energy from renewable sources (RES) is produced by biological processes including anaerobic fermentation and heat exchanger, but also readily available energy sources like sunlight, wind, and moving water (hydropower).

According to the most widely recognized definition, renewable energy emerges from alternative energies that are renewed at a scale similar to or greater than the rate at which they are utilized.

In this article, distributed generation is defined first, followed by a study of solar power generation's performances and a comparison of technologies, as well as current market conditions and market forecasts.

DISTRIBUTED GENERATION

Distributed generation, also known as decentralized generation, is a name used to explain the production of electricity for on-site use as opposed to delivering it via the energy network from a large centralized unit (such as a coal-fired power plant). At the distribution voltage level, the power facility is connected to the system or installed on a meter on the consumer side that is sufficiently smaller than that of the central power plant. Solar, wind, hydro, and biomass are major contributors to distributed energy sources. Due to the particular diverse availability of solar and wind energy, DG has a discontinuous characteristic, which has been overcome by utilizing storage innovations like battery packs, drivetrains, fuel cells, and ultracapacitors.

Merits: Realistic local positioning helps to avoid transmission and distribution losses, Convenient local location allows the use of available energy sources, such as fossil fuels, waste, or sustainable supplies that can be easy as a replacement for fossil resources along with the use of available single-phase or three-phase power, Size of unit is from a few to ten MW, Due to its small size, high flexibility and can meet local needs, Solve the problem of long-distance transmission, and distribution efficiency can be improved up to 80%.

Demerits: Conventional distribution systems need to be adequately protected to allow the exchange of electricity, Signaling to send resources becomes extremely complicated, and difficult to establish connection contracts and revenue.

Application: For supporting minor loads, distributed generation may be more cost-effective than even short line additions, it may be more cost-effective than laying a power cable in a remote area, providing the main energy, with a reserve and supplementary power provided by the grid, facilities can be designed to sell more electricity than the facility requires, for reserve energy throughout power system downtime, for buildings that require continuous operation — such as hospitals, military bases, and prisons — and for companies that have significant expenses for enforced blackouts, such as data centers, banks, and the telecom and industrial sectors, excess heat could be used for warming, chilling, dehumidification, or steam in cogeneration. Big manufacturing institutions with large steam and power requirements, such as the paper and chemical industries, as well as universities and hospitals, are among the traditional uses., provide better power quality for sensitive electrical as well as other devices, at periods when electricity prices are so high or when on-site demand is high. People who pay time-varying rates or engage in other peak-shaving schemes can save money by using distributed generation at high-cost times. At network peaks, the energy provider could be capable of minimizing the lot of high power it buys, using a renewable energy source or a cleaner power ability to minimize air pollutants at a location, postponing or stopping investing in transmission and distribution systems, and to give the utility with power or capability.

ENVIRONMENTAL IMPACT OF DISTRIBUTED GENERATION

The use of DGs could be environmentally benign by reducing the amount of electricity that centralized power plants must generate, which can centralize power generating has a lower carbon footprint [2]. Especially:

1. Renewable sources that as solar and wind power can be utilized to create electricity for households and workplaces using existing price-outlay DG systems. It can make use of otherwise lost energy, perhaps through cogeneration plants.
2. In the power grid, distributed generation from local power sources lowers or avoids "line losses" (energy losses) which happen throughout distribution and transmission.
3. DGs can potentially hurt the environment:
4. Several distributed generation facilities could be facing land use difficulties since they are placed near the end-user.
5. Water could be required for steam production or refrigeration in certain distributed power systems, such as burning waste, biomass gasification, and cogeneration.

Table 1: Comparison between Centralized and Distributed generation systems

S. No.	Distributed Generation	Centralized Generation
1	High electric efficiency.	Low electric efficiency.
2	Low emissions.	High emissions.
3	High level of reliability.	Low level of reliability
4	Low variable cost.	High variable cost.
5	Low maintenance cost.	High maintenance cost.
6	More resilient and low power demand.	Less resilient and high-power demand.
7	More sustainable	Less sustainable

BENEFITS OF DISTRIBUTED GENERATION

1. Due to the DG's tiny size, it has a cheaper capital cost (Even though a DG's investment cost per kVA might be substantially greater than that of a major power station).
2. Since the DG can be built at the demand site side may decrease the necessity of major infrastructural building or modifications.
3. It is possible that if the DG delivers energy for local consumption, it will relieve demand on transmission and distribution lines.
4. Throughout its life span, certain technology emits zero or near-zero pollution levels (without counting the fact that air pollutants across the whole product lifecycle, i.e, pollutants generated during production or after the DG unit has been removed from service).
5. It is a type of renewable energy when certain technology, such as wind or solar, is used.
6. As a reserve or standby power source for clients, it can improve power dependability.
7. Clients have an option in how they fulfill their energy demands.

PROBLEMS ASSOCIATED WITH DISTRIBUTED GENERATION

1. For tiny distributed generation units, there are no common national connectivity standards that cover safety, power quality, or dependability.
2. The existing connecting method is not uniform among regions. Interconnection may necessitate interaction with a variety of entities.
3. Many DG projects are unprofitable due to environmental rules and regulatory processes intended for bigger distributed generation facilities.
4. Property insurance obligations, fees and taxes, and excessive documentation are all contractual impediments.
5. The gross impedance of the distributed networks decreases when DG supplies are introduced in parallel. A significant amount of fault current may be generated as a result of the system.
6. A loss of mains occurs when the distributing network separates from the utility network but is still linked to a portion of the utility grid's load. A problem in the utility system or a malfunction of the circuit breaker connected to utility supplies could be to blame for this.
7. The DG units' synchronization with the fuse reclosers is broken when they are connected to a radial distribution network. When compared to the recloser, the fuse is likely to "see" additional fault current

and melted just before the recloser acts. This issue hurts the network's reliability and quality. These are some problems associated with DGs [3]

SOLUTION OF DISTRIBUTED GENERATION

1. The impacts of DG sources on the power network can be mitigated via fault current limiters. The high reactance is critical for reducing the fault currents generated by DG sources.
2. Fault current in an islanded mode in the setting of inverter-interfaced DG sources is restricted to about two times the standard current due to inverter thermal limits. Energy storage technologies such as larger batteries, flywheels, and ultracapacitors could be utilized to generate enough current for the relay to operate.
3. Have used a higher-rated inverter that can deliver quite enough current to trip a protection relay in the case of a problem near the inverter/DGs unit link.
4. Adaptive protection is highly beneficial in dealing with the different modes of operation of a dynamic distribution network. When the network topology changes, the relays change their values instantly from the stored database.
5. When the distribution network is in islanded mode, the frequency of voltage variation is much faster than when it is linked to the grid. As a result, the rate of voltage variation could be used to detect the landing process.
6. To protect key power electronic devices in apparatus, such as converters and inverters, DG sources must be turned off as soon as the problem is discovered. The terminating mechanism is straightforward and quick: the switching frequency is higher than the power frequency, and the switching signals are turned off when the current exceeds around two times the rated current.
7. Several artificially intelligent fault detection approaches have been utilized in active distribution networks. The artificial neural network (ANN) uses one- and two-end readings to determine the distance between faults in the distribution system. For fault detection, the technique employs cascade correlations, and both methods are equally effective in pinpointing fault sites. The fault current is used to sense the independent areas, and a genetic algorithm (GA) is used to locate the fault for the principal branch and fault-independent areas, among other things. These are some solutions that are discussed above [3].

CLASSIFICATION OF DISTRIBUTED GENERATION

Typical dispersed generating sources in the domestic sector involve:

1. Rooftop PV solar arrays.
2. Mini windmills.
3. Fuel cells powered by natural gas.
4. Emergency diesel generators.
5. Distributed generation could contain assets for business and factory sectors are:
6. Combined heat and power systems.
7. Solar PV array.
8. Wind.
9. Hydropower plant.
10. Biomass gasification.
11. Municipal solid waste incineration.

Solar, Wind, and Biogas/Biomass are the main constituents that are discussed in brief.

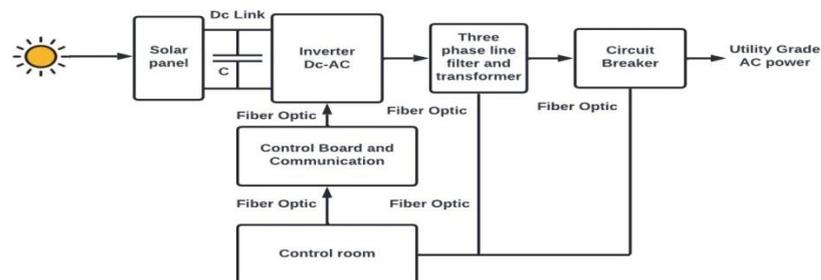
Table 2: Different types of distributed generation

Types	Statement	Power Factor	Uses
DG1	The system is only supplied with real power.	Unity	Solar power plant Biogas plant etc
DG2	The system receives both real and reactive power.	0.80 to 0.999	Diesel Engines.
DG3	Only reactive power is delivered to the system.	Zero	Synchronous motor, bank of capacitor and inductor, Phase modifier circuit, FACTS, etc
DG4	Real power was given as well as reactive power was absorbed.	0.50 to 0.80	The wind power plant, Induction motor, etc.

SOLAR POWER STATIONS

Solar power units use abundant, inexpensive, intermittent but inexpensive solar thermal energy. This thermal energy is further converted into electricity using photovoltaic panels. The solar/power generation system collects sunlight and produces the high-temperature heat required for power generation. In the turbine, steam is converted to mechanical energy, which is used to revolve around a generator and produce electricity. One of two techniques is used in solar plants [5]

1. Photovoltaic (PV) systems use solar panels in rooftop or land-based solar power plants that convert sunlight directly into electricity.
2. Concentrated solar power (CSP) power plants, also called “concentrated solar power,” use solar energy to generate steam, which is then converted into electricity using turbines.

Fig. 1: Block Diagram of Solar Power Plant

The diagram [4] is shown in **Figure 1**. Numerous photons strike the p-type area of silicon as sunlight enters solar cells. Once the electron and hole have received the photons' energy, they will split. The electric field at the p-n junctions causes the electrons to move back and forth between the p-type and n-type regions. The diode is additionally reverse-biased to increase the electric field. As a result, each solar cell's circuit current increases. To achieve a particular outcome, we add the current from each solar cell to a solar panel. The main components are:

1. **Solar Panels:** The solar energy facility's lifeblood is there. Solar panels are created using solar cells. On one panel, there are around 35 solar cells. Even though solar cells individually only provide a little quantity of electricity when 35 of them are connected, we have enough power to recharge a 12 V battery.
2. **Solar Cells:** This part, which is made of p- and n-type silicon semiconductors, is what generates energy. It acts as the computer system's brain.

3. Battery: Batteries are being utilized to produce electricity or to retain excess energy generated throughout the day for delivery at nighttime.

4. D.C. to A.C. Converter (Inverter): Direct current generated by solar panels must be changed into alternating current until being supplied to households or the grid.

$$E = A \times r \times H \times PR \quad \dots (1)$$

Where E is energy (kWh), A is the total area of the panel (m^2), r is the solar panel yield (%), H is annual average solar radiation on tilted panels, and PR denotes performance ratio, constant for losses (range between 0.5 and 0.9, the default value is 0.75).

Solar power plants can be divided into four categories.

1. Stand Alone or Off-Grid type Solar Power Plant.
2. Grid-Tie type Solar Power Plant.
3. Grid Tie with Power Backup or Grid-Interactive type Solar Power Plant.
4. Grid Fallback type Solar Power Plant.

In a **standalone system**, the solar module generates electricity that is used to charge the battery, which in turn provides power to the connected load. A freestanding system is a tiny platform that manages on its own, typically with a generating capacity of less than 1 kilowatt.

In a **grid-connected photovoltaic system**, during the daytime, users utilize solar-generated electricity and transmit the excess to the grid; but, at night time, when the solar power plant is not generating energy, they imported power from the grid to meet their needs. The major limitation of this method is that in the event of a system failure, the solar panels must be unplugged from the system.

Grid-tie solar energy production with power backup is also referred to as a dynamic network. It's a hybrid system that uses solar power in devices as well as batteries. As already said, the main disadvantage of grid-connected systems is that should there is a power cut in the grid, the solar panels are separated from the network. To eliminate blackouts during power failures, a single battery of appropriate capacity can be attached to the device as a backup supply.

Grid-fallback solar is the most dependable and efficient technology, and it is primarily used to power small residences. The solar panel here recharges and uses an inverter to supply electricity to the circuit board. The device automatically jumps back to the utility grid whenever the battery is drained to a predetermined point. The benefits, drawbacks, and uses of solar energy are discussed below [4]:

Benefits: Solar energy is non-polluting and does not emit greenhouse gases after installation, is clean renewable energy and is virtually maintenance-free as solar panels have a lifespan of more than 25 years, by employing solar panel makers, solar technicians, and others, you can support the business and generate employment and if the network is internally connected, surplus electricity can be sold back to the power supplier.

Drawback: Product and implementation prices are high at first, require a lot of areas, the cost of equipment that operates on direct DC electricity is higher, shortage of technologies and materials, photovoltaic arrays are not mass-produced in large enough quantities to be economical, the weather has an impact on solar energy facilities, even the most modern solar panels only convert 20 – 25 percent of solar power into electricity., implying a low power exchange rate, these solar panels cannot produce energy at night, which implies they only can create power for 12 hours of the day, if you purchase solar but later plan to sell, you will be made to evacuate your technology aside because solar panels are not transportable, and it also has an expensive storage system.

Application: Solar water heating, frying, and ovens are all possible using solar energy, facilities are heated by the sun, while Agro-based goods are dried by the sun, solar distillation and solar pumping are two methods for extracting water from the sun, and solar thermal energy creation and solar electricity generation.

GENERATION OF SOLAR CELLS

Photovoltaic cells are split into 4 generations based on the period and the types of materials utilized in their manufacture [6]. The first-generation photovoltaics, which arise from single and multi-crystalline silicon, are most popular in the online marketplace. Solar 2nd generation PV panels were produced as a consequence of the increased material usage of silicon sun solar panels. The optimum thickness of the film for this generation was reduced to a few nano-meter ranges to micrometers to save material utilization. Furthermore, many research teams have conducted experiments with light organization mechanisms such as dye-sensitized solar cells (DSSCs), perovskite, organic solar cells, photochemical cells, QDs, nano-structuring, and nanopatterning using dye-sensitized solar cells (DSSCs), perovskite, organic solar cells, photochemical cells, QDs, nano-structuring, and nanopatterning using dye-sensitized solar cells (DSSCs). The fourth generation of solar cells are classed as conjectural generation chemicals.

A. Based on their manufacturing methods, first-generation solar cells are divided into four categories.

1. Monocrystalline: Monocrystalline systems are built of single-crystal silicon manufactured using the Czochralski method. Despite their high manufacturing costs, these solar cells offer the optimum documented performance.
2. These cells are formed by recrystallized silicon that has been saw cut into incredibly thin wafers. Polycrystalline Si solar panels have a lower efficiency range than monocrystalline Si solar panels.
3. Amorphous silicon is a type of silicon that is composed of a thin coating of silicon atoms instead of a crystalline layer with many layers that form a particular crystalline phase. Even when applied as a very fine coating, it tends to accumulate light. Thin-film amorphous silicon solar cells are another name for them.
4. Hybrid panels: Because of their superior antireflection qualities, nanostructured silicon solar cells are significantly more appealing. Multiple internal reflections' unique quality allows for substantial light trapping, resulting in nonzero optical reflection and excellent effectiveness.

B. The 2nd generation of solar cells are thin-film solar cells.

Solar cells of this generation are manufactured by sandwiching two heterojunction sheets among two contact sheets. Years of the study revealed that the maximum cell efficiency was found in chalcopyrite-structured solar cells made of copper indium gallium diselenide (CIGS) and CdTe thin films, with respective values of 22.6 and 22.1 percent. Copper zinc tin sulfide/selenide (CZTSSe) solar cells have a 12.6 percent better efficiency. Cu₂ZnSnS₄ (CZTS) is a typical thin-film solar cell material that is affordable, accessible, and non-toxic. It is also a low-cost absorber layer that is free of rare metals and can replace CIGS in thin-film solar cells. CZTS can be used in place of the pricey indium (In) and gallium (Ga) in the CIGS absorber layer.

C. Organic solar cells, which are primarily of two types, make up the third generation of solar cells.

The isolation of photogenerated charge carriers in these third-generation electronics differs significantly from that in the 1st and 2nd generations since they do not use a standard p-n junction. Rather, they have numerous energy levels, multiple carrier pair production, and the ability to capture carriers before they are thermalized.

1. Because of their maximum throughput, low price, and ease of manufacture, dye-sensitized solar cells are becoming a useful solution to classic silicon solar cells. Because of their durability and benign nature, anode layers made of anatase phase TiO₂ nanoparticles are commonly utilized in DSSC. The ruthenium dye under this type absorbs the incoming sunlight to stimulate electron transfer, encouraging an electron from a lower-level orbital to an excited one. The dye injects an excited electron into the semiconductor (TiO₂), and the chemical diffusion of electrons from the Interlayer into the conductive material of indium tin oxide (ITO) generates an outside circuit. By employing an electrolyte way to help shuttle electrons through the cell, the electrons returned to the cell to finish the circuit and restore the dye to its "normal" condition.
2. Photovoltaic cells made on organic-inorganic halide perovskite have lately been considered potentially economical and high-efficiency nanostructured gadgets. Because of their excellent energy conversion

efficiency, they seem to be particularly appealing as next-generation solar technologies. Miyasaka et al. produced the first perovskite solar cell in 2009. The electrical efficiency was 3.81 percent. Perovskite solar cells now have an authorized optimum electrical performance of over 21%, which is superior to organic thin-film solar cells. The highest total efficiency for perovskites was mostly achieved from methylammonium lead halide compositions.

D. Tandem solar cells are fourth-generation photovoltaic cells. Fourth-generation solar cells belong to the category of compound highly speculative generations.

These hybrids, which have the qualities of a homogeneous absorber layer, are constructed of polymers combined with nanoparticles. The top and bottom solar cells, as well as an intermediary buffer layer, make up a tandem solar cell technology. The upper GaAs cells receive the sun's light, which is then consumed by Si from the bottom photovoltaics. The produced charge carriers are retrieved via the electrodes, and a photocurrent travels here between two solar cells via the thin buffer layer.

PERFORMANCE PARAMETERS OF SOLAR CELLS

The greatest power P_{max} , short-circuit current density J_{sc} , open-circuit voltage V_{oc} , and fill factor are the most common metrics used to measure solar cells' effectiveness [7].

- When the terminals of a solar cell are shorted together, the current that flows via the outside circuits is the current in a short circuit I_{sc} . The photovoltaic arrays short-circuit current is determined by the photon flux direct on the solar module, which is determined by the spectra of the incoming light.

$$I_{sc} = qG(L_n + L_p) \dots (2)$$

Where, G is the generation rate L_n and L_p respectively the electron and hole diffusion lengths

- Open-circuit voltage is the potential for which hardly any current travels over an external network. It's the maximum voltage that a solar cell can generate. V_{oc} is the forward bias voltage in which the dark current density compensates for the photocurrent density.

$$V_{oc} = \frac{\eta kT}{q} \ln\left(\frac{J_{SC}}{J_0}\right) + \frac{\Delta E_{DA}}{2q} \dots (3)$$

- The **fill factor** is the proportion of a photovoltaic cell's maximum power ($P_{max} = J_{mpp} * V_{mpp}$) to the maximum of V_{oc} , and I_{sc} . It provides information about the PV array's quality.

$$FF = \frac{(I_{mpp} \times V_{mpp})}{(I_{sc} \times V_{oc})} \dots (4)$$

- **Solar conversion efficacy** refers to the percentage of solar energy that can be converted into electricity by a solar cell using PV cells.

THE FOLLOWING ARE SOME MORE PARAMETERS TO CONSIDER:

- The overall amount of sunlight consumed across a hypothetical plane perpendicular to the sun's rays at the typical sun position on Earth is known as the solar constant. The solar constant is 1.366 kW/m², approximately.
- The azimuthal angle, or direction of the compass, is where the sun shines. When the sun's center is focused onto a horizontal surface, an angle is created. It establishes the heavenly body's orientation.

$$\cos \varphi_S = \frac{\sin \delta \cos \varphi - \cos \theta_S \sin \delta \sin \varphi}{\sin \theta_S} \quad \dots (5)$$

$$\cos \varphi_S = \frac{\sin \delta - \cos \theta_S \sin \varphi}{\sin \theta_S \cos \varphi} \quad \dots (6)$$

where, Compass $\varphi_S = 90 - \theta_S$

Zenith angle = θ_S

The hour and local solar time = h

Current sun declination = δ

Latitude angle = φ

- The angle created by the sun's rays and the vertical plane is known as the zenith angle. To determine the direction of the sun as seen from a particular location on the surface of the Earth, it is utilized in conjunction with the solar azimuthal angle.

$$\cos \theta_S = \sin \varphi_S = \sin \varphi \cos \delta + \cos \varphi \sin \delta \cos h \quad \dots (7)$$

- The angle formed by the sun's rays and the typical area of the panels is known as the solar incidence angle. The incidence angle and zenith angle are equal on a horizontal surface.
- The solar altitude angle is the angle created by the sun's rays and the horizontal surface. This word refers to the sun's position in the sky. The temperature is often zero degrees in the morning and ninety degrees at noon.

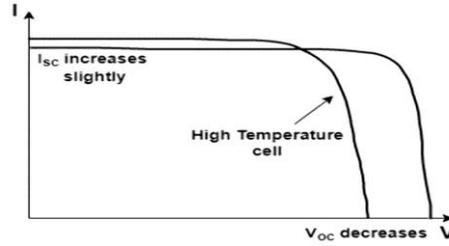
$$\cos \varphi = \sin L \sin \delta + \cos L \cos \delta \quad \dots (8)$$

- The angle between Sun's and Earth's centered projections on the equatorial region is known as **solar declination**. The earth's rotation around an axis causes the solar declination to fluctuate. On December 21, it reaches a high of 23.45° and a low of -23.45° .
- The angle by which the earth must rotate to place the meridians of specific points underneath the sun is known as the **hour angle** of a location on the Earth's surface. It is negative in the morning and then becomes positive later.

IMPACT OF OPERATING TEMPERATURE ON PERFORMANCE PARAMETERS OF SOLAR CELLS

Temperature is a factor in PV cells, as it is in other semiconductor techniques. The energy bandgap of semiconductors shrinks as the temperature rises, influencing the bulk of their material characteristics. A rise in the temperature of a semiconductor's bandgaps could be read as a rise in the energy of the substance's electrons. The open-circuit voltage of a solar array is the one that is most affected by temperature fluctuations. The following figure depicts the impact of increased temperatures.

Fig. 2: I-V curve of the solar cell.



Because I_O is temperature dependent, the open-circuit voltage drops with temperatures. Through one end of a p-n junction, the formula is;

$$I_O = qA \frac{D\eta_i^2}{LN_D}$$

Several of the factors in the preceding formula are temperature dependent, but the intrinsic carrier density, η_i , has the most enormous influence. Simply substituting the equation into the calculation for I_O , presuming that the temperature sensitivities of the other variables are negligible. A constant was substituted to accommodate for possible temperature vulnerabilities of other material characteristics. By putting the following formula into the V_{oc} formulation, the effect of I_O on open-circuit voltage may be measured:

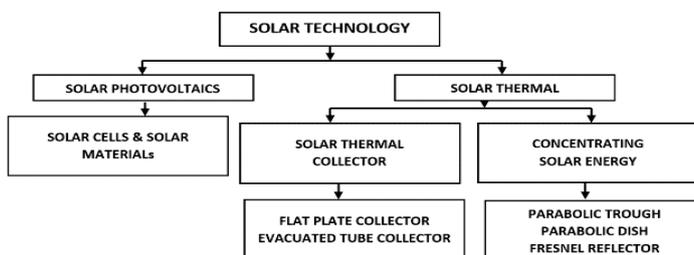
$$I_O = qA \frac{D}{LN_D} BT^3 \exp\left(-\frac{E_{GO}}{kT}\right) = B^1T^\gamma \exp\left(-\frac{E_{GO}}{kT}\right)$$

The expression above shows that a solar cell's temperature sensitivities are proportional to its open-circuit voltage, with higher-voltage solar cells being less impacted by temperatures. Short circuit current, I_{sc} , mildly rises with increasing temperature as bandgap energy, E_G , declines, and additional photons provide enough power to create electron-hole pairs; short circuit current, I_{sc} , faintly rises with temperature as bandgap, E_G , declines and additional photons have enough resources for designing electron-hole pairs; short circuit current, I_{sc} , slightly rises with temperature as bandgap energy, E_G , declines, and additional photons have sufficient energy for developing electron-hole pairs; This consequence, however, is minor.

CATEGORIZATION OF SOLAR TECHNOLOGY

Mainly, there are two main ways that solar energy is used: first, it is converted into electricity through a process called photovoltaics, and second, it is converted into heat through a process called the solar collector and concentrator, as shown in **Figure 3 referred to [8]**.

Fig 3: Classification of solar technology



In **Table 3**, a comparative analysis has been done for different types of concentrating solar power technology.

Table 3: Comaprtive analysis of concentrating solar power technology

Technology	Parabolic	Solar	Linear	Dish
Parameters	Trough	Towel	Fresner	Stirling Engine
Performance (MW)	9.5 - 245	9.9 – 99.99	4.9 – 249	0.01 – 0.99
Effectiveness(%)	9 - 15	9.5 - 15.5	8.1 – 11.9	15 – 30
Performance in thermodynamics	Low	High	Low	High
Relative Price	Cheap	High	Very Cheap	Expensive
Funding Price (\$/KW)	3,000 - 6000	3,900 – 5,900	2,400 – 4,400	6,000 – 10,000
Possession of Land	Large	Moderate	Moderate	Small
Land Use factor (%)	21 - 41	19 - 26	59 - 79	19 - 24
Concentration Ratio	45 - 85	599 - 999	34 - 169	< 2999
Expectations for progress	Limited	Very significant	Significant	High Potential
Merits	Long-lasting reliability	High performance	Simple design	Extremely versatile
Demerits	Advanced architecture	High maintenance expenses	The subject is still under research and innovation.	Extreme complication
State of advancement	Commercial feasible	Semi-commercial	Commercial	Testing phase
The temperature of the operational (celsius)	15 - 390	290 - 560	45 - 290	101 - 990

RECENT TRENDS IN THE FIELD OF RENEWABLE ENERGY (DGs)

Table 4: Analysis of Renewable energy planning

Ref. No.	Author	Publication Year	Types of DGs	Objectives	Method Utility	Limitation	Future Scope	ROC
11	Sanjib Ganguly et al.	2015	DGs	Voltage profile improves.	GA And fuzzy-based approach.	Less accurate and expensive.	Grey wolf method.	23
12	Johanna Barr et al.	2015	DGs	Loss reduction.	Adaptive zone-based Volt/VAR MGMT method.	Inability to successfully integrate DGs.	Decouple volt/VAR approach.	10
13	Panagis N. Vovos et al.	2007	DG1 & DG4.	Gains in connectable capacity.	Optimal power flow method.	Time-consuming.	Recent methods.	27
14	Koong Gia Ing et al.	2016	DGs	Power loss reduction.	Imperialist competitive approach.	Financial, sustainable, and dependable concerns.	Improve reliability.	3
15	Adel A. Abo El-Ela et al.	2020	DG1	Voltage profile improves.	Equilibrium algorithm and equilibrium optimizer method.	Less accurate.	Hourly load variation analysis.	3
16	Shreeram V Kulkarni et al.	2021	DGs	Controllability improved.	Droop Controller state-space small signal modeling.	Theoretical approach.	Creation of a model small-scale microgrid.	2
17	Ziad M. Ali et al.	2021	DGs	Maximized HC.	Archimedes Optimization algorithm.	Small feeder analysis.	Enhancement of HC of real/large D feeders.	1
18	Jiandong Duan et al.	2021	DG1	Cost reduction.	Lyapunov method.	Less accurate.	Counting the fact of non-convex cost equations.	1
19	Yonghui Ling et al.	2021	DGs	Maximized Performance.	Droop control methods.	Poor transient performance.	A mechanism for allocating the reserved capability of the DGs for load assistance.	2
20	Terapong Boonraksa et al.	2021	DGs	Energy losses are decreased and the D SYS voltage profile is raised.	Whale optimization algorithm.	Poor precision and slow settling.	Better algorithm for whale optimization.	1

In this section [30], analysis of recent development in the field of distributed generation has been taking place through various research articles in tabular form which define the objectives, system performance parameters, methods utility, limitation, future scope, & rate of citation (ROC) [10]. DG allotment technique for a radial distributed system employing adaptable genetics algorithm under load and generation uncertainty [11]. Volt/VAR administration (MGMT) implementation for an active decentralized network [12]. DG Coverage e Affected by Centralized and Distribution Voltage Control [13]. Optimal functioning of a decentralized system taking into account the safety margin and DGs form of execution [14]. Utilizing the equilibrium technique, the distributing state's biomass DG allotment is optimum [15]. A better droop management method for electrical converter-based DG sources linked in parallel in an island grid [16]. An innovative DG management method using the Archimedes Optimization approach and visually oriented system reconfiguration [17].

Distributed gradient algorithm's iteration study for economical dispatch in intelligent networks [18]. Provision for Load from Droop-controlled DGs [19]. The Whale optimization technique was used to optimize the placement and size of the DGs network on the Smart Grid [20].

The aforementioned research allows the formulation of ideas for the research framework of DG scheduling, which consists of four primary components: load models, system performance parameters, optimization techniques, and the IEEE bus system [9]. In general, the performance of the main station system with a particular bus of a certain load model is improved by the application of advanced optimization techniques.

The explanation of solar energy planning is shown in **Table 5**. The importance of directing solar power into devices with high sustainable power penetration [21]. Aspects of decentralized solar production faults [22]. Grid-tied solar energy production with enhanced dynamism and power quality: Optimal Actuator Gains employing the Grey Wolf methodology [23]. Crossover CSP/PV facility schematic for cost-effective Solar power proposal [24]. Improved solar power production prediction using flexible residual compensation ensemble simulations [25]. A method relying on neural networks and steepest descent Laplacian regression (SDLR) for optimum grid-supportive solar PV production management [26]. Enhanced Power Quality 3 Phase Grid Connectivity for Solar PV Power Production [27]. Focusing on solar facility risk-constrained stochastic algorithms [28].

Table 5: Analysis of solar energy planning

Ref. No.	Author	Publication Year	Types of REs	Objectives	Method Utility	Limitation	Future Scope	ROC
21	Ershun Du et al.	2018	Solar.	Cost MIN	Framework for stochastic two-stage scheduling of transmission extension.	Inaccurate.	Forecasting method integration.	37
22	Gefei Kou et al.	2020	Solar.	Fault response analysis.	Modeling of dispersed energy resources.	Cost is missing.	Tech-economic analysis.	14
23	Veramalla Rajagopal et al.	2022	Solar.	Power quality enhancement.	Grey wolf method.	Slow convergence rate.	Improved grey wolf method.	1
24	Fei Lei et al.	2020	Solar.	Investment cost MIN.	A filter-based capacity tuning technique.	Topological factors are missing.	Include the topography, land usage, and accessibility of the transmission.	3
25	Heng Yei Su et al.	2020	Solar.	Forecasting performance analysis.	Adaptive residual compensation algorithm.	Less accurate.	AI-based method.	6
26	Bhim Singh et al.	2021	Solar PV.	Performance improvement.	SDLR based adaptive control technique.	Time consuming.	AI-based neural network.	6
27	Amresh Kumar Singh et al.	2020	Solar.	Power quality improvement.	Traditional Perturb and Observe scheme.	Low tracking speed.	Artificial neural network-based method used.	11
28	Dongmin Yu et al.	2020	Solar.	Profit enhancement.	Risk-constrained stochastic optimization.	Climate dependent.	Maximum power point.	12
29	M. Naseem et al.	2022	Solar MPPT.	Power maximization.	Spider monkey method.	Less accurate.	Whale optimization.	1

SCENARIO OF DISTRIBUTED GENERATION IN THE WORLD

This section is further divided into two sub-sections the first section analyses the generation capacity of the top 10 countries [27] as well as selective country power generation status, while the second section discussed famous policies adopted by the country to enhance renewable energy capacity.

WORLD SCENARIO OF POWER GENERATION (2019-2021)

Here, mainly analysis of solar power, wind power, and biomass energy has been taking place [28].

SOLAR POWER IN WORLD SCENARIO

In **Table 6**, the solar power generation capacity of the top 10 countries has been discussed in MW along with **Figure 4**, which discussed the market share of various countries in the world market [32].

Fig. 4: Countries share in world solar power generation capacity

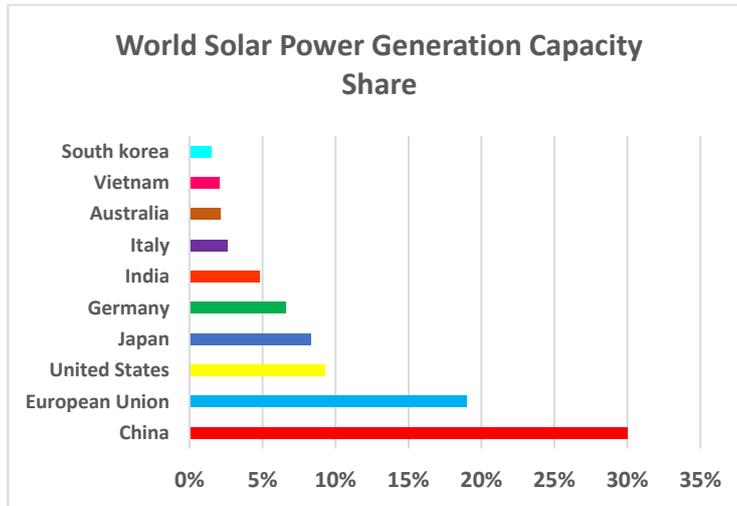


Table 6 : Solar Power in World Scenario

	Country	Power Generation (MW) 2020	Share on Total Consumption
1	China	254,355	6.2%
2	European Union	152,927	6%
3	United States	75,572	3.4%
4	Japan	67,000	8.3%
5	Germany	53,753	9.7%
6	India	39,211	6.5%
7	Italy	21,600	8.3%
8	Australia	17,627	10.7%
9	Vietnam	16,504	-
10	South Korea	14,575	3.8%

DISCUSSION ABOUT SOLAR PLANS OF CHINA, USA, INDIA, & JAPAN IN DETAIL [33].**1. CHINA**

In 2020, China has a solar power generation capacity of about 254 GW and ranks number one in the world. China's Solar Power Producers Association is still expected to add 65 GW of solar power ability in 2021, the solar power manufacturers corporation said, by the finish of the year, overall production of solar projects will have surpassed 300 GW. Hainan Huanghe Solar Hydropower Park in China's remote Qinghai province is the country's largest solar installation and the second in the world with a capacity of 2.2 GW. The share of solar generation capacity in China's renewable electricity capacity is expected to reach 30.8% by the end of 2021. The share of solar generation capacity in the total electricity capacity of China is expected to reach 13% end of 2021.

2. THE UNITED STATES OF AMERICA

In 2020, the United States has approximately 75.5 GW of solar generating capacity and ranks third in the world. The solar sector in the United States has now exceeded 100 GW of capability, as well as other markets, have followed suit. The share of solar generation capacity in the US renewable capacity is expected to reach 39% by the end of 2021. The share of solar generation capacity in total US electricity capacity is projected to reach 39%. Expected to reach 9% by the end of 2021. The 393 MW Ivanpah Solar Power Plant in California is the world's biggest solar thermal energy facility. California has installed solar capacity to date. Largest photovoltaic sky from all states of the United States. As of September 2020, California has over 29 gigawatts of cumulative solar capacity. Texas follows with a capacity of about 6.8 gig watts

3. INDIA

In 2020, India has a solar generating capacity of about 39.2 GW, the sixth-largest in the world. The country's installed solar capacity is 44.3 GW as of 31 August 2021 and the target is around 50 GW by the end of 2021. The share of solar generation capacity in India's total electricity capacity India is expected to reach 10.75 in the run-up to the first quarter of 2021. The share of solar generation capacity in India renewable power capacity is expected to reach 45% by the end of 2021. With a potential of 25 MW, NTPC Simhadri in Andhra Pradesh is India's biggest floating solar PV energy facility. With a potential of 2245 MW, India's largest solar power facility, Bhadla Solar Park in Rajasthan, was the world's biggest solar park in terms of output and second in the area in March. 2020. Rajasthan is India's largest Solar Power Producer with a capacity of 7,738 MW.

4. JAPAN

Japan's current target of 64 GW of solar capacity by 2030 has been exceeded, but for the country's carbon-neutral target by 2050, the Environment Ministry has proposed setting a total target of more than 108 GW by 2030, according to local media. The annual share of renewable energy reaches 18%, and solar power accounts for 7% of total power generation capacity and 38% of renewable capacity. The Kagoshima Nanatsujima Mega Solar Power Plant, with a capability of 70 megawatts, is Japan's biggest solar energy station. The factory is located at No. 2 Nanatsujima in Kagoshima City, the capital of Kagoshima Prefecture. Construction of the large solar power plant started in September 2012 and the inauguration took place in November 2013.

MARKET CAPITAL SIZE AND FUTURE SOLAR POWER TECHNOLOGY PROJECTION

1. In 2021, the business for solar energy was estimated to be worth USD 166 billion. By 2029, it is expected to have grown to USD 370 billion, with a growth rate of 6.89%, from USD 233 billion [34].
2. Precedence study estimates that the solar market is expected to increase at an annualized pace of 7.2% from 2021 to 2030, as seen in the Figure 5 below.
3. North America (N.A), South America (S.A), Asia Pacific, Europe, and Middle East & Africa (MEA) are the five regions that make up the global share of the market, as shown in the accompanying diagram 6.
4. The Indian solar power sector reached 14.56 billion dollars in 2020–2021, and it is anticipated to increase at an average annualized rate of 34.97 percent from 2021–2026.

- Abengoa Se, Acciona S.A., Canadian solar, Inc., E-solar, United renewables co. Ltd., Sun-power corporate, Kaneka company, Tata power solar systems ltd., Wuxi Sun-tech power co., ltd., and Bright sources energy, Inc. are the key companies active in the solar power industry.

Fig. 5: Future forecast of the solar market's capitalization from 2020 to 2020

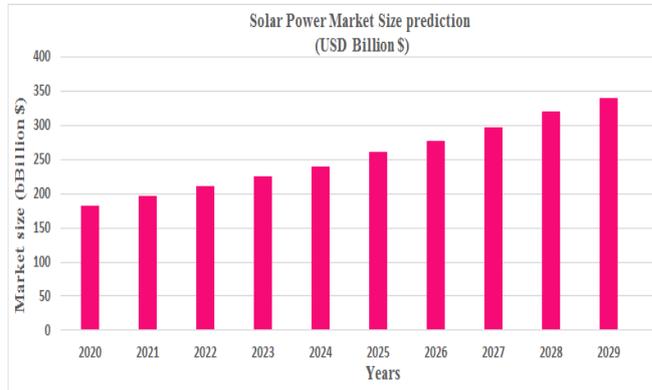
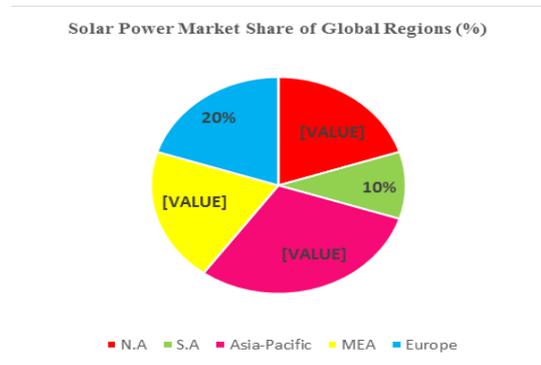


Fig. 6: Global region solar market share



- With 30% of the worldwide solar market, the Asia Pacific area has the biggest share, followed by North America and Europe at roughly 20% each.
- India is the world's fastest expanding solar market, while China has the largest solar market overall.

Global Policies of Clean Energy (DGs) Promotion

Here in Table 8, discussion of various policies of different countries to promote renewable energy related to distributed generation [30].

Table 7: Various famous policies in the world

S. No.	Country	Policies & Targets	Year
1	China	China's environmental commitment, known as its "nationally determined contribution" (NDC), targeted 1,199 GW of wind and solar generating production by 2030 and for non-fossil fuels to account for 24.9% of total power use by that year.	2022
2	USA	The federal government is obligated to use renewable energy for at least 6.99 percent of its overall electricity per financial year.	2022 & 2021

		By 2030, the White House declared a goal for the development of 80 percent sustainable power, and 5 years later, it established a goal for 100 percent carbon-free electricity.	
4	European Union	The Renewable Power Regulation establishes guidelines for the EU's pursuit of its 2030 objective of 31.99% renewable power.	2021
5	Japan	The nation aimed to minimize emissions by 45.9% by 2030, which will need a 39.9% increase in performance from 2013 to 2030. The New Tactical Energy Policy seeks to save 61.99 million KLOE of power.	2022
6	Germany	In 2030, 79.99 percent of the electricity mix must be made up of renewable sources (against 46.9 percent in 2022).	2022
7	India	Reaching 499.9 GW of renewable power capability by 2030, sourcing half of the world's reliance on renewable sources, and halving total emissions by 2030.	2022
8	England	In all National Grid possibilities that fulfill UK climate goals, pollutants are to be reduced to 70 percent below 1990 levels by 2030, and to less than 1 percent fossil fuels and more than 75 percent wind and solar by 2035.	2022 & 2021
9	Brazil	By 2029, there are goals for installing 39 GW of wind power, 15 GW of bioenergy, 10 GW of small hydro, 103.9 GW of big hydroelectric power, and 44.9 % of primary energy consumption from renewable sources.	2022 & 2020.
10	South Korea	In 2036, South Korea plans to generate 34.7 percent of its energy from nuclear sources and 30.55 percent from renewable sources.	2021.

CONCLUSION

A compilation of solar descriptions by various organizations throughout the world has recently been released. It is the product of a review article and aims to provide an outline of the primary benefits, problems, applications, and disadvantages of solar. Based on the financial advantages, solar has grown in popularity. Even on overcast days and at night, with the help of backup batteries solar power can deliver electricity 24 hours a day. This is also utilized with a continual power delivery inter-grid system. India has enormous solar, wind, and biomass potentials that should be considered for power generation. This chapter details solar power generation units, their research trends, and their 2021 capacity detailing, as well as policies of various countries regarding the promotion of renewable power sources, which are discussed [35]. The worldwide perspective generation capacity of several types of solar generation presented in this study. Below, **Table 8** is provided which specifies the major point of summarization of this chapter [36].

Table 8: Comparative analysis of different types of DGs

Types of DGs Parameters	Solar Power	Wind Power	Biomass energy	Hydropower	Ocean energy	Geothermal power
Sources	Sun	Air	Biodegradable waste	Water	Ocean	Earth heat
Global market size (Billion \$)	167.80	77	120	236	0.6	5.3
Global power generation capacity	850 GW	830 GW	143 GW	4300 TWh	520 MW	15.6 GW
World's	China	China	USA	China	Tidal: South	USA

largest producer country					Korea Ocean thermal: China	
India capacity	4.5 GW	1.4 GW	6000 MW	51560 MW	8000 MW	15800 MW
India Rank	4th	4th	-	4th	-	15 th
Cost	High	Very High	Cheaper	Medium	Very high	Medium
Efficiency	15% - 20%	20% - 40%	30% - 35%	90%	50% - 60%	7% - 10%
Future market growth rate till 2030	6.85%	16.9%	4.25%	5.15%	41%	5%

100 % sustainable solar power-producing heat and electricity plants have the potential to employ locally accessible free forms of energy and to decrease the dependency on fossil fuels and/or biomass, making them appealing research topics. To achieve the demanding climatic and power goals established by different countries throughout the world, specific policies, and institutional solutions need to be designed and assessed.

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FINANCIAL MARKETS AND INTERNATIONAL FINANCIAL ARCHITECTURE

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ABSTRACT

The interconnectedness of financial markets across the globe has grown significantly in recent decades, creating a complex and interdependent international financial system. This chapter explores the role of financial markets and the international financial architecture in facilitating global economic growth, capital flows, and stability. We will delve into the structure and functions of financial markets, examine the key players and instruments, and discuss the importance of effective international financial architecture.

Keywords: Financial Market, Economic Growth

INTRODUCTION

FINANCIAL MARKETS: DEFINITION AND TYPES OF FINANCIAL MARKETS

Financial markets serve as the backbone of the global economy, facilitating the allocation of capital and resources. These markets are platforms where buyers and sellers trade various financial assets, including stocks, bonds, commodities, currencies, and derivatives. Financial markets can be classified into primary and secondary markets, based on the nature of the transactions.

Primary Markets

In the primary market, new securities are issued and sold for the first time. This process is known as the initial public offering (IPO) for stocks or bond issuance for debt instruments. Primary markets allow companies and governments to raise capital directly from investors.

Secondary Markets

Secondary markets involve the trading of previously issued securities among investors. Examples include stock exchanges, such as the New York Stock Exchange (NYSE) or the London Stock Exchange (LSE), where stocks are bought and sold. Secondary markets provide liquidity, as investors can buy or sell securities at market-determined prices.

FUNCTIONS OF FINANCIAL MARKETS

Financial markets perform several crucial functions, including price discovery, liquidity provision, risk management, and capital formation. They enable investors to buy and sell securities at transparent prices, facilitate the flow of funds between savers and borrowers, and allow businesses to raise capital for investment and expansion.

- 1. Capital Formation:** Financial markets enable companies, governments, and other entities to raise capital by issuing stocks and bonds. This process allows them to finance their operations, invest in new projects, and expand their businesses.
- 2. Investment Opportunities:** Financial markets provide individuals and institutions with a range of investment options. Investors can buy shares in companies (stocks), lend money to governments and corporations (bonds), trade commodities, or speculate on the future price movements of financial instruments (derivatives).
- 3. Price Discovery:** Financial markets serve as platforms for determining the prices of financial assets. Through the interaction of buyers and sellers, supply and demand forces come into play, resulting in price discovery. These prices reflect market participants' expectations, economic fundamentals, and other relevant factors.

4. **Risk Management:** Financial markets allow participants to manage financial risk. For example, companies can use futures contracts or options to hedge against price fluctuations in commodities or currencies. Investors can diversify their portfolios to reduce risk by holding a mix of different assets.
5. **Liquidity Provision:** Financial markets provide liquidity, which refers to the ease of buying or selling assets without significantly affecting their prices. Liquidity is crucial for market efficiency and stability. Market participants can quickly convert their holdings into cash when needed.

KEY PLAYERS IN FINANCIAL MARKETS

Participants in financial markets include individuals, institutional investors, corporations, governments, and financial intermediaries such as banks, insurance companies, and asset management firms. Each player has a distinct role and contributes to the overall functioning and efficiency of the markets.

1. **Investors:** Investors are individuals, institutions, or entities that provide funds to the financial markets with the expectation of earning a return on their investments. They can be retail investors (individuals) or institutional investors (such as pension funds, mutual funds, insurance companies, and hedge funds). Investors participate in the markets by buying and selling financial assets based on their investment goals and risk preferences.
2. **Traders:** Traders are individuals or firms that actively buy and sell financial assets in the markets with the goal of making profits from short-term price fluctuations. They engage in activities such as day trading, arbitrage, and high-frequency trading. Traders can operate independently or work for financial institutions, such as investment banks or proprietary trading firms.
3. **Financial Institutions:** Financial institutions play a crucial role in financial markets. They include banks, investment banks, brokerage firms, insurance companies, and asset management firms. These institutions provide a range of services, including lending, underwriting, advisory services, asset management, and trading. They act as intermediaries between investors, borrowers, and other market participants.
4. **Stock Exchanges:** Stock exchanges provide platforms for the trading of stocks, which represent ownership in companies. Examples include the New York Stock Exchange (NYSE), NASDAQ, London Stock Exchange (LSE), and Tokyo Stock Exchange (TSE). Stock exchanges facilitate the buying and selling of stocks and ensure transparent and efficient trading by enforcing regulations and listing requirements.
5. **Bond Markets:** Bond markets are where debt securities, such as government bonds, corporate bonds, and municipal bonds, are bought and sold. Participants in bond markets include issuers (governments and corporations), investors, bond traders, and bond brokers. Bond markets provide a means for entities to raise capital by issuing bonds and for investors to earn fixed income.
6. **Central Banks:** Central banks, such as the Federal Reserve (Fed) in the United States, the European Central Bank (ECB), and the Bank of Japan (BOJ), have significant influence in financial markets. They are responsible for formulating and implementing monetary policy, regulating banks, managing currency and interest rates, and maintaining overall financial stability.

FINANCIAL INSTRUMENTS AND PRODUCTS

Financial markets offer a wide range of instruments and products to cater to the diverse needs of investors and borrowers. These include stocks, bonds, mutual funds, exchange-traded funds (ETFs), options, futures, and swaps. Each instrument serves a specific purpose, ranging from equity ownership to risk hedging and speculation.

INTERNATIONAL FINANCIAL ARCHITECTURE

1. Definition and Significance

The international financial architecture refers to the framework of institutions, rules, and practices that govern international financial transactions and relations. It plays a crucial role in fostering stability, managing risks, and promoting cooperation among nations in the global financial system.

2. International Financial Institutions (IFIs)

IFIs such as the International Monetary Fund (IMF), World Bank, and regional development banks serve as key pillars of the international financial architecture. These institutions provide financial assistance, policy advice, and technical support to countries facing economic challenges, promote financial stability, and contribute to global economic development.

3. Financial Regulations and Standards

Regulations and standards are essential components of the international financial architecture. Regulatory bodies and organizations like the Financial Stability Board (FSB) and Basel Committee on Banking Supervision (BCBS) establish rules and guidelines to enhance the resilience of financial systems, prevent crises, and promote sound practices.

4. Crisis Management and Resolution

The international financial architecture also encompasses mechanisms for crisis management and resolution. During times of financial stress or crises, institutions such as the IMF play a crucial role in providing emergency funding, coordinating policy responses, and facilitating debt restructuring to restore stability and confidence in affected economies.

CHALLENGES AND REFORM INITIATIVES

1. Global Financial Integration

The increasing integration of financial markets has brought benefits but also poses challenges. The rapid cross-border capital flows and interconnectedness have the potential to transmit financial shocks globally, making coordination and cooperation among nations crucial for stability.

2. Financial Market Regulation and Supervision

The global nature of financial markets requires effective regulation and supervision to prevent excessive risk-taking, market abuse, and systemic vulnerabilities. Harmonizing regulatory frameworks and enhancing supervisory cooperation are ongoing challenges in strengthening the international financial architecture.

3. Governance and Representation

Ensuring fair governance and representation in international financial institutions remains a critical issue. Efforts are being made to enhance the voice and participation of emerging economies and developing countries in decision-making processes to reflect the evolving global economic landscape.

CONCLUSION

Financial markets and the international financial architecture play pivotal roles in the functioning of the global economy. Robust financial markets promote efficient allocation of capital and risk management, while a well-designed international financial architecture helps maintain stability, resolve crises, and facilitate economic cooperation among nations. Continual efforts are required to address challenges, strengthen regulations, and enhance governance to ensure the resilience and effectiveness of these crucial pillars of the global financial system.

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THE ROLE OF GOVERNMENT POLICIES AND PROGRAMMES IN ENSURING FOOD SECURITY IN INDIA

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ABSTRACT

Food security is a critical issue in India, given its large population and high levels of poverty and inequality. The role of government in ensuring food security is crucial to address the challenges of hunger, malnutrition, and food availability. This abstract explores the role of the Indian government in ensuring food security and highlights the key initiatives and policies implemented to achieve this goal.

The Indian government has taken several steps to enhance food security, focusing on production, procurement, and distribution. The Green Revolution, initiated in the 1960s, aimed at increasing agricultural productivity through technological advancements, improved seeds, and irrigation facilities. Additionally, the government introduced policies to support farmers, such as minimum support prices for crops, subsidization of inputs, and the implementation of agricultural insurance schemes.

To provide affordable food to vulnerable sections of society, the government implemented the Public Distribution System (PDS), which distributes subsidized food grains through a network of fair price shops. The National Food Security Act (NFSA) was also enacted in 2013, ensuring subsidized food grains to two-thirds of the country's population. The Mid-Day Meal Scheme, aimed at providing nutritious meals to school children, is another significant government intervention.

Moreover, government initiatives have been focused on improving storage facilities, transportation networks, and infrastructure for effective distribution of food. The establishment of Food Corporation of India (FCI) plays a crucial role in procurement, storage, and distribution of food grains, ensuring food reaches the intended beneficiaries.

To address nutritional challenges, the Indian government has implemented various programs like the Integrated Child Development Services (ICDS), which focuses on maternal and child healthcare, nutrition counseling, and supplementary nutrition for children and pregnant women.

However, several challenges persist, such as leakages in the PDS system, inadequate implementation of policies, and the lack of effective targeting of beneficiaries. Ensuring the efficient functioning of government programs and addressing these challenges is crucial to achieving food security in India.

In conclusion, the role of the Indian government in ensuring food security is vital. Through various initiatives and policies, the government aims to increase agricultural productivity, provide affordable food to vulnerable sections, and improve nutritional outcomes. However, continuous monitoring, evaluation, and targeted interventions are necessary to address the existing challenges and ensure food security for all.

Keywords: India, Food Security, Policy, Programmes, Role of Government

INTRODUCTION

Adequate food and nutrition are essential for the growth, development, and well-being of any society. In a country like India, where hunger and malnutrition continue to be significant challenges, the role of government policies and programs in ensuring food security cannot be ignored. The Indian government has implemented several initiatives to address the problem of food insecurity, which include policies to enhance food production, improve storage and distribution, and provide subsidized food to the vulnerable sections of the population.

This paper aims to examine the role of government policies and programs in ensuring food security in India. It will provide an overview of the current food security situation in India, highlighting the challenges and the gaps

in the existing policies and programs. It will analyze the various government interventions to tackle the problem of food security and evaluate their impact on the population.

The paper will discuss the Green Revolution, the Public Distribution System (PDS), the National Food Security Act (NFSA), and other government initiatives aimed at improving agricultural productivity, enhancing food distribution, and providing subsidized food to the marginalized sections of society. It will also examine the various schemes implemented to address issues of malnutrition, such as the Integrated Child Development Services (ICDS) and the Mid-Day Meal Scheme.

Furthermore, the paper will discuss the challenges faced by the government in ensuring food security and the measures taken to overcome them. This includes the need for effective implementation of policies, infrastructure development, women's empowerment, and measures to reduce food wastage.

In conclusion, the role of government policies and programs in ensuring food security in India cannot be overstated. The government's interventions have had a significant impact on reducing hunger and malnutrition in the country. However, given the complexities of the problem, there is a need for continuous monitoring, evaluation, and improvement to ensure that food security is achieved for all in India.

POSITIVE ROLE OF GOVERNMENT POLICIES AND PROGRAMMES IN ENSURING FOOD SECURITY IN INDIA

Government policies and programs play a positive role in ensuring food security in India in several ways:

1. National Food Security Act (NFSA): The NFSA, implemented in 2013, aims to provide food grains at affordable prices to two-thirds of the population. This policy ensures the availability and accessibility of food for vulnerable sections of society, reducing hunger and malnutrition.

2. Public Distribution System (PDS): The PDS is a government-run program that distributes subsidized food grains to eligible households through a network of Fair Price Shops. It helps in stabilizing food prices, improving access to essential food items, and reducing food insecurity among the poor.

3. Mid-Day Meal Scheme: The Mid-Day Meal Scheme provides nutritious meals to school children, enhancing their nutritional status and promoting attendance and educational outcomes. This program not only tackles hunger but also addresses long-term food security by investing in the health and development of the younger generation.

4. Integrated Child Development Services (ICDS): ICDS focuses on providing nutritious food, healthcare, and early childhood development services to children under the age of six and pregnant/lactating women. This program not only improves their nutritional status but also contributes to their long-term health and development.

5. Agricultural Policies and Subsidies: The government implements various agricultural policies and subsidies to support farmers, increase agricultural productivity, and ensure a stable supply of food. These policies aim to enhance farm income, encourage sustainable farming practices, and reduce dependence on imports for food availability.

6. Investment in Rural Infrastructure: The government invests in rural infrastructure, such as irrigation facilities, roads, and storage facilities, to improve agricultural productivity and reduce post-harvest losses. These infrastructure investments positively impact food security by enhancing agricultural production, improving market access, and reducing wastage.

7. Women-Centric Policies: The government recognizes the critical role of women in food security and implements policies that empower and support women farmers. This includes providing access to credit, training, and resources, thereby enhancing their productivity and contribution to agricultural production.

Overall, the positive role of government policies and programs in ensuring food security in India is reflected in increased access to food, improved nutritional outcomes, reduced hunger, and enhanced agricultural productivity. However, continuous evaluation, monitoring, and improvement are necessary to address challenges such as implementation gaps, leakages, and inclusiveness to achieve sustainable food security for all.

LIMITATIONS OF GOVERNMENT POLICIES AND PROGRAMMES IN ENSURING FOOD SECURITY IN INDIA

While government policies and programs play a crucial role in ensuring food security in India, there are several limitations and challenges that need to be addressed. Here are some of the key limitations:

- 1. Implementation Challenges:** One of the major limitations is the ineffective implementation of policies and programs. Implementation bottlenecks, corruption, and bureaucratic inefficiencies often hinder the successful execution of food security initiatives, leading to a gap between policy intentions and on-ground realities.
- 2. Targeting and Inclusion Errors:** Identifying and targeting the most vulnerable populations can be challenging. Existing exclusion errors, where deserving individuals are excluded from receiving benefits, and inclusion errors, where ineligible individuals receive benefits, undermine the effectiveness and efficiency of food security programs.
- 3. Inadequate Coverage:** Despite efforts, the coverage and reach of food security programs are often insufficient. Many eligible beneficiaries may still lack access to subsidized food grains, particularly in remote and marginalized areas.
- 4. Quality and Diversity of Food:** While food security programs focus on providing calories, ensuring the availability of diverse and nutritionally balanced diets remains a challenge. There is limited emphasis on the quality and diversity of food items distributed through programs like the PDS.
- 5. Climate Change and Agricultural Vulnerability:** Climate change poses significant challenges to food security in India, with increased risks of extreme weather events, crop failures, and reduced agricultural productivity. Existing policies and programs need to be more adaptive and resilient to address these challenges effectively.
- 6. Inadequate Investment in Agriculture:** Insufficient investment in agricultural research, technology adoption, irrigation infrastructure, and rural development hampers the potential for sustained agricultural growth and food security outcomes.
- 7. Lack of Awareness and Capacity Building:** Many individuals, particularly in rural areas, may not be aware of their entitlements under food security programs. There is a need for better awareness campaigns and capacity-building initiatives to ensure that eligible beneficiaries can access these benefits effectively.

To overcome these limitations, there is a need for continuous evaluation, monitoring, and improvement of government policies and programs. Strengthening implementation mechanisms, enhancing targeting mechanisms, increasing investment in agriculture, and improving governance and transparency are crucial steps to address the limitations and ensure better food security outcomes in India.

LITERATURE REVIEW

Several studies have analyzed the role of government policies and programs in ensuring food security in India. This literature review summarizes key findings and insights from selected research articles and reports on the subject:

1. "Government Policies and Food Security in India: Implications for the Sustainable Development Goals" (2018) by Das, S. et al.

This study examines the impact of government policies, such as the National Food Security Act (NFSA) and the Public Distribution System (PDS), on food security in India. The authors find that these policies have improved access to food for marginalized sections of society, but challenges related to implementation, leakages, and targeting persist.

2. "Role of Government Interventions in Ensuring Food and Nutritional Security in India" (2020) by Kumar, V. et al.

The study highlights the significance of government interventions, such as the Mid-Day Meal Scheme and the Integrated Child Development Services (ICDS), in improving nutritional outcomes for vulnerable groups. It

emphasizes the need for better coordination between different programs and better monitoring mechanisms for effective implementation.

3. "Impact of Government Policies on Food Security and Poverty in India: A State-Level Analysis" (2017) by Mishra, P. K. et al.

This research assesses the impact of government policies on food security and poverty at the state level in India. The study finds that states with better implementation of social protection programs, such as the PDS and NFSA, experience higher levels of food security and lower poverty rates.

4. "Role of Public Policy in Achieving Food Security in India" (2020) by Prasad,

A. Examining the role of public policy in achieving food security, this study emphasizes the importance of robust agricultural policies and investments in rural infrastructure. It suggests that policies should focus not only on enhancing food production but also on improving market accessibility and promoting sustainable agricultural practices.

5. "Government Intervention and Food Security in India: A Review" (2017) by Kumar, P. et al.

This review explores the role of government interventions in addressing food security in India. The study suggests that while government programs have made significant contributions to food availability and access, challenges related to targeting, efficiency, and inclusiveness persist and should be addressed for better effectiveness.

Overall, these studies highlight the importance of government policies and programs in ensuring food security in India. While significant progress has been made, challenges related to implementation, targeting, and environmental sustainability require continuous evaluation and improvement. The findings emphasize the need for coordinated efforts, a multi-sectoral approach, and enhanced monitoring and evaluation mechanisms to achieve sustainable food security in India.

GOVERNMENT SCHEMES REGARDING FOOD SECURITY IN INDIA

The Indian government has implemented several schemes and programs to ensure food security in the country. Some of the prominent schemes are:

1. Public Distribution System (PDS): Under this scheme, the government distributes essential commodities such as rice, wheat, and sugar at subsidized prices to vulnerable sections of the society.

2. Integrated Child Development Services (ICDS): This scheme aims to provide nutrition and health care to children below the age of six years and pregnant and lactating mothers through the provision of nutritious food.

3. Mid-Day Meal Scheme (MDMS): The government provides free cooked meals to school children to promote learning, improve their nutritional status and reduce school dropout rates.

4. National Food Security Act (NFSA): The NFSA aims to provide subsidized food grains to priority households and vulnerable sections of the population. It guarantees 5 kg of food grains per person per month to priority households at highly subsidized rates.

5. Antyodaya Anna Yojana (AAY): The AAY scheme provides 35 kg of food grains to the poorest of poor households identified by the government at a very low price.

6. Annapurna Scheme: This scheme aims at providing free food grains to senior citizens, who are otherwise unable to earn a livelihood.

7. Pradhan Mantri Matru Vandana Yojana (PMMVY): This scheme provides pregnant and lactating mothers with cash incentives to meet their nutritional needs and reduce maternal and infant mortality rates.

8. Swachh Bharat Abhiyan: This program is aimed at promoting clean drinking water and sanitation facilities to ensure better health and nutrition outcomes.

9. Rashtriya Krishi Vikas Yojana (RKVY): This scheme is aimed at enhancing agricultural productivity and increasing crop yields through financial assistance, improved technology and modern agricultural practices.

These programs and schemes play a vital role in ensuring food security in India by enhancing food production and delivery, reducing malnutrition, and enhancing health outcomes.

STEPS TAKEN BY INDIAN GOVERNMENT TO ENSURE FOOD SECURITY

The Indian government has taken various steps to ensure food security in the country. Some of the key measures include:

1. Minimum Support Price (MSP): The government sets minimum prices for various agricultural commodities to ensure remunerative prices for farmers. This helps in incentivizing agricultural production and ensures a steady supply of food grains.

2. Food Subsidies: The government provides subsidies on essential food grains like rice and wheat through the Public Distribution System (PDS). This helps in ensuring that food is available to vulnerable sections of society at affordable prices.

3. Buffer Stocking: The government maintains strategic reserves of food grains to meet any unforeseen shortage or emergency situations. These stocks are utilized during periods of low agricultural production or in times of natural disasters.

4. Green Revolution: In the 1960s and 1970s, the government launched the Green Revolution, which aimed to increase agricultural productivity through the adoption of high-yielding variety seeds, modern agricultural techniques, and access to irrigation facilities. This has played a crucial role in ensuring food self-sufficiency in the country.

5. Integrated Nutrient Management: The government promotes the use of organic and inorganic fertilizers, as well as improved irrigation facilities, to enhance agricultural productivity and ensure sustained food production.

6. Technology Adoption: The government encourages the adoption of modern farming technologies, such as biotechnology, precision farming, and farm mechanization, to improve crop productivity and boost overall food production in the country.

7. National Food Security Act (NFSA): The NFSA was passed in 2013, aiming to provide legal entitlements for subsidized food grains to a significant portion of the Indian population. It aims to ensure food security for approximately two-thirds of the population, including priority households and vulnerable groups.

8. Research and Development: The government invests in agricultural research and development to develop new crop varieties, improve crop resilience to climate change, and enhance agricultural productivity.

These steps collectively help in ensuring food security in India by promoting agricultural production, stabilizing food prices, and providing access to affordable food for the population. However, challenges like agricultural productivity, climate change, and distribution inefficiencies still need to be addressed to achieve comprehensive food security in the country.

SUGGESTIONS REGARDING ROLE OF GOVERNMENT POLICIES AND PROGRAMMES IN ENSURING FOOD SECURITY IN INDIA

To ensure food security in India, government policies and programs play a significant role. Here are some suggestions regarding the role of government policies and programs:

1. Strengthening Agricultural Infrastructure: The government should invest in improving agricultural infrastructure, including irrigation systems, storage facilities, and post-harvest management. This will help reduce wastage, increase shelf life, and ensure the availability of quality food.

2. Enhancing Agricultural Productivity: Policies should focus on promoting sustainable agricultural practices, access to quality seeds, fertilizers, and advanced technologies. Encouraging research and development in agriculture can help increase productivity and overall food production in the country.

3. Promoting Farmer Welfare: Government programs must emphasize the welfare of farmers, who are the backbone of the agriculture sector. Implementing schemes for income support, crop insurance, access to credit, and technical guidance can provide a safety net and strengthen the agricultural sector.

4. Improving Distribution Channels: Effective implementation of the Public Distribution System (PDS) and other targeted welfare programs is crucial. The government should ensure efficient supply chain management, transparent allocation, and timely distribution of food grains and essential commodities.

5. Nutrition Programs and Awareness: Along with ensuring food availability, the government should focus on promoting nutrition programs to combat malnutrition. Initiatives like nutrition education, fortification of food, and breastfeeding support can contribute to improved nutritional outcomes.

6. Climate Change Adaptation: Government policies should integrate climate change adaptation strategies within the agricultural sector. Encouraging sustainable farming practices, water conservation, and promoting climate-resilient crops can help mitigate the impact of climate change on food production.

7. Strengthening Social Safety Nets: Expanding and strengthening existing social safety nets, such as the National Food Security Act (NFSA), can ensure access to affordable and nutritious food for the most vulnerable sections of society.

8. Collaboration and Partnerships: Government should collaborate with international organizations, research institutions, and NGOs to leverage expertise, share knowledge, and implement effective strategies for food security.

9. Monitoring and Evaluation: Establishing robust monitoring and evaluation systems to assess the impact of policies and programs is essential. Regular assessments can identify gaps, evaluate program effectiveness, and guide evidence-based policy-making.

By implementing these suggestions, the government can play a proactive role in ensuring food security in India. It requires a comprehensive approach that addresses the entire food supply chain, from production to distribution, and emphasizes the welfare and nutrition of the population.

FINDINGS

Several studies and research have highlighted the role of government policies and programs in ensuring food security in India. Here are some key findings:

1. National Food Security Act (NFSA): Implementation of the NFSA has had a positive impact on food security in India. Studies have shown that the Act has increased food grain availability, reduced extreme poverty, and improved nutritional outcomes among vulnerable populations.

2. Public Distribution System (PDS): The PDS, a crucial component of the NFSA, has played a significant role in providing subsidized food grains and ensuring their availability to the poor. Research suggests that improvements in the targeting and efficiency of the PDS have resulted in increased access to food among marginalized groups.

3. Agricultural Subsidies: Government subsidies on fertilizers, seeds, and irrigation have contributed to increasing agricultural productivity and improving food security. Studies have shown that access to subsidized inputs has led to higher crop yields and income growth among farmers.

4. Technology Adoption: The government's focus on promoting technology adoption in agriculture has positively impacted food security. Introduction of high-yielding crop varieties, improved irrigation techniques, and mechanization have resulted in increased agricultural production and enhanced food availability.

5. National Rural Employment Guarantee Act (NREGA): NREGA, a flagship rural employment program, has indirect impacts on food security by providing employment opportunities in rural areas, increasing income levels, and reducing poverty. This has improved the purchasing power and food access of rural households.

6. Integrated Child Development Services (ICDS): The ICDS program, which aims to improve the nutritional status of children and pregnant women, has contributed to addressing malnutrition and ensuring food security.

Research suggests that ICDS interventions, including supplementary nutrition, health check-ups, and awareness campaigns, have improved the nutritional outcomes of target beneficiaries.

7. Market Reforms and Initiatives: Government initiatives, including the e-NAM (National Agriculture Market) platform, have aimed to enhance market access for farmers, reduce intermediaries, and increase price realization. These reforms have the potential to improve farmers' income and overall food security.

8. Seed Sector Reforms: Policies and programs aimed at improving the seed sector, such as the National Seed Policy and the National Mission on Seeds and Planting Material, have led to the availability of quality seed varieties and enhanced crop productivity.

9. Climate Change Adaptation: Government policies, such as the National Mission for Sustainable Agriculture, have focused on climate change adaptation and resilience in the agricultural sector. These measures aim to mitigate climate risks and ensure food security in the face of changing climatic patterns.

Overall, these findings highlight the importance of government policies and programs in addressing the various dimensions of food security in India, including availability, access, and nutrition. However, there is still a need for continuous monitoring, evaluation, and refinement of these policies to effectively tackle the challenges related to food security in the country.

CONCLUSION

In conclusion, government policies and programs play a vital role in ensuring food security in India. The implementation of the National Food Security Act has increased food grain availability and reduced extreme poverty. The Public Distribution System has improved access to subsidized food grains, especially for marginalized groups. Agricultural subsidies and technology adoption have enhanced agricultural productivity and food availability. Programs like NREGA have provided employment opportunities and increased income levels, improving the purchasing power and food access of rural households. Initiatives such as ICDS have targeted malnutrition and improved nutritional outcomes among children and pregnant women. Market reforms, seed sector reforms, and climate change adaptation measures also contribute to overall food security. However, continuous monitoring and evaluation of these policies are essential to address the challenges and ensure effective food security in the country.

RECOMMENDATIONS

Based on the findings regarding the role of government policies and programs in ensuring food security in India, here are some recommendations:

1. Strengthen Targeting Mechanisms: Improve the targeting mechanisms of welfare programs like the Public Distribution System to ensure that the intended beneficiaries, particularly the economically disadvantaged and vulnerable groups, receive the benefits.

2. Enhance Efficiency of Food Distribution: Implement technological solutions for efficient management and monitoring of food distribution systems, such as digitizing ration cards, utilizing mobile technology for real-time tracking of supplies, and ensuring transparent grievance redressal mechanisms.

3. Invest in Agricultural Research and Development: Increase investment in agricultural research and development to boost productivity by developing climate-resilient and high-yielding crop varieties, improving irrigation techniques, and promoting sustainable farming practices.

4. Strengthen Market Linkages: Focus on the development of robust agricultural market infrastructure, including storage facilities, transportation networks, and the establishment of efficient agricultural markets (e-NAM, for example). This will ensure fair prices, reduce wastage, and provide better market access for farmers.

5. Promote Climate Smart Agriculture: Increase support for climate change adaptation measures in agriculture, such as promoting the use of climate-resilient farming techniques, encouraging crop diversification, and providing affordable crop insurance to help farmers cope with climate uncertainty and reduce their vulnerability to climate change impacts.

6. Enhance Nutrition Programs: Strengthen and expand programs like Integrated Child Development Services (ICDS) and the Mid-Day Meal Scheme to improve the nutritional status of children, pregnant women, and lactating mothers. Focus on providing nutritious and balanced meals with a diversified food basket.

7. Encourage Farmer Cooperatives: Promote the formation and strengthening of farmer cooperatives to facilitate better access to credit, inputs, technology, and markets. This can help small-scale farmers overcome individual challenges and achieve economies of scale.

8. Increase Farmers' Income: Introduce measures to increase farmers' income through fair pricing mechanisms, minimum support prices, and value addition initiatives. Financial inclusion through easy access to credit and crop insurance schemes can also play a crucial role in improving farmers' resilience to income shocks.

9. Strengthen Monitoring and Evaluation: Establish a robust monitoring and evaluation system to assess the impact and effectiveness of policies and programs related to food security. Regular assessments will help identify gaps, suggest improvements, and ensure accountability in achieving the desired outcomes.

By implementing these recommendations, the government can further enhance food security in India and ensure that all citizens have access to safe, nutritious, and affordable food.

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AGRICULTURE AND FOOD SECURITY IN INDIA

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ABSTRACT

Various measures have been taken and are being taken throughout the world to annihilate hunger, and malnutrition but the problem persists in many countries. Although securing food security is important for people in all countries, it becomes a high priority in developing countries that face more challenges in achieving food security. The challenges include high population growth coupled with severe environmental issues like floods, droughts, and high variability in temperature or rainfall. Further, the rise in food demand and limited productivity of crops, high prices of food along with extreme inequalities of income may harm the accessibility to availability of food for vulnerable sections of society. According to the “Food and Agriculture Organization of the United Nations (FAO) data, approximately 13% of the population of developing countries suffer from undernourishment, and the world’s population is expected to reach 9.2 billion by 2050 which is expected to increase the demand for food by 59%–102%” (Pawlak, 2020). This will put extra pressure on agriculture. India has also taken a myriad of policy and legal initiatives to achieve food security and has been successful in some dimensions related to food security. However, a lot of challenges persist which need to be addressed on an urgent basis.

Keywords: Population Growth, Food Security, Developing Countries.

INTRODUCTION

CONCEPT OF FOOD SECURITY

“Food Security” is a dynamic concept. Despite the existence of a commonly acceptable definition, it is still understood, applied, and utilized differently as per the “context, timeframe, and geography” of the region where it is used (Babu, 2009). The concept came into existence in the mid-70s to prevent the prevalent global food crisis. The earlier focus of “Food Security” was primarily on securing the availability of food supplies at the global level and also, to some extent, on stabilizing global food prices. Therefore, “Food Security” was defined at World Food Summit (1974) as “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices”. Later on, the definition was extended by FAO by adding “securing access to food supplies by vulnerable people” to the definition of 1974. This was done to create a balance between the demand and supply aspects of “Food Security”. The new definition by FAO defined food security as “ensuring that all people at all times have both physical and economic access to the basic food that they need” (Food and Agriculture Organisation)

The definition was again expanded by including the temporal dimension to the concept. The temporal dimension was highlighted in the World Bank’s 1986 report titled “Poverty and Hunger.” Therefore, the definition of food security was further enlarged in terms of “access of all people at all times to enough food for an active, healthy life”. By the mid-90s, the concept underwent another change. The importance was given to not only the availability and accessibility of sufficient food but also to the safety and nutritional aspects of it. Therefore, food security was not just considered as an end in itself rather it got converted into a means to achieve an active and healthy life. In this light, the World Food Summit 1996 came out with “a more multifaceted and multidimensional definition” which said “Food security, at the individual, household, national, regional and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. The definition was further refined in the FAOs “The State of Food Insecurity report, 2001”. Therefore, the current definition of the concept is “Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.” (Food and Agriculture Organisation).

The concept which has evolved consists of four dimensions which are

1. **Food Availability:** Is a physical determinant which means ensuring the availability of adequate food to people.
2. **Food Accessibility:** Is achieved if a household has resources to obtain an optimum diet
3. **Food Utilization:** Is achieved if the desired social and biological environment is provided for food utilization and it also includes proper health care.
4. **Food Stability:** is achieved if individuals or households have sufficient food all the time and shocks like economic, environmental, etc do not hamper the availability. It covers the availability and access dimensions of food security (NABARD, 2022).

In this sense, achieving food security means the production/import of sufficient food for everyone, ensuring food is accessible to all individuals whenever is required by them, year after year, providing people physical and economic access to nutritive food, as per their requirements so that they can live a healthy and productive life. Therefore, food security implies “freedom from hunger and malnutrition” (Acharya, 2009). In recent times a right-based approach to food security has gained momentum. It started with the recognition of this right by the “UN Declaration of Human Rights in 1948”. Later on, the delegates at the World Food Summit, 1996 formally adopted “the Right to Adequate Food” which gave hope for the right-based approach toward “Food Security”. (FAO, 2006).

The International Covenant on Economic, Social and Cultural Rights (ICESCR) adopted the right to adequate food in 1966. It is a legally binding right and “171 States have ratified the ICESCR”. According to FAO, “45 countries have recognized this right in their constitutions, and around 30 countries of the world have given explicit recognition to the right to adequate food in their constitutions” (Food and Agriculture Organisation of the United Nations)

INDIA ON THE RIGHT TO ADEQUATE FOOD

India joined the “International Covenant on Economic, Social and Cultural Rights” (ICESCR) in 1986 which is the most important instrument of human rights to ensure food security. Also, the right to food and food security for people has been recognized in the Indian constitution. According to the National Human Rights Commission of India, the Right to Food is an inherent part of Article 21 which ensures the right to dignified life and personal liberty. Articles 39(a) and 47 of the Directive Principles of State Policy also provide for the right to food. Article 39(a) requires the State to provide adequate means of livelihood to its citizens and Article 47 requires the State to raise the nutrition level and standard of living of its citizens (National Human Rights Commission, India).

Agriculture and food security in India: An assessment of India’s efforts in achieving food security

India’s position in the “Global Hunger Index (HGI) 2022” projects a dismal performance in combating hunger. India ranks 107 out of 121 countries. India’s GHI score of 29.1 places it in the “serious” category. Neighbouring countries like Pakistan, Nepal, Bangladesh, and Sri Lanka have performed better than India. According to the report, “India’s child-wasting rate of 19.3% is the highest in the world” (The Economic Times, 2022).

Agriculture is essential in achieving food security. It is the backbone of the Indian economy. Agriculture is the source of food for all and determines the capacity of a large number of people to have unrestricted access to nutritious food as it is one of the dominant employers. According to the economic survey 2021-22, the agriculture sector is the largest employer of the workforce and contributes around 18.8% of India’s gross value added (GVA) (Economic Survey 2021-22). Therefore, ensuring food security for people largely depends on the strength of its agriculture. Since the decolonization of India in 1947, the policies to develop agricultural have always been directed towards achieving “food security, reducing hunger, malnourishment and poverty”. Initially, the focus was on keeping the food prices under control which was later shifted to the broader goal of achieving macro food security and eventually shifted to achieving household and individual food security (Acharya, 2009).

ASSESSMENT ON ALL FOUR DIMENSIONS OF FOOD SECURITY

1. Food Availability

It means the physical availability of sufficient food stock. Due to the success of the Green Revolution, India has achieved self-sufficiency in food grain production at the national level. So much so that India has also achieved the status of net exporter of agricultural products (Economic Survey 2022-23).

Food grain production in India rose from mere around “50 million tonnes in 1950-51 to 315.7 million tonnes in 2021-22” (PIB). However, despite significant achievements in the production of food grains, India still scores low on the Global Hunger Index (ranked 107 out of 120 countries and ranked behind neighbouring countries like Pakistan, Nepal, and Bangladesh). The main reasons behind this include almost stagnant per capita availability of food grains and stagnancy in the production of proteins and calories from crop-based foods (pulses) whereas there has been an increase in the supply of protein from food from animal sources (NABARD).

2. Food Accessibility

According to Noble laureate Amartya Sen “What really matters with the food is not the overall supply but, individual access” (Jain, 2016). The Government of India has played a proactive role in ensuring free access to food. The Public Distribution System (PDS), ensures affordable food grains and gives a safety net to farmers against low market prices (NABARD). The National Food Security Act, 2013 has introduced a “Rights Based” approach to food. The Act gives “legal entitlement to 75% of the rural population and 50% of the urban population to receive subsidized foodgrains under Targeted Public Distribution System. About two-thirds of the population, therefore, is covered under the Act to receive highly subsidized food grains. As a step towards women empowerment, the eldest woman of the household of age 18 years or above is mandated to be the head of the household for the purpose of issuing of ration cards under the Act” (National Food Security Portal)

To ensure access to food by vulnerable sections, the Government of India has also implemented schemes such as “the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and the “Pradhan Mantri Poshan Shakti Nirman Yojana (PM POSHAN Scheme)”. The Government of India has also relaunched the erstwhile “Mid-Day Meal” scheme with a new name - “Pradhan Mantri Poshan Shakti Nirman (PM POSHAN)’ scheme which provides for “one hot cooked meal in Government and Government – aided Schools from 2021-22 to 2025-26”. The scheme aims at annihilating malnutrition besides improving the school enrolment ratio (NABARD).

Utilization of food: Even though the availability of nutrition has improved and there is a declining trend in child stunting, India’s performance in the proper use of food is not praiseworthy. Due to social and cultural reasons, Indian women and children suffer from malnutrition. India carries “one-third of global burden of childhood stunting and disparities between/within states are quite visible”. Similarly, India has performed poorly in terms of wasting (acute undernutrition). “19% of children in India were wasted in 2019-20 and 9 states and UTs experienced an increase in the proportion of wasted children between 2015-16 to 2019-20”. India has the highest number of underweight (indicates inadequate food availability) “among lower or middle-income countries in the world and nearly doubles that of Sub-Saharan Africa with direct consequences for mobility, mortality, productivity and economic growth” (NABARD). Anaemia (low RBCs due to low levels of Iron, Vitamin B12, and Vitamin A in food consumed) among Indian women and children is quite rampant. It is estimated that one out of two women suffers from severe anaemia.

Stability of Food: Moreover, the stability aspect of food security in India has been hampered by two recent events – COVID-19 and Russia-Ukraine War (NABARD).

CHALLENGES IN THE WAY OF ACHIEVING FOOD SECURITY IN INDIA

The Government has been initiating various policy measures to strengthen the agriculture sector. Despite these measures and initiatives, several challenges still linger.

The fluctuating growth rates in agriculture due to its vulnerability to climate change, land degradation, and shrinking bio-diversity, the declining groundwater levels due to excessive use of chemical fertilizers and pesticides, etc., and the food safety issues, especially among urban poor and migrants pose threat to food security in India. “About half of the cases of child malnutrition are associated with unsafe water, inadequate

sanitation or insufficient hygiene in urban areas”. Also, the consistent reduction in the size of landholdings and their productivity is driving many farmers away from agriculture (United Nations India). Other factors like poverty, poor infrastructure like inadequate road network, dearth of modern storage facilities, limited access to credit and insurance, inefficient supply chain, and poor marketing also hamper food security in India (Financial Express, 2023).

Lack of crop diversification and clinging to wheat and rice has made agriculture non-profitable for farmers. The “mismatch between the demand and supply of water” for agriculture, unpredictable monsoon, and increasing demand for water due to population growth, industrialization, etc. might further reduce the availability of water for the agriculture sector. The problems like poor quality of seeds and planting materials, and globalization policies may pose challenges for domestic farmers (Jain, 2016). The gradual shift towards the cultivation of fruits, vegetables, and oil seeds which are used as raw material in industries, and the diversion of land towards the construction of factories, roads, etc has also reduced the land for the cultivation of food grains (Jaswal, 2014). The patriarchal structure of society creates a discriminatory environment for women and children in which they have less access to and consumption of nutritious food which creates a vicious circle of malnourishment, morbidity, and mortality which ultimately affects a nation’s economy also.

CONCLUSION AND SOLUTIONS

India’s efforts for achieving food security in all four aspects have produced mixed results. In terms of availability and accessibility to food grains is concerned, India’s efforts are praiseworthy. However, the performance on the utility dimension is worrisome. The nutritional aspect and distribution of food are the biggest problems. India’s ranking in the latest Food Security Index (2022) calls for urgent steps to be taken. The following suggestions are noteworthy

1. More investment is to be made in developing modern irrigation systems, strengthening market infrastructure, and efficient transport systems.
2. Shift from expenditure on subsidies and MSPs towards more investments to increase agriculture productivity and its competitiveness which will gradually make availability of staple food more economical.
3. More investment in “education, health, sanitation, and other public services” for better food and nutritional security.
4. An integrated water use policy needs to be formulated which caters to the water needs of agriculture as well as other sectors.
5. Sustainable agricultural practices must be adopted to prevent the loss of soil fertility and other resources like groundwater. Such practices will help in improving the nutritious content of crops.
6. India’s food wastage is at 50 kg per person per year. Awareness campaigns should be undertaken to develop “Zero Tolerance” towards food wastage.
7. Focus should be given to the production of cheaper and more nutritious food alternatives like Millet.
8. More egalitarian and democratic value system must be inculcated among people to stop discrimination against vulnerable sections esp. children and women to ensure equitable availability, access, and utilization of food.
9. More investment in “agriculture innovation systems, including technology transfer and farm extension services, and in strategic rural infrastructure, including water use, in order to boost agricultural productivity and resource sustainability” (OECD, 2014).

CONCLUSION

Ensuring food security for its people is the top priority of all nations, developed or developing. The agriculture sector plays a strategic role in achieving food security. India needs to give a push to production of its “staple crops” and ensure “diversification” of its agriculture production to higher-value crops. India is the second most populated country in the world with one-quarter of the world’s food-insecure population (OECD, 2014).

Therefore, the goal of achieving national food security calls for strengthening the agriculture sector as it has to cater to the food requirement of around 1.408 billion people. A lot is yet to be done. The dream of ensuring food security is still pending.

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ROLE OF INFORMATION TECHNOLOGY IN PERSPECTIVE OF BANKING SECTOR

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ABSTRACT

Banking environment has become highly competitive today. Banking sector used Information technology in the form of refined information and advanced communication technologies for making the banking system more convenient. To be able to survive and grow in the changing market environment, banks are going with the latest technology. IT helps the banking industry to deal with the challenges. Technology has opened up new markets, new products, new services and efficient distribution channels for the banking industry. IT includes processing, storing and transferring information for making the data accessible. In this paper attempt has been made to understand the importance of IT and also its impact on banking sector. Customer relationship management and cyber security services provide customer satisfaction. It facilitates best services and benefits to customers. An introduction of 'cyber cash' the exchange of cash takes place entirely through 'cyber-books'. IT makes easy transactions like Collection of Electricity bills and telephone bills. The upgradeability and flexibility of internet technology gives opportunities for the banks to reach out to its customers. IT has been the keystone of recent financial sector reforms aimed at increasing the speed and reliability of financial operations and of initiatives to strengthen the banking sector. The advancement of information technology and the development of worldwide networks have reduced the cost of funds transfer and other transactions. IT enabled effective communication with clients, mediators and institutions in banking sector. It is IT which enables banks in meeting such high expectations of the customers who are more demanding and more conscious about high technology. The objective of the paper is to understand the importance of IT and also the impact of IT on banking sector.

Keywords: Information Technology (IT), Internet Banking, Banking Sector, Recent Development of Banking Sector, E-Banking, Electronics Devices

INTRODUCTION

This article presents a study which aims to understand the importance of information technology (IT) and also the impact of IT on the banking sector. Banking environment has become highly competitive today. To be able to survive and grow in the changing market environment, banks are going with the latest technology. IT helps the banking industry to deal with the challenges. Technology has opened up new markets, new products, new services and efficient distribution channels for the banking industry. IT has been the keystone of recent financial sector reforms aimed at increasing the speed and reliability of financial operations and of initiatives to strengthen the banking sector. The advancement of information technology and the development of worldwide networks have reduced the cost of funds transfer and other transactions. IT enabled effective communication with clients, mediators and institutions in banking sector.

IT includes processing, storing and transferring information for making the data accessible. IT facilitates banks extremely expectations of the customers about high technology. It provides better market infrastructure, innovative product development, implementation of reliable techniques for reducing the hazards and helps the financial institutions to getting potential profits from the global market.

There are two types of service provides by banks-commercial and retail. Commercial banks provide services to businesses and private entrepreneurs and retail banks provide credit, deposit, and money management services to individuals and families. IT facilitates fast services and flexibility in banking operations to the benefits of clients. The customers can view the accounts, get accounts statements, transfer funds and purchase drafts by just punching on few keys. The smart cards with microprocessor chip have added new dimensions to the scenario.

Customer relationship management and cyber security services provide customer satisfaction. It facilitates best services and benefits to customers. An introduction of 'cyber cash' the exchange of cash takes place entirely through 'cyber-books'. The upgradeability and flexibility of internet technology gives opportunities for the banks to reach out to its customers, now collection of Electricity bills and telephone bills has become easy..

RECENT DEVELOPMENTS IN BANKING SECTOR

The e-banks, which may call as easy bank offers the following services to its customers like Credit card, Debit card, ATM, E-cheque, EFT(Electronic Fund Transfer), DEMAT accounts, Mobile banking, Telephone banking, Internet banking and EDI(Electronic Data Interchange).

E-Banking

E-banking is a range of banking services that utilizes electronic equipment and includes Telephone banking, Net Banking, ATM, Debit/Credit Card, EFT, AFT etc. IT reduced the cost of large paper work and other formalities. The use of ATM's lead to the concept of always available at all time and anywhere. This is one of the new forms of e-banking which is gaining popularity.

Internet is a networking of computers. It facilitates marketing message can be transferred from one place to another place. Internet is a fast developing net and is of most important for public sector undertaking, Educations institutions and Research organization etc.

Automated Teller Machine (ATM)

It is operated by the customers to make deposits, withdrawals and all other financial transactions. ATM facility is available everywhere in the world. ATM id made of plastic card containing the customer's name. ATM require secret personal identification number (Pin) provided by the banks.

Net Banking

In February 1991, in India net banking was first introduced to develop the banking system. It is communication network established by RBI on the basis of recommendation of the committee appointed by it under the chairmanship of the executive director. In this system, the message of banking transaction can be transferred in the form of codes from the city to the other. It is also useful in foreign exchange dealings.

Chip Card

It is a special card which contain customer's name, code etc. chip card enables the customer for any type of payments. As well as card used the amount of credit start to decrease.

Phone Banking

Recently, Phone banking is most convenient technique. Customers can now dial up the bank's designed telephone number and by dialing his ID number will be able to get connectivity to bank's designated computer. The software provided in the machine interactive with the computer asking him to dial the code number of service required by him and suitably answer him.

Tele Banking

Tele Banking is another innovative technique which provided the 24 hours facility of banking to the customer. In this system, the computers at bank are connected to a telephone link with help of modem.

Mobile Banking

Now these days, mobile banking facility provides ease to every customer. For this service, mobile phone should be either being SMS or WAP enabled. These facilities are available even to those customers with only credit card accounts with the bank.

Internet Banking

Internet Banking provides the system of information and accessing accounts at anywhere. It enabling the customer to do banking transactions at home or office. This is also called virtual banking. Now user can operate all these type of transactions on his computer through website of bank.

Cash Dispensers

Cash Dispensers is another reform of e-banking for payment to saving time and cost. The operation by this machine is cheaper than manual operations and this machine is cheaper and fast than that of ATM. ATM made of plastic card which is magnetically coated. After completing the formalities, the machines allow the transactions for required amount.

Electronic Clearing Service

Reserve Bank of India has appointed a committee to review the mechanization in the banks and also review the electronic clearing service in 1994. The committee recommended in its report that electronic clearing service-credit clearing facility should be made available to all corporate bodies/Govt. institutions for making repetitive low value payment like dividend, interest, refund, salary, pension or commission. The committee recommended electronic Clearing Service-Debit clearing. ECS used for payments of utility bills, insurance premium and installments to leasing and financing companies.

Cyber Security

Today at the time of digitalization there is big need of cyber security. Internet banking, mobile banking, web portal are very risky for cybercrime. There is need to prevent cybercrime. Security standards needs to modified and adopt cyber security program.

All these technological revolution create competitiveness advantages to Indian banks. It created opportunity of joint venture and FDI for Indian banks.

REVIEW OF LITERATURE

Rani (2015) said that banking sector is play important role in financial services. IT solution increases the effectiveness and innovation in financial services. The objective of this study is to measure the impact of IT in Indian banking sector. Information technology provides tele banking, mobile banking, net banking, ATM, credit cards, debit cards, electronic payment systems etc. IT solutions improved customer services and provide fast processing of banking operations. **Dangolani (2011)** said that information technology has changed the functioning of banking sector. The objective of this study is to determine the impact of information technology in the banking system of Bank Keshavarzi Iran. He has collected data from customers and employees of Banks in Iran. He used five point likert scales to determine the impact of information technology in banking system. He found that IT has positive and significant impact on banking system. **Nejad (2016)** said in his study that financial innovations have changed the business strategy, consumer's perceptions, economy and society. The objective of the study is to present an orderly review on research on innovations in financial services and find the scope which has given less attention. He has reviewed 121 research studies and found the areas which have not still taken for study. He provided opportunity for further research study. **Karlan et al. (2016)** said that some innovative financial services may have positive impacts on wellbeing or not. They described which innovations made revolution in financial services. They found major challenges and hurdles in the way of innovative financial services. They provided evidence based challenges and give implications and suggestion for the solution of problems. **Madhushree et al. (2018)** have stated that IT reform new process, storing and broadcasting of all forms of material using computer knowledge and telecommunication systems. IT and internet made automation in banking system. Emerging trends like net banking, ATM, mobile banking, e-banking has changed the functioning of banking and facilitate automation and convenient in banking deals. They concluded that IT has facilitated accurate and timely management of banking system. IT provides revolution in Indian banking. **Gayathri and Suvitha (2018)** have stated that information technology made banking transactions easier and fastest. The objective of the study is to effect of IT on profitability of banks with marketing expenses. They have collected data from 21 Indian banks. They found that IT increased the profitability of banks than compare to marketing efforts. They concluded that banks should do expenditures on information technology rather than on marketing expenses. They suggested that Indian banks should do investment on new technology and innovation. It may increase the efficiency and effectiveness of banks and increase the profitability of banks.

OBJECTIVES OF THE STUDY

1. To study the recent development of IT in Banking Sector.
2. To understand the benefits and challenges of IT in Banking Sector.

RESEARCH METHODOLOGY

The present study relates to the importance of IT practices followed by the banking sector. Descriptive research design was applied for investigation of research study. Information has been collected on the basis of both Primary and secondary data considering the need of the study. The objective of research is to search new which has not find earlier.

DATA COLLECTION

Both primary and secondary data have been collected for the purpose of this study.

Primary Data

Information gathered by feedback, interview and discussion with various executives and personnel of banking sector.

Secondary Data

Secondary data means data that is already available and their information has also obtains through:

1. Books
2. Journals of banking sector
3. Internet Resources
4. Newspaper

BENEFITS OF IT IN BANKING SECTOR

Now banking system moved to automation from traditional functioning. In past the moments of relationship between banks and customers only when customers have visited to banks. But now the relationship between banks and customers become easier, there is no need to visit banks. Customers can anytime, anywhere deal with banks with information technology. Customers want automation, convenient delivery system and fast services. Internet banking removed all hurdles in the way of customers and banks. IT has helped the banking sector to automate their business process and minimize the transactional delay. IT revolution has changed the functioning of Indian banks. IT has a positive impact on banking sectors.

1. IT offered banking products and services in easiest and convenient way. It increased productivity and efficiency.
2. Banking transactions become easy there is no need for customers to visit banks.
3. Banking process become fast and accurate than traditional process.
4. Banking documentation such as retrieval and maintenance became easier and reliable.
5. It has become possible to clear the recurring dues like payment for electricity, telephone bill, shopping bill by instructing the banks for payment from customer account.
6. Authentication of credit card, debit card and other electronic payment instrument by the bank has also facilitated shopping, purchasing without any transactional delay.
7. Customers can access banking facilities anytime and anywhere, there is no need to visit banks.
8. Net banking such as Google pay and RTGS made easier to customers for doing any type of payments.
9. E-Banking provides transparency in banking transactions.

10. The scope of frauds in banking transactions got minimized with the use of security platform such as use of password, double authentication etc.
11. Mobile banking reduced the cost of visiting banks location, it reduced geographical limitations. It provides banking anytime anywhere.
12. Now banks introduced automation like Automated Banking Services Solution which provides Cash Deposit Machine, Passbook Printing Machine, Cheque Deposit Machine etc.
13. Innovation and advancement increased the growth of Indian economy. Now banking sector attract the foreign clients and force to invest in Indian banks. Joint venture and foreign direct investment became easier for customers and clients.
14. Net-safe provides security to customers by federal legislation.
15. IT provides NRI Services to customers for sending and retrieving money from relatives who have settled in abroad.

CHALLENGES

1. The rise of Non-Performing Assets (NPAs) also increased the challenge in front of banks.
2. Rise of frauds like accounting frauds, demand draft fraud, fraudulent loans etc.
3. Due to globalization, the banks are faced competitive environment so stress on adopting fast technology.
4. Facilitates best technological services in rural areas are big challenge.
5. One another challenge is regulatory compliance, which has become one of the most significant banking industry challenges like increase regulatory fees, e-documentation etc.
6. Customers' retention is big challenges as customers need best and fast services. Customer loyalty is big expectation.
7. Outdated mobile phone also a big hurdle in facilitating best services to its clients.
8. Sustainable success of banking system required continuous innovation.

CONCLUSION

The Indian banking system is moving to growth and advancement. IT created innovation and automation in the development of banking system. In fact, this is not possible without creating sufficient infrastructure or presence of sufficient number of users. It is proved that banking achievements not possible without IT revolution. More and more regional languages software's could be introduced to attract more and more people from rural area also. Now these days IT makes over the banking system of India. In this research paper we found that information technology is a revolution in the development of banking system. This paper focuses to understand IT and its impact on banking sector. IT has changed the functioning of banks positively. In spite of positive impacts of IT, there is some drawback of IT. There is risk of Cyber Attack, risk of lost of data, fear of frauds etc. It concluded that adoption of IT became basic need of banks for competitive advantages and globalization. There is big need to invest more in information technology rather than other marketing tools.

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EMBRACING DIGITALIZATION AND INNOVATION: A CATALYST FOR TRANSFORMATION

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ABSTRACT

In today's rapidly evolving world, digitalization and innovation have emerged as transformative forces driving change across industries and societies. The integration of digital technologies and the pursuit of innovative solutions have revolutionized traditional systems, leading to enhanced efficiency, increased productivity, and improved customer experiences. This write-up explores the profound impact of digitalization and innovation, highlighting their benefits, challenges, and the imperative for organizations to embrace them for long-term success.

Keywords: Digitalization and Innovation, Technology.

INTRODUCTION

DIGITALIZATION

1. Definition and Key Elements

Digitalization refers to the process of using digital technologies to transform analog data and processes into digital formats. It involves the adoption and integration of digital tools, platforms, and systems across various aspects of an organization's operations, including communication, production, marketing, and service delivery.

2. Benefits of Digitalization

- Enhanced Efficiency:** Digitalization streamlines operations by automating tasks, reducing manual errors, and improving overall efficiency. It enables organizations to optimize processes, eliminate redundancies, and allocate resources effectively, leading to cost savings and increased productivity.
- Improved Customer Experience:** Digitalization empowers organizations to provide personalized, seamless, and accessible experiences to their customers. Through digital channels and platforms, businesses can offer self-service options, real-time support, and personalized recommendations, fostering customer loyalty and satisfaction.
- Data-Driven Decision Making:** Digitalization generates vast amounts of data, enabling organizations to gather valuable insights for informed decision-making. Through advanced analytics and AI technologies, businesses can uncover patterns, trends, and customer preferences, facilitating strategic planning and innovation.
- Global Reach and Market Expansion:** Digitalization breaks down geographical barriers, enabling organizations to reach wider audiences and explore new markets. Online platforms and e-commerce solutions provide opportunities for businesses to expand their customer base and diversify revenue streams.

3. Challenges and Considerations

- Security and Privacy:** With increased digitalization comes the need for robust cybersecurity measures and the protection of sensitive data. Organizations must invest in secure infrastructure, encryption, and user privacy safeguards to address evolving cyber threats.
- Skills and Workforce Readiness:** Digitalization requires a skilled workforce capable of adapting to technological advancements. Organizations need to invest in training programs

and up skilling initiatives to ensure employees are equipped with the necessary digital competencies.

3. **Digital Divide:** The digital divide refers to the gap between those who have access to digital technologies and those who do not. Organizations should strive to address this divide to ensure equal opportunities and inclusivity in the digital era.

INNOVATION

Definition and Types of Innovation

Innovation encompasses the creation and implementation of novel ideas, processes, products, or services that result in significant value addition. It can be classified into four types: product innovation (new or improved products), process innovation (enhanced operational methods), business model innovation (new approaches to value creation), and organizational innovation (new structures, systems, or cultures).

Benefits of Innovation

1. **Competitive Advantage:** Innovation fosters differentiation and helps organizations stay ahead in a highly competitive market. By introducing unique products or services, organizations can attract customers, drive market share, and build a sustainable competitive advantage.
2. **Adaptability and Resilience:** Innovation enables organizations to adapt to changing market dynamics, customer needs, and emerging trends. By continuously evolving and embracing new ideas, businesses can enhance their resilience and stay relevant in dynamic environments.
3. **Efficiency and Cost Savings:** Innovative solutions often lead to process improvements, cost reductions, and resource optimization. By challenging existing practices, organizations can identify inefficiencies, streamline operations, and achieve cost savings.
4. **Positive Organizational Culture:** Embracing innovation fosters a culture of creativity, collaboration, and continuous learning within organizations. It motivates employees, encourages their participation in problem-solving, and nurtures an environment conducive to experimentation and growth.

Overcoming Barriers to Innovation

1. **Encouraging Risk-Taking:** Organizations must create an environment that supports calculated risk-taking and encourages employees to propose and explore new ideas without fear of failure.
2. **Collaboration and Diversity:** Collaboration among diverse teams and stakeholders fosters cross-pollination of ideas, perspectives, and expertise, nurturing innovation through collective intelligence.
3. **Agility and Flexibility:** Organizations should embrace agile methodologies and flexible structures that enable rapid prototyping, iterative development, and adaptation to market feedback.
4. **External Partnerships:** Collaborating with external partners, such as startups, academia, or innovation hubs, can provide access to fresh ideas, cutting-edge technologies, and new market opportunities.

CONCLUSION

Digitalization and innovation have become indispensable drivers of transformation across sectors. By leveraging digital technologies and embracing innovative approaches, organizations can unlock numerous benefits, including improved efficiency, enhanced customer experiences, and sustained competitiveness. However, navigating the challenges associated with digitalization and fostering a culture of innovation requires a strategic mindset, investment in capabilities, and a commitment to continuous learning. Embracing digitalization and innovation is not merely an option; it is imperative for organizations seeking long-term success in today's ever-evolving digital landscape.

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TECHNOLOGICAL TRANSFORMATION AND DIGITAL PUBLIC INFRASTRUCTURE

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ABSTRACT

The rapid advancement of technology and the increasing digitization of public services have revolutionized the way governments and societies operate. This research paper provides a comprehensive review of the relationship between technological transformation and digital public infrastructure. It explores the key concepts, challenges, and opportunities associated with the integration of technology into public infrastructure and the resulting transformational effects on governance, service delivery, and citizen engagement. The paper also examines case studies from different countries to illustrate successful implementations and lessons learned. The findings highlight the potential benefits and risks of digital public infrastructure, as well as the critical factors for its successful implementation and long-term sustainability.

Keywords: Digital Public Infrastructure, Technological Transformation, Sustainability.

INTRODUCTION

Technological transformation refers to the widespread integration and adoption of digital technologies across various sectors and aspects of society, leading to significant changes in how businesses, governments, and individuals operate. It involves leveraging advancements in information technology to enhance productivity, efficiency, and innovation.

India has undergone a significant technological transformation and has made substantial strides in building a robust digital public infrastructure over the past few years. Here are some key aspects of India's technological evolution and its digital public infrastructure:

Digital India Initiative: Launched in 2015, the Digital India initiative aims to transform the country into a digitally empowered society and knowledge economy. It focuses on various areas such as digital connectivity, digital services, and digital literacy.

Digital Connectivity: India has made remarkable progress in expanding digital connectivity, especially through the spread of mobile phones and the proliferation of affordable internet access. The availability of inexpensive smartphones and low-cost data plans has led to increased digital inclusion and access to information.

Aadhaar and Biometric Identity: The Aadhaar project, a unique biometric identification system, has played a significant role in India's digital transformation. It provides a universal identification system that enables citizens to access various government services and benefits online.

Digital Payments and Financial Inclusion: Initiatives like the Unified Payments Interface (UPI) have revolutionized digital payments in India. UPI allows for seamless and real-time fund transfers between bank accounts through mobile phones, leading to increased financial inclusion and a reduction in cash transactions.

E-Governance and Online Services: Various government services are now available online, making it easier for citizens to access essential services such as applying for documents, paying taxes, and obtaining permits. The e-governance framework has streamlined administrative processes and reduced bureaucratic hurdles.

Smart Cities and Urban Infrastructure: The Smart Cities Mission aims to create sustainable and technology-driven urban centers. This involves the integration of technology to improve urban planning, transportation, waste management, and overall quality of life for citizens.

Digital Literacy and Skill Development: The government has been focusing on promoting digital literacy and skill development programs to empower citizens with the necessary skills to participate in the digital economy.

Open Data Initiatives: India has launched open data initiatives that make government data available to the public in machine-readable formats. This promotes transparency, innovation, and the development of data-driven solutions.

Startups and Innovation: India has seen a surge in tech startups and innovation, driven by a growing entrepreneurial spirit and government initiatives that support innovation and entrepreneurship.

Cybersecurity and Data Privacy: As digital adoption increases, cybersecurity and data privacy have become important concerns. The government and various organizations are working to strengthen cybersecurity measures and ensure data protection.

SOME KEY ROLES OF TECHNOLOGICAL TRANSFORMATION INCLUDE:

1. **Innovation:** Advanced technologies drive innovation by enabling the development of new products, services, and business models. This innovation, in turn, can lead to economic growth and increased competitiveness.
2. **Efficiency:** Technologies like automation, artificial intelligence (AI), and the Internet of Things (IoT) streamline processes, reduce human errors, and optimize resource utilization, leading to increased efficiency in various sectors.
3. **Global Connectivity:** Technology facilitates global connectivity, allowing people, businesses, and governments to collaborate, share information, and access resources from anywhere in the world.
4. **Data Insights:** Technological advancements enable the collection, analysis, and interpretation of large volumes of data. This data-driven approach can inform decision-making, policy formulation, and resource allocation.
5. **Disruption:** While technological transformation brings opportunities, it can also disrupt established industries and business models. Companies and governments need to adapt and embrace change to stay relevant in the evolving landscape.

Digital public infrastructure refers to the technological framework and systems that support the delivery of public services and facilitate digital interactions between governments, citizens, and businesses. It includes various components such as broadband internet connectivity, data centers, cloud computing, open data platforms, digital identity systems, and online service delivery platforms.

KEY ROLES OF DIGITAL PUBLIC INFRASTRUCTURE INCLUDE:

1. **E-Government Services:** Digital public infrastructure enables the delivery of various government services online, such as applying for permits, paying taxes, accessing healthcare information, and voting.
2. **Accessibility and Inclusion:** Digital infrastructure ensures that essential services are accessible to all citizens, including those in remote or underserved areas. It promotes inclusivity by reducing barriers to access.
3. **Data Security and Privacy:** Robust digital infrastructure incorporates measures to protect sensitive data and ensure citizen privacy. Secure digital platforms build trust between citizens and governments.
4. **Transparency and Accountability:** Digital platforms can enhance transparency by making government processes, decisions, and expenditures more accessible to the public. This fosters accountability and reduces opportunities for corruption.
5. **Emergency Response and Crisis Management:** Digital public infrastructure can play a critical role in emergency response and disaster management by enabling efficient communication and coordination among relevant agencies and stakeholders.

The combination of technological transformation and digital public infrastructure has the potential to revolutionize the way governments and public institutions function, improving service delivery, enhancing transparency, and fostering citizen engagement. Here are some key aspects and benefits of this convergence:

- 1. Service Delivery:** Digital public infrastructure enables governments to offer online services, making it easier and more convenient for citizens to access and interact with public services. This can include applications for permits and licenses, tax filing, online education, healthcare services, and more. Digital transformation streamlines administrative processes, reduces paperwork, and enhances the efficiency of service delivery.
- 2. E-Governance:** Governments can leverage digital technologies to improve governance mechanisms and decision-making processes. This includes implementing electronic voting systems, digitizing public records and documents, enhancing government-citizen communication channels, and fostering participatory platforms for public consultation and feedback.
- 3. Open Data and Transparency:** Digital public infrastructure supports the availability and accessibility of government data through open data platforms. By making data sets freely available, governments can encourage innovation, enable data-driven decision-making, and promote transparency and accountability.
- 4. Connectivity and Inclusion:** Broadband internet connectivity is a fundamental component of digital public infrastructure. By ensuring affordable and reliable access to the internet, governments can bridge the digital divide, promote digital literacy, and foster social and economic inclusion. This connectivity facilitates access to online services, e-learning, e-commerce, and digital entrepreneurship.
- 5. Cybersecurity and Privacy:** As digital systems become more pervasive, ensuring cybersecurity and protecting citizens' privacy becomes paramount. Governments must invest in robust cybersecurity measures, data protection frameworks, and legal frameworks to address emerging challenges and risks associated with digital transformation.
- 6. Innovation and Economic Growth:** Technological transformation and digital public infrastructure create an environment conducive to innovation, entrepreneurship, and economic growth. By fostering digital ecosystems, governments can attract investment, support startups, and stimulate the development of new industries and services.
- 7. Collaboration and Partnerships:** Collaboration between governments, private sector entities, and civil society organizations is crucial for the successful implementation of digital public infrastructure. Public-private partnerships can leverage expertise, resources, and innovation to build and maintain robust technological frameworks and platforms.

It's important to note that the successful implementation of technological transformation and digital public infrastructure requires strategic planning, adequate funding, stakeholder engagement, and effective governance mechanisms to address challenges such as cybersecurity, privacy concerns, and the digital divide.

However, there are several barriers that can impede or slow down the progress of these initiatives. Some of the common barriers include:

Lack of Digital Literacy: Many people, particularly in underserved communities, may lack the necessary skills to effectively use and navigate digital technologies. This can hinder the adoption of digital public infrastructure and limit the potential benefits.

Digital Divide: Disparities in access to technology and the internet can create a digital divide, where certain populations or regions have limited or no access to the digital tools and resources needed for technological transformation.

Infrastructure Limitations: Inadequate physical and digital infrastructure, such as poor internet connectivity, outdated hardware, and insufficient network capacity, can hinder the implementation and utilization of digital technologies.

Data Privacy and Security Concerns: As more data is collected and shared through digital infrastructure, concerns about data privacy, security breaches, and cyberattacks can deter individuals and organizations from fully embracing new technologies.

Regulatory and Legal Hurdles: Complex and outdated regulatory frameworks can pose challenges for the implementation of digital initiatives. Uncertainty about compliance and legal issues may discourage innovation and investment.

Resistance to Change: People are often resistant to change, especially if it disrupts established workflows and processes. Overcoming resistance and encouraging a culture of innovation and adaptability can be challenging.

Financial Constraints: Developing and maintaining robust digital infrastructure requires significant financial investment. Budget constraints or competing priorities can limit the resources available for technological transformation.

Interoperability Issues: Incompatible systems and lack of standardized protocols can hinder the seamless integration of different digital solutions, making it difficult to create a cohesive digital public infrastructure.

Vendor Lock-In: Dependence on a single technology provider can limit flexibility and choice, making it challenging to switch to alternative solutions or adapt to changing needs.

Skill Shortages: The shortage of skilled professionals, such as data scientists, software developers, and cybersecurity experts, can hinder the successful implementation and management of digital projects.

Cultural and Organizational Challenges: Organizations may struggle to align their internal culture, processes, and structures with the requirements of technological transformation. Resistance from employees or lack of clear leadership support can impede progress.

Complexity and Overambition: Undertaking overly complex or ambitious projects without proper planning and stakeholder engagement can lead to delays, cost overruns, and even project failure.

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"PROMOTING UNIVERSAL HEALTHCARE AND ADDRESSING HEALTH DISPARITIES: INDIA'S G20 INITIATIVES"

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ABSTRACT

Universal healthcare and the reduction of health disparities have emerged as critical global challenges, requiring concerted efforts from nations to ensure equitable access to quality healthcare services. India, as a diverse and populous nation, faces multifaceted health challenges. Socioeconomic disparities, inadequate infrastructure, and limited access to healthcare services have resulted in uneven health outcomes across different regions and population groups. Recognizing the urgency to tackle these issues, India has prioritized health as a key agenda item during its G20 presidency. This involves ensuring that every individual, regardless of their socio-economic background, has access to essential health services without experiencing financial hardship. To achieve this, India has implemented a comprehensive framework that combines various policy measures, such as expanding the scope of existing healthcare programs, strengthening primary healthcare infrastructure, and increasing public and private sector investments in healthcare. India's G20 initiatives also include bridging the gap between urban and rural areas, between different socio-economic groups, by improving access to healthcare facilities, enhancing the quality of services, and promoting health awareness and education. Special attention is given to marginalized communities, including rural populations, women, children, and the elderly, who often face heightened health vulnerabilities. India's G20 initiatives emphasize the importance of collaboration and knowledge-sharing among G20 member countries. India seeks to leverage the expertise and experiences of other nations in areas such as healthcare financing, technological innovation, and best practices in health service delivery. Through international partnerships, India aims to implement evidence-based policies and strategies that have proven successful in improving healthcare access and reducing disparities in other countries. In conclusion, this chapter sheds light on India's G20 initiatives in promoting universal healthcare and addressing health disparities. By prioritizing these issues, India demonstrates its commitment to equitable healthcare access and improved health outcomes for all its citizens. Through a multi-faceted approach that combines policy reforms, infrastructure development, international collaborations, and digital innovation, India seeks to create a more inclusive and resilient healthcare system that serves as a model for other nations. The chapter highlights the potential impact of these initiatives in transforming the healthcare landscape, fostering social progress, and driving sustainable development in India and beyond.

Keywords: Healthcare Access, Health Equity, Universal Healthcare Coverage, Primary Healthcare Strengthening, Addressing Health Disparities

INTRODUCTION

IMPORTANCE OF PROMOTING UNIVERSAL HEALTHCARE AND ADDRESSING HEALTH DISPARITIES: INDIA'S ROLE AS G20 PRESIDENCY

Universal healthcare is critical to realizing the right to health and promoting social and economic development. The approach assures that everyone, regardless of financial situation, regional origin, or other factors, has access to all critical health care. The World Health Organization (WHO) also places a premium on the notion of universal health coverage (UHC), which has the potential to improve health outcomes while simultaneously promoting social fairness and holistic development [1]. According to WHO, social determinants of health include factors and situations that influence health outcomes, such as upbringing, malnutrition status, age, and so on. These factors, in turn, are determined by human and financial resources, their distribution, and the availability of basic supplies necessary for survival [2]. According to the WHO Commission on Social factors of

Health (CSDH), focusing on SDH is one of the primary factors of social well-being, reducing social inequities, and ensuring inclusive growth. [3]. Another significant feature is the involvement and services of government and private health organizations, the outreach of government initiatives to marginalized groups, guaranteeing favorable environmental conditions, and providing healthy meals to people of all ages [4]. With changes in lifestyle, population growth, and a variety of other controllable and uncontrollable causes, lifestyle disorders such as obesity, cardiovascular disease, diabetes, and depression are becoming more prevalent, wreaking havoc on people. The rising incidence of chronic disorders has a significant impact on the health sector, both on carers and health professionals, in addition to the sufferings of individuals and families. These socioeconomic factors contribute to societal stratification and health disparities among people from various social and economic groups, genders, and ethnicities. Health inequality, which cuts across structural inequalities, is a more recent concern and may be a result of imbalances in development planning and economic design [5]. Health inequalities are a primary factor of the vast discrepancies in health outcomes that exist between demographic groups. Addressing health disparities is critical to attaining health equity and ensuring that everyone has equal access to a healthy lifestyle. Health disparities have repeatedly been linked to higher morbidity and mortality rates, higher healthcare costs, and lower overall quality of life [6]. The period during which India held the presidency of the Group of Twenty (G20), an international forum comprised of 19 countries and the European Union, is referred to as India's G20 presidency. The G20 represents the world's biggest economies and wields enormous influence over global economic policies and the resolution of important global concerns. The G20 presidency of India denotes the country's leadership role in organizing and directing the G20 agenda for the appointed year. India has the chance to set goals, stimulate conversations, and propose actions aimed at promoting global economic growth, financial stability, and sustainable development as the G20 presidency. As India takes over the G20 chair, it recognizes the necessity of universal healthcare and addressing health inequities as essential components of long-term development. India has prioritized these problems on its G20 agenda, indicating its dedication to promoting fair access to healthcare and decreasing health disparities. India has a unique platform to encourage international collaboration and knowledge-sharing on healthcare policies and best practices as the G20 presidency. It can draw on the expertise and experiences of other G20 members to establish evidence-based plans and initiatives that effectively address health disparities. During this phase of leadership, India can assist the globe in designing and refining health policies that would have a long-term impact on the world's sustainable and holistic growth. Furthermore, India's G20 presidency presents an opportunity to urge for expanded expenditures in healthcare infrastructure and systems. By mobilizing resources and collaborating with public and private sector players, India may aim to improve healthcare delivery and coverage, especially for underprivileged people.

UNIVERSAL HEALTHCARE: INDIA'S APPROACH AND POLICY MEASURES

Universal healthcare advocates 'health' as a topmost priority and human right where an individual must get all health services irrespective of regional, religious, financial and social status. The significance of universal healthcare lies in its potential to improve overall health outcomes, reduce health disparities, and promote social well-being [7]. This definition emphasizes the importance of affordability and accessibility of health services which contributes to improved health outcomes by providing early diagnosis, timely treatment, and preventive services. Achieving universal healthcare will reduce the premature death rate, infant mortality rate, and overall, the disease burden globally [8]. Secondly, it may also improve the status of health inequalities especially in marginalized population, minorities (racial and ethnic), and rural communities. Several studies have reported the positive impact of universal healthcare system on health inequalities [9].

Universal health care also emanates economic advantages as a large population is saved from untimely deaths, financial expenditure on health preventing them from falling into poverty. This may also impact productivity as well as contribution of a society in nation building [10]. By reducing financial barriers to healthcare, universal healthcare systems promote equity and social cohesion within societies. A report by the Organization for Economic Co-operation and Development (OECD) found that countries with universal healthcare systems tend to have higher life expectancy and higher labor force participation rates [11].

India has advocated and effortlessly implemented a multidimensional approach to achieve universal healthcare goals. This involves forming policies, their effective implementation and ensuring their outreach to all sections

of society. Here, we explore some key elements of India's approach, policy measures and initiatives implemented by India to promote universal healthcare and address health disparities.

NATIONAL HEALTH MISSION (NHM)

Providing health assistance and addressing health related issues is although a matter of state/UT subjugation yet National Health Mission (NHM) is a flagship and ambitious program of health ministry of Govt. of India with its two Sub-Missions, National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM) these programs provide assistance to states to strengthen health infrastructure to ensure universal access to equitable, affordable and quality health care services. The schemes launched under NHM are available free of cost to all income groups visiting Public Health Facilities at sub district and district level. The mission aims to strengthen the healthcare system through initiatives such as the provision of essential drugs, capacity building of healthcare personnel, and improving infrastructure [12]

AYUSHMAN BHARAT

Ayushman Bharat, launched by the Government of India, is a flagship scheme that aligns with the National Health Policy 2017. Its primary objective is to achieve Universal Health Coverage (UHC) and ensure that no one is left behind in accessing healthcare services. The scheme represents a departure from the traditional sectoral approach to healthcare delivery, aiming for a comprehensive and need-based approach. It encompasses preventive, promotive, and ambulatory care at all levels of the healthcare system, including primary, secondary, and tertiary care.

AYUSHMAN BHARAT CONSISTS OF TWO INTERCONNECTED COMPONENTS

Health and Wellness Centers (HWCs): These centers serve as the foundation of the scheme, transforming the existing primary healthcare facilities into comprehensive centers that provide a range of essential healthcare services. HWCs focus on preventive and promotive care, screening for common diseases, and providing necessary treatments and medications.

PradhanMantri Jan ArogyaYojana (PM-JAY): This component of Ayushman Bharat aims to provide financial protection to vulnerable populations by offering health insurance coverage. PM-JAY offers cashless and paperless access to secondary and tertiary care services to eligible beneficiaries. It covers a wide range of treatments, including hospitalizations, surgeries, and medical procedures, ensuring that families are protected from the burden of catastrophic healthcare expenses.

Ayushman Bharat's holistic approach and its integration of HWCs and PM-JAY contribute to bridging the gaps in healthcare access and affordability. It strives to improve the overall health and well-being of the population, particularly those who were previously underserved or faced financial barriers to healthcare. The scheme's implementation involves collaborations with state governments, public and private healthcare providers, and various stakeholders to ensure the effective delivery of healthcare services. Ayushman Bharat represents a significant step towards achieving the goal of UHC in India and ensuring that quality healthcare is accessible and affordable for all.

NATIONAL HEALTH POLICY 2017

The National Health Policy 2017 lays out a comprehensive framework for achieving universal healthcare coverage in India. It emphasizes the need to strengthen primary healthcare, promote preventive and promotive healthcare, and increase public spending on healthcare. The policy aims to address health disparities by ensuring equitable access to healthcare services across the country. Other major initiatives include JananiShishuSuraksha Karyakram (JSSK) (under which free drugs, free diagnostics, free blood and diet, free transport from home to institution, between facilities in case of a referral and drop back home is provided), RashtriyaBalSwasthya Karyakram (RBSK) (which provides newborn and child health screening and early interventions services free of cost for birth defects, diseases, deficiencies and developmental delays to improve the quality of survival), implementation of Free Drugs and Free Diagnostics Service Initiatives and PM National Dialysis Programme.

These policy measures and initiatives implemented by India demonstrate the government's commitment to promoting universal healthcare and addressing health disparities. Through targeted interventions, financial

support schemes, and infrastructure development, India is making significant strides in improving healthcare access and reducing disparities among its diverse population.

Public-Private Partnership (PPP) Models: India recognizes the importance of engaging the private sector to enhance healthcare access. The government has implemented various PPP models to improve infrastructure, service delivery, and accessibility. For example, the PradhanMantri Public-Private Partnership for Diagnostic Imaging aims to establish imaging centers in public healthcare facilities through collaboration with the private sector. **National Digital Health Mission (NDHM):** The NDHM, launched in 2020, focuses on digital health infrastructure and services to facilitate the delivery of universal healthcare. It aims to create a unified digital platform for healthcare records, teleconsultations, and e-pharmacies, ensuring seamless access to healthcare services for all citizens [13]. India's approach to achieving universal healthcare coverage is a comprehensive and evolving process, combining policy reforms, targeted initiatives, and innovative programs. Through initiatives such as PMJAY, strengthening primary healthcare, promoting public-private partnerships, and harnessing digital technologies, India strives to improve healthcare access, reduce financial barriers, and enhance the overall quality of healthcare services for its population.

ADDRESSING HEALTH DISPARITIES IN INDIA

Health disparities in India are a significant concern, with disparities observed across various dimensions, including socioeconomic status, geography, gender, and caste. These disparities contribute to unequal health outcomes and limited access to healthcare services for certain population groups. For instance, studies have shown disparities in infant mortality rates, life expectancy, and prevalence of diseases among different socio-economic strata and marginalized communities [14].

Factors Contributing to Health Disparities

Several factors contribute to health disparities in India. Socioeconomic determinants such as poverty, inadequate education, and limited access to basic amenities play a crucial role in shaping health outcomes [15]. Furthermore, gender disparities, particularly in terms of access to healthcare and nutrition, have a significant impact on health disparities in India [16]. Additionally, structural issues, including limited healthcare infrastructure and workforce shortages, pose challenges in addressing health disparities effectively [17].

Targeted interventions for Marginalized Communities

To address health disparities among marginalized communities, India has implemented targeted interventions. For instance, the RashtriyaKishorSwasthya Karyakram (RKSK) focuses on adolescent health, aiming to improve the health and well-being of adolescents, particularly those from marginalized backgrounds [18]. Additionally, initiatives like the National Nutrition Mission (PoshanAbhiyaan) aim to tackle malnutrition among vulnerable populations, including women and children, by providing targeted interventions and support [19].

Improving access to Healthcare Services in rural and Remote Areas

India has undertaken various measures to improve access to healthcare services in rural and remote areas, where disparities are often more pronounced. The National Rural Health Mission (NRHM) has played a crucial role in strengthening primary healthcare infrastructure, ensuring the availability of essential drugs and diagnostics, and training healthcare workers (Ministry of Health and Family Welfare, Government of India). Additionally, mobile healthcare units, telemedicine initiatives, and community health workers have been deployed to extend healthcare services to remote areas [20].

COLLABORATION AND KNOWLEDGE-SHARING AMONG G20 COUNTRIES

International cooperation plays a crucial role in addressing health disparities, as it allows countries to learn from each other's experiences, share resources, and collectively work towards common goals. Collaboration among G20 countries is particularly significant due to their economic and political influence, as well as their shared commitment to global health. According to the World Health Organization (WHO), international cooperation is essential for tackling health disparities and achieving universal health coverage. It enables countries to address common health challenges, exchange knowledge and expertise, and mobilize resources to strengthen healthcare systems [21].

Sharing best practices and lessons learned is a key aspect of international collaboration among G20 countries in the context of healthcare. By sharing successful strategies and innovative approaches, countries can identify effective interventions and adapt them to their own contexts, leading to improved healthcare outcomes and reduced health disparities. The G20 Health Working Group, established in 2017, serves as a platform for member countries to exchange best practices and lessons learned in addressing health disparities. It facilitates discussions on policy approaches, healthcare financing, technological innovations, and capacity-building initiatives [22].

G20 member countries possess diverse experiences, expertise, and resources in healthcare. Leveraging this collective knowledge and expertise is instrumental in addressing health disparities effectively. For instance, India, as the G20 presidency, actively seeks to leverage the experiences and expertise of other member countries in areas such as healthcare financing, healthcare delivery models, and technology-driven solutions. Through collaborations, India can learn from successful approaches implemented by other countries and adapt them to its own healthcare system [23].

EVALUATION AND IMPACT OF INDIA'S G20 INITIATIVES

Evaluating India's progress towards universal healthcare coverage necessitates an examination of key indicators such as healthcare access, financial security, and health service use. Several studies and papers have been conducted to examine the impact of India's G20 actions in this area. National Health Accounts (NHA): The NHA provides complete data on India's health spending, allowing for an assessment of progress towards universal healthcare coverage. It monitors health-care spending patterns, financing sources, and resource distribution among regions and demographic groupings [24]. National Morbidity and Mortality Survey (NSS): The National Health Service gathers information on healthcare use, health insurance coverage, and out-of-pocket healthcare expenses. It aids in determining the extent to which people access healthcare services and the financial hardship they suffer [25]. Studies focus on indicators such as health outcomes, access to healthcare services, and reductions in inequalities among different population groups to assess the effectiveness of initiatives in addressing health disparities. Annual Health Survey (AHS): The AHS collects data at the state level on a variety of health indicators, including as infant mortality rate, maternal death rate, immunization coverage, and access to healthcare services. This data analysis aids in assessing the impact of measures on reducing health disparities between states and regions [26]. District-level Household and Facility Survey (DLHS): The DLHS collects data at the district level on numerous health and healthcare variables. It aids in assessing the effectiveness of measures in reducing inequities within states and districts, particularly among marginalized communities [27]. The impact of India's G20 initiatives on health outcomes and social well-being can be assessed through research and reports that look at changes in health indicators and population well-being. NFHS (National Family Health Survey): The NFHS collects detailed information on a wide range of health and social variables, including maternal and child health, nutrition, access to healthcare, and health-seeking behavior. Multiple rounds of NFHS data analysis aid in determining the long-term impact of interventions on health outcomes and social well-being [28]. GBD (Global Burden of Disease) Study: The GBD Study calculates the disease, disability, and death burden in various areas and countries. It aids in the evaluation of changes in health outcomes as well as the impact of treatments on disease burden reduction and general well-being [29].

CONCLUSION

The G20 must prioritize health in 2023. Since 2017, when the German presidency hosted the first G20 health ministers meeting, health has been a G20 priority. Health finance and systems development are now part of the G20's financial and Sherpa streams. An annual G20 health ministers meeting and a joint health and finance task group underscore the topic's gravity. The 2017 Berlin Declaration by G20 health ministers addressed pandemic preparedness, health system strengthening, and antimicrobial resistance. This declaration emphasized these concerns and the necessity for a collective response. The 2022 Indonesian presidency prioritized pandemic preparedness due to the COVID-19 pandemic. The 2023 Indian G20 presidency must build on accomplishments and achieve these vital goals. Pandemic preparedness, applying learning from the COVID-19 pandemic, and global health emergency prevention and response are crucial. Strengthening health systems worldwide is crucial to provide resilient and accessible healthcare to all. Global health governance must address antibiotic resistance. The Indian presidency can promote antibiotic prudence and antimicrobial resistance prevention. The Indian

presidency can improve global health governance and G20 partnership by prioritizing health. Sharing best practices, mobilizing health funding resources, and promoting healthcare equity are examples. The G20 can improve global health and population well-being by prioritizing these priorities.

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A SYSTEMATIC REVIEW DETECTION OF PLANT DISEASE USING HISTOGRAM ORIENTED GRADIENT

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ABSTRACT

Plants play a significant role in human life, and their health is crucial for various reasons. To prevent losses caused by diseases, it is essential to identify plant diseases promptly. This paper reviews the application of artificial intelligence in detecting healthy and unhealthy areas in plant leaves using color-based and region-based techniques. Advanced methods like HOG, deep learning, and machine learning are employed to accurately detect plant diseases. This research contributes to increasing plant profits in the global market and promoting a robust economy.

Keywords: Artificial Intelligence, Deep Learning, Image Processing, HOG

INTRODUCTION

The utilization of Artificial Intelligence (AI) in agriculture is of utmost importance today. Ensuring successful plant operations is a critical issue in farming, and preplanning disease detection plays a vital role in achieving this success. The agricultural industry has witnessed significant advancements in plant disease diagnosis, thanks to the integration of advanced visualization techniques and Convolutional Neural Networks (CNNs). Many plants with global economic importance are vulnerable to various diseases that can drastically impact yields. This review paper delves into the remarkable progress made in plant disease diagnosis through cutting-edge visualization methods, such as hyperspectral imaging, thermal imaging, and fluorescence imaging. Additionally, it explores how a robust CNN can be further empowered with Histogram of Oriented Gradients (HOG) image processing, leading to improved feature extraction and classification accuracy

DISEASE DETECTION & IDENTIFICATION METHODS

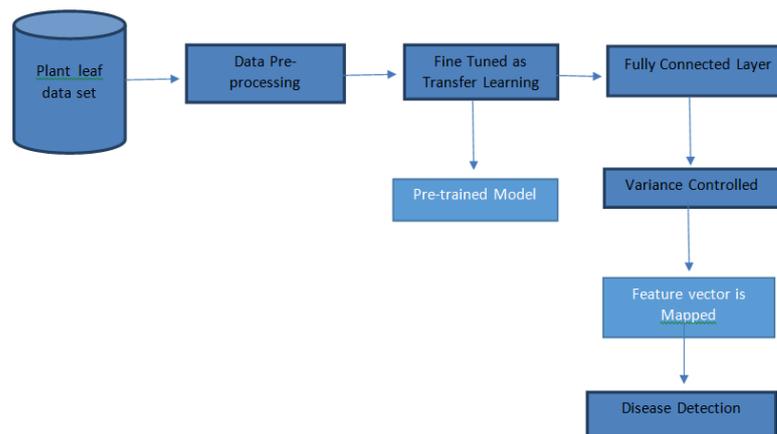
Detection of plant diseases can be made by various methods like in earlier detection can be made by manually (Check for Symptoms and Signs of leaf, plant root), approaches imaging, automatic detection using Deep learning. Early detection of plant disease using non-destructive method in plant growth and automatic detection by using this method it will give fast and accurate result. With the help of HOG method we can easily detect the plant disease. For disease diagnosis we use HOG model which is coupled with learning function that adjust the weight and biases of layers. Using of different digital devices capture the plant disease which is either healthy and unhealthy. After that prepare the image for the next level treatment for enhancement, segmentation, color and filtering. In CNNs using pattern recognition in application with large amount of data in images.

Sr. No	Method	Outcomes
1	Using machine learning process for leaf disease detection.	Famer have various HOG and LBP and SVM algorithm for that can be used detected and classification of disease in future
2	Paddy Plant disease detection based on Histogram Oriented Gradient Features	Farmer use SVM model is skilled to anticipate the sickness with precision of 97.73%
3	Model of sequential image	Data set of 4627 images of banana sequence of different length

	classifier for crop disease detection in plant in tree cultivation	carried out four banana disease image sequence.
4	System for diagnosing and treating disorders based on onion rules.	Farmer receives a diagnosis that is more rapid and precise than a conventional diagnosis. More onion diseases will be added, makes easy for users to access from any device and at any time.
5	An Android app for predicting crop output and identifying diseases.	Crop suffering from any disease it can be analysis with the help of image processing technique.
6	Plant Disease Detection Using Machine Learning	Could classify with an accuracy of about 70%. When used a large numbers of images and by using local and gobal features, such as SURF (Speed Up Robust Features), DENSE, and BOVW, the accuracy can be enhanced (Bag Of Visual Word) The machine learning algorithms are compared in the graph and table.
7	Deep Learning for Classifying Types of Onion using Google Colab	In this a method to develop a model utilising deep learning CNN that would enable individuals to identify the type of onion more precisely, with 99.99% accuracy.

METHODOLOGY

The health of plants and ensure organic growth, the Histogram of Oriented Gradients (HOG) method is employed as part of a multi-step approach. By utilizing image processing and village data, the HOG technique captures features from each growth stage image. These features are then used to train algorithms that analyze the images, yielding insightful results. This analysis takes into account the impact of environmental factors and soil conditions, providing valuable assistance to farmers in achieving profitable plant growth. Consequently, small-scale farmers can adopt the HOG-based method for onion cultivation, enhancing their agricultural practices, and ultimately leading to increased profitability and sustainable growth



CONCLUSION

In this research work, our primary objective is to investigate and understand the various plant diseases that occur during the growth period. To achieve this, we employ image processing techniques that play a crucial role in our analysis. The proposed HOG-based model serves as a robust and automated detection system, significantly mitigating crop losses for farmers. Throughout our research, we meticulously capture images at each growth stage and subject them to sophisticated algorithms. By doing so, we gain valuable insights into the impacts of environmental factors and soil conditions on plant health. Armed with this information, farmers can make informed decisions and implement appropriate strategies to foster profitable and sustainable plant growth. Our dataset comprises a diverse range of images, and our deep learning model demonstrates impressive accuracy in detecting and diagnosing plant diseases. By leveraging cutting-edge technology, we aim to provide practical solutions to help farmers tackle challenges and enhance agricultural productivity. In conclusion, our research not

only delves into the detection and diagnosis of plant diseases but also aims to empower farmers with the knowledge and tools they need to optimize their crop yield and overall profitability.

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JOB STRESS AMONG WORKING WOMEN – A STUDY OF CALL CENTRE EMPLOYEES

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ABSTRACT

Stress is an inevitable part of call centre employees. The objective of the present research is to find out the causes of stress and also empirically examines the level of stress level among call centre employees. Purposive sampling method was used to select a sample 100 women call centre employees in Delhi NCR. Findings of the study revealed that job insecurity, work pressure were the main causes of stress among call centre employees. It also emerged that stress is significantly more obvious among those call centre employees who are younger, more educated and have less work experience. The findings increase existing body of knowledge and novelty/contribute to the understanding of causes of stress as well as stress level among call centre employees.

Keywords: Stress, Job Stress, Call Centre Employees, Workplace Stress.

INTRODUCTION

Stress inevitable in an individual's life. It sometimes certain in an every one life. It sometimes our responses other times describes threats/ challenges. It is also a process by which we appraise and manage with environmental threats and environmental challenges (Myers, 2004). It refers to the nervousness we feel when we are unable to cope the demands of everyday life (Adams & Bromley, 1998). Everyday stress is common in life; however its severity might differ depending upon the situation, type of person and the availability of support. In today's global world, majority of research body links stress with the fast lifestyle. Researchers attribute this life style to the advancement of modern day technologies. Development of modern technology has altered the structure of our social life and society by increasing the speed with which we use to do things, therefore adding to the stress (Hoffman et al., 2009). Not only technology has affected our society but it has changed the means we think about everything from our household to work, values and lifestyle. In today scenario, call center environment has become one of the stressful areas and the stakes are very high (Cryer et al., 2003). Call centers are frequently compared with 18th century "sweat shops" since the employees have to deal with a continuous flow of customer calls 24/7. This result stress has become a common issue for call center employees and management, due to constant monitoring and high demands. Further, stress increases depending on the type of call center workers are working in such as inbound/out bound call center. Inbound call centers predominantly handles inbound calls i.e calls initiated by the customer and normally receives incoming information, inquiries or complaints from consumers. Whereas in outbound call centers, call center agents make outbound calls to customers/ sales leads. Type of work shift is another significant factor that affects the stress of among employees working in call centers. Call centers normally operate 24/7 as they deal with customers geographically located in different time zones, therefore resulting in having workers working round the clock to conciliate the customers.

Objectives

In the present research, the following objective were framed

1. To know the causes for the job stress among female workers.
2. To examine the attitudes of the women workers about at work place conditions of the call centres.
3. To observe effect of job stress on productivity.

4. To analyze the effective techniques to reduce job stress.
5. To recommend the suitable suggestions to cope up the stress.

METHODOLOGY

Data Collection

Primary data were collected using questionnaire and some face to face interface with employees. For secondary data, several books have been referred, magazines, visiting websites and journals. Further, to achieve the objectives of the study, purposive sampling method was used to select a sample 100 women call centre employees in Delhi NCR.

DATA ANALYSIS AND INTERPRETATION OF DATA

Particulars	No. of Respondents	Percentage
Associate	18	100%
Operation Manager	04	
Unit Manager	20	
Analyst	16	
Others	42	
Total	100	
Respondents Opinions towards Job		
Interesting	50	100%
Monotonous	04	
Boring Total	02	
Total	100	
Satisfaction towards Physical working condition		
Highly Satisfied	08	100%
Satisfied	62	
Neutral	28	
Highly dissatisfied	0	
Dissatisfied	02	
Total	100	
Satisfaction towards Psychological Working Condition		
Highly Amicable	10	100%
Cordial	28	
Neutral	44	
Strained	18	
Very poor	0	
Total	100	
Causes of Stress		
Roles Overload	42	100%
Roles Under load	10	
Inter personal relationship	20	
Conflicts	16	
Job dissatisfaction	12	
Total	100	
Level of Job Stress		
Mild	08	
Moderate	76	
Severe	12	
Extreme	04	
Total	100	
Techniques of Stress Management		
Counseling	54	
Job rotation	32	
Leisure breaks	60	
Informal relationship	18	
Sports activities	26	
Recognizing good work	38	
Other	04	
Total	100	

It is clear from the above table that majority of the respondents opined that they showing to moderate level of stress since overload. For this, organisation should to adopt strategies to overcome the stress level among call centre women employees.

FINDINGS OF THE STUDY

1. Heavy target load as one of the important factor for stress at work place. Majority of employees were overburden with workload in their workplace which ultimately leads to stress levels.
2. Working environment is comfortable for employees in which they are working.
3. Employees agree that the management techniques of stress will improve the confidence of the employees.
4. Quality of work and employees health is affected by work place stress.
5. Majority of the employees are satisfied with the physical working condition of the organisation.
6. Most of the respondents experiences moderate level of stress and very few number of respondents experiences high level of stress.
7. All the respondents prefer coping strategies personally to handle stress and they prefer to rest breaks to reduce stress level.

SUGGESTIONS OF THE STUDY

1. Organisation should inspect their programs as well as policies for coping stress. By employing and implementing various management programs to relieve stress.
2. Organisations should conduct seminars on regular basis by professionals to create awareness among employees to know how to relieve stress among them.
3. Organisation must give rewards and recognition to the workers in the form of performance bonus and higher compensation, etc.
4. Rotation of job can be practiced where by workers are shifted within various sites since there is greater variety of interesting as well as challenging job.
5. Proper delegation of work should be to the workers to avoid overload of work which could cause job stress.
6. Time management technique should be discussed with the employees so that they complete their task within the stipulated time.
7. Proper training must be provided for the workers to manage with the modern updates in technology as well as methods adopted in the business organisation.
8. Organisation should adopt job enhancement and workers counselling strategies.
9. The rules of organisation should be flexible so that the workers feel pleasant working with the concerned organisation.
10. Proper grievance handling system must be practiced to help the workers to overcome their difficulties.

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DIFFERENT PROMOTIONAL STRATEGIES OF PRODUCTS AND SERVICES IN THE MARKET ENVIRONMENT FOR INFLUENCING CONSUMERS

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ABSTRACT

As the informal sector has experienced rapid growth it has consequently attracted the increasing attention and there has been a growing body of literature focusing on its different aspects. Every business organization that is determined to succeed has to adopt an effective system for the promotion, distribution and sales of its services. Promotion is one of the most effective marketing tools to increase sales of the products and services for any organization. Promotion is a vital component of any successful business. If you're going to thrive, consumers need to know who you are and what you have to offer. Combining high-quality promotion with quality service is the best way to grow business. Marketers use a variety of methods to promote their products. Advertising, trade promotions, and consumer promotions are three primary tools that firms use in formulating their marketing strategies. A wide variety of price pro-motions are used to provide a lower price to the final consumers. These take the form of price deals, cents-off labels, coupons (in newspapers, magazines, mail, in/on pack), and a variety of rebates. Different promotional marketing strategies includes; 4 Ps i.e., product, price, place & promotion, target audience, budget etc.

Keywords: Marketing strategies, Promotion and Consumer.

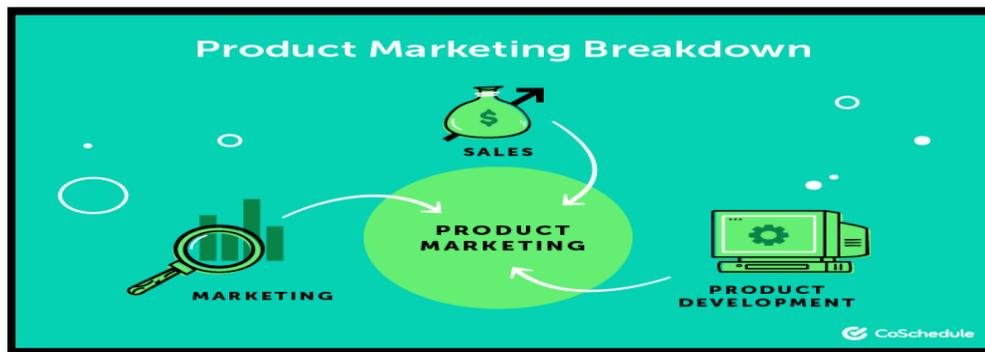
INTRODUCTION

Now a day it is important for all organizations to communicate effectively with present and potential consumers to win more customers for their products and services. Marketing promotional tools can provide a clear, consistent, credible and competitive message about the organization and its products and services to consumers. Consumer always confused to purchase the service because of the high perceived risk inherent in many service purchases. Different promotional tools can eliminate this situation and helps organization to get more customers for their services. Promotion is defined as providing information for persuasion. Promotion includes advertising, promotional events, personal selling, Website-based communication activities etc. Promotion is one of the most effective marketing tools to increase sales of the products and services for any organization. Starcomms Plc is faced with both a competitive and dynamic market setting, though the company is doing many things to maintain its leadership role in the industry. The company has also adopted intergraded marketing concepts as the basis for its marketing operations. It has become necessary for the company in order to continue informing and reminding its customers on how its brand services are different from the others in the market. Every business organization that is determined to succeed has to adopt an effective system for the promotion, distribution and sales of its services. Belch & Belch (2009), define promotion as "the coordination of all seller-initiated efforts to set up channels of information and persuasion in order to sell goods and services or promote an idea." "Some promotional activities may create stockpiling, increase sensitivity to prices, and reduce post promotional sales, while others may attract new customers or increase consumption. All companies/organizations, need marketing strategies to sell their products and reach their target consumers. Companies may have limited resources and must determine the most effective way to sell their goods or services. Three different types of marketing strategies for consumer products are market penetration, market development and product development. Marketing strategies for consumer products must do two basic things: pique consumers' interest and convince them that they need the product in question. It's not enough to explain what a product does or why it's useful – marketing materials should convey the nuances of the product, its features, why it looks and tastes better or is more efficient than its alternatives, and how it feels in the hands of the customer.



PRODUCT MARKETING

Product marketing involves bringing products to market and then promoting and selling them to consumers. It's where marketing, sales, and product development come together. Product marketers will market new products, empower the sales team to sell better, and work with the product development team to ensure their products meet consumer needs.



Product marketers must have a good understanding of their target audience and market. They must strategically position their products and use messaging that grabs users' attention and captures their interest. Then they can drive demand for the product to boost company revenue. Product marketers work primarily at the bottom of the sales funnel (BOFU) to encourage prospects to buy. Most product marketing activities also take place in the evaluation/decision stage of the buyer's journey. In other words, product marketers are responsible for getting people to purchase products and become loyal customers. More specifically, product marketers have three main responsibilities:

1. Determining product positioning and messaging to sell effectively,
2. Launching a new product and ensuring consumers understand its value,
3. Driving demand and sales for the product.



PRODUCT MARKETING STRATEGY

A product marketing strategy is like a roadmap that gives the directions which need to position, price, and promote the products successfully. It will show to marketers that how to get from the initial product development stage to launching, marketing, selling, and building customer loyalty.

Essential stages of Product Marketing

1. Identify target market, and develop buyer personas.
2. Determine product's positioning in the market through strong messaging. Understand who the product is for, what it does, why customers will want it, and how it's unique.
3. Share positioning and messaging with everyone in the company.
4. Set goals for new product.
5. Price the product.
6. Develop an effective launch plan.
7. Create content for the launch.
8. Prep the team for launch.
9. Launch the product.
10. Measure success by monitoring feedback – both internal and external.
11. Track metrics.

MARKETING STRATEGIES

Promotion strategies in marketing include a wide range of techniques to advertise and promote a product or service. The promotional activities differ as per industries and business type, ranging from newspaper advertising and direct mail flyers to automotive media boxes and trade fairs. A promotion strategy is defined by the plan and tactics marketers implement in marketing plan to increase their product or service demand. Promotional strategies play a vital role in the marketing mix (product, price, placement, and promotion), and they revolve around.

Target Audience: Who you are selling for, and what are their interests;

Budget: How much you are willing to invest in promotion;

Plan of action: What strategy you are adopting to reach your objectives and make sales.



The type of marketing strategy and program marketers develop will depend on the type of product they produce and the type of buyer that will purchase the product. Commodities and Differentiated Products are two very different types of products in the marketplace with different marketing strategies needed to generate adequate sales. Also, some products are sold directly to consumers and others are sold to intermediaries in the supply chain who use it as an ingredient or component of a consumer product.

Generic marketing strategies for various types of products and product buyers;

		Type of Product	
		Commodity	Differentiated Product
Type of Buyer	Consumer	1	2
	Intermediary	3	4

TYPE OF PRODUCT/TYPE OF BUYER

1) Commodity/Consumer – This involves producing a commodity and selling it directly to consumers. It takes hard work and commitment to build a market for product. More importantly, it takes time to build the market.

2) Differentiated Product/Consumer – This involves producing a differentiated product and selling it directly to consumers. Build relationships with consumers directly. Making the personal relationship part of the purchase decision will reduce the likelihood of the buyer switching to a competitor. For example, buyers will be less likely to shift to lower-priced products if competitors try to undercut the market. It takes time to build the market. This is especially true if marketers are attempting to build relationships directly with consumers or trying to create a product brand. Marketers need to have sufficient financial resources to maintain the business until your market is developed and sales are sufficient to generate a profit.

3) Commodity/Intermediary Buyer – This involves producing a commodity and selling to an intermediary (processor, manufacturer, wholesaler, etc.) in the supply chain as an ingredient or component of another product. Intermediaries usually want to work with a limited number of suppliers, so each supplier needs to provide a significant portion of the intermediary’s needs. Increased production levels will also lower production costs by achieving economies of size. Attempt to build business relationships with buyers to increase their cost of switching to a different supplier. Build a reputation for product’s quality and consistency by carefully monitoring and improving the production and distribution process.

4) Differentiated Product/Intermediary Buyer – This involves producing a unique product and selling it to an intermediary in the supply chain as an ingredient or component of another product. The final product may or may not be a differentiated product in the consumer’s eyes. It takes hard work, commitment and time to build a market for the product, even when selling to intermediaries. Although intermediaries may initially show interest in the product, they usually will not start buying product until it has been proven in the marketplace. This is especially true if your product has different characteristics and attributes than the ingredient or component the buyer is currently purchasing.

ROLE OF PROMOTIONS

The following are the four main roles of promotion

1. **Build awareness-** Making your target audience aware of your products and services. You must identify your target audience, your promotional marketing messages, and your outreach strategies.
2. **Foster interests-** Gaining their interests in your business. It requires a well-designed content marketing strategy to provide enough information for lead nurturing, and show uniqueness for differentiation from competitors.
3. **Generate demand-** Making your products and services desirable. You can share great features and benefits and create an emotional connection with your prospect.
4. **Induce prospects to take action-** Placing a call-to-action for your target to easily engage and find the next steps. Anywhere you can position to drive conversions, such as your website, digital advertising, and social media. It will help you to establish a stronger relationship and cultivate the repeated customer to stay longer with you.

THE PROMOTIONAL MIX

In the promotional mix there are six Major Elements

Figure: Elements of the Promotional Mix



ADVERTISING

Advertising is one of the best known and most discussed form of promotional mix.

Advertising is very important tools for companies whose products and services are targeted at mass consumer markets. Advertising is the most cost effective for the company to reach large audiences. Advertising is “any paid form of non-personal communication of ideas or products in the prime media, i.e., television, the press, outdoor, cinema and radio.” The nature and purposes of advertising differ from one industry to another and across the situation of the market. TV, Radio and Newspaper are the most useable channels in the world for promotion of product and service. Banner, festoon, and billboard also could be very effective medium of advertisement. For location or in area-based advertisement, a company can hang banner and festoon in busy areas or such a location that is easily viewable for maximum customers. In various occasion they can announce different offer through banner and festoon. Billboard can be best fit in some busy or linkages road in the city where mass people can see and get information about service and company.

DIRECT MARKETING

In recent years direct marketing one of the major components of the promotional mix. Direct marketing is used to target the consumers and influence them to get response quickly. Through using direct marketing techniques, marketers can gain and keep customer without the use an intermediary. Direct marketing is a valuable tool for service and product marketing where immediate response is required and in mass competitive market.



Direct mail: information sent through postal service to recipient's address for promote a product or service or to keep an ongoing relationships. Quality of the mailing list is one of the key factors for effectiveness of direct mail. Direct mail is also one of the cost effective way to communicate with present and potential consumers.

Telemarketing; becomes more effective if other direct response media can combined. For example, one experience shows, when telemarketing is combined with direct mail then usually minimum 10 percent response increase- often a lot. Direct response advertising includes the prime media like; television, newspapers and magazines.

Direct advertising; is designed to obtain a direct response such as an order, enquiry or request for a visit. Sale of products through catalogues distributed to agents and customers, usually by mail is called catalogue marketing. Catalogue marketing helps consumers to take decision after discussion with their family members in relax time and avoid crowd shops and streets.

In mobile advertising; "Short messaging services" (SMS) is most effective buzz-phrase business-to-consumer markets. Many companies add text message numbers to capture the interest of the consumers through their marketing messages. Mobile advertising is using to enhance customer relationships and to carry out the direct marketing and promotional activities.

Electronic media; includes television, internet, e-mail and radio. In direct marketing response appeal on TV and radio is great than other media. Inserts marketing includes leaflets in magazines and in newspaper.

Door-to-door leafleting; means physical visit to the end consumers with leaflet to express about products and services and as well as this is easiest way to convince them to purchase service or products.

Interactive / Internet Marketing- One of the newest forms of direct marketing is internet marketing. The internet provides opportunity for both consumers and marketers to interact more and individualization. This is two way communication channels marketing where consumers can reply after receiving the message from marketers.

Advertising on the Internet

Banners: The most familiar form of advertising on web is banner ads. Banner ads generally used for creating awareness, entering viewers into contests and sweepstakes.

Sponsorships: Sponsorship are divided in regular sponsorships where a company pays to sponsor a section of a site and another is the content sponsorship, in which sponsor not only provides money in return for name association but participates in providing the content itself.

Pop-Ups/Pop-Under: This ad is almost similar to banner ads but here user will see some ads when consumer access some sites. Pop-Unders are ads appear underneath the web page and visible when user leaves the sites.

Interstitials: Interstitials are ads that appear on screen while user waiting for site's content to download.

Push Technologies: Marketers use web casting or push technologies for dispatch web pages and news updates and video geared to specific audiences or individuals.

Links: Links appears when users search specific links then automatically provide users additional links or related topics.

Paid Search: Marketers paid for each consumer's clicks on their ads or links from a search engine page.

Behavioral Targeting: Marketers use behavioral targeting advertising for target consumers through their web site surfing behaviors.

Contextual Ads: Advertisers who target their ads based on the content of the web page are using.

Rich Media: A broad range of interactive digital that exhibit dynamic motion, taking advantage of enhanced sensory features such as video, audio and animation. Online commercials, video on demand and webisodes are the main types of rich media. The increased penetration of broadband into households has increased the attention given to streaming video.

SALES PROMOTION

Sales promotion is one type of stimulus that provides an extra incentive to buy product or service. Sales promotion can be defined as “a direct inducement that offers an extra value or incentive for the product to the sales force, distributors, or the ultimate consumer with the primary objective of creating an immediate sale.” Sales promotion is designed to speed up the selling process and create maximize sales volume through providing extra incentives.



Consumer-oriented advertising encourage consumers to purchase specific brand and create demand for it like pull strategy, but on the other hands trade-oriented sales advertising motivate wholesalers and retailers to push the customers to carry a product or service .Sales promotion techniques are designed to produce outcome quickly as a result accelerates the selling process and brings maximizes sales.

PUBLICITY/PUBLIC RELATION

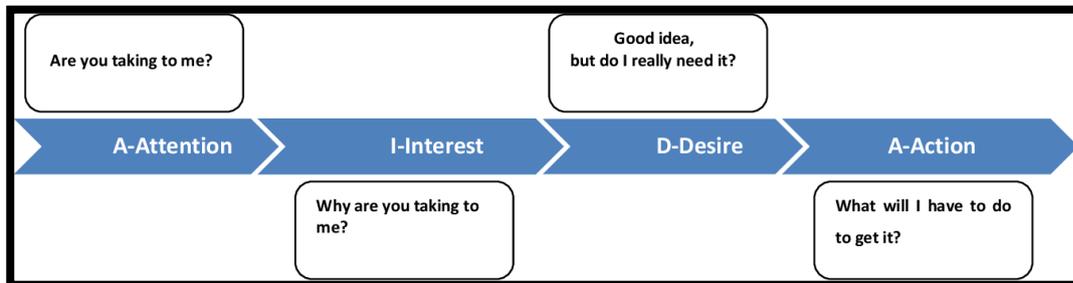
Public relation is concerned with people’s attitudes toward the firm or specific issues and designed to sell a product or service and help marketing activities. Public relation activities include raising awareness, informing and educating, gaining understanding, building trust, giving consumers a reason to buy, and motivation consumer acceptance. Publicity is a subset of the public relations. “Publicity refers to the generation of news about a person, product, or service that appears in broadcast or print media”. Publicity materials include publications, events, news, speeches, public-service activities and identity media. Publications include annual report, brochures, articles, company newsletters and magazines. In events company can advertise through news conference and any sports and cultural sponsorships that will reach target audience. News can be useful for company to inform the potential customers about service and product through press release and press conference.

PERSONAL SELLING

Personal sales promotion is would be more effective promotional tools for mass consumer markets like; home broadband internet consumer market. In personal selling, sales persons are directly involved with potential buyer and get feedback swiftly. In broadband home internet market it is very important for sales person to explain the company’s service according to the customer’s specific requirements. Personal selling is a process of person-to-person communication. In personal selling, company promotes their products directly to consumers through advertising and promotions or indirectly through resellers or salespeople. In personal direct selling, representatives can present the product or service to the customer, they can convinces the customer through showing the service value, and last if successful, they close the sales.

BUYING PROCESS

It is important for company to investigate how advertising and then promotion will work to bring sales from these activities. “The first important idea about how advertising works was based on how the personal selling process works”. The AIDA model is one of the very famous and effective marketing and sales model used by many advertisers. AIDA model act as a buying process of a product, from the customer’s point of view in four steps. The AIDA model is a progressive way of dividing the fact of purchasing into four levels, and advertising is an external way to lead the customer from one step to another.



In level A; marketer have to create Attention of the existence of a product or services, in level I; marketer have to make Interest in paying attention to the product’s benefits, in level D; marketer have to create Desire for the product or service through promotional message and in level A; marketer need to go into Action, that is buying of the product or service. AIDA model describes about level of purchase awareness of a customer for a product or service. The salesman has to lead the customer from one level to next level of the model, that is to say to conduct the purchase following the four AIDA stages:

1. Make customers aware of a product existence,
2. Interest them in order to get their attention to the products, features & their benefits,
3. Produce the desire to benefit from the products offering and,
4. Finally get the act of purchase.

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INDIA'S DIGITALIZATION: TRENDS AND CHALLENGES SHAPING THE FUTURE

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ABSTRACT

The rapid advancement of digital technologies has brought about transformative changes across various sectors in India. Digitalization in India has witnessed remarkable growth and transformation over the past few years, influencing various aspects of the economy and society. This abstract provides a concise overview of the prevailing trends and challenges of digitalization in the country. The trends highlight the increased internet penetration, the rapid growth of e-commerce and digital payments, the adoption of e-governance, and the rise of digital education and healthcare. Additionally, the integration of artificial intelligence and automation is driving efficiency across sectors. However, the digitalization journey faces significant challenges, including the digital divide, data privacy, technological infrastructure, digital literacy, regulatory frameworks, cyber security, and cultural shifts. Addressing these challenges is crucial for ensuring that digitalization delivers inclusive and sustainable development, fostering a digitally empowered nation. As India navigates the digital era, striking a balance between seizing opportunities and overcoming obstacles is essential for unlocking the full potential of digitalization and shaping a prosperous future.

Keywords: Digitalization, Economic Growth, Governance, Security, Indian Economy

INTRODUCTION

Digitalization has emerged as a transformative force in recent decades, revolutionizing economies and societies worldwide. In India, a country renowned for its rich cultural heritage and diversity, digital technologies have triggered a profound paradigm shift in socioeconomic development. The rapid expansion of the digital ecosystem, driven by the proliferation of the internet, mobile devices, and innovative digital solutions, has redefined how businesses operate, how individuals access services, and how governance is conducted. The digital revolution has permeated every aspect of Indian society, redefining the way people connect, businesses operate, and the government interacts with its citizens. The widespread availability of affordable smartphones, coupled with affordable data plans, has democratized access to digital services, creating a digitally connected population like never before.



The Growth of Digitalization in India: Over the past few decades, India has witnessed a remarkable surge in the adoption of digital technologies. With a population exceeding 1.3 billion and a burgeoning middle class, the country offers a vast market for digital products and services. The advent of affordable smartphones and the subsequent increase in internet penetration have played a pivotal role in fostering digital inclusion, connecting millions of previously unconnected citizens to the digital realm.

Digitalization and Economic Growth: Digitalization has catalysed significant transformations in the Indian economy. The rise of e-commerce and digital marketplaces has revolutionized the way goods and services are bought and sold, offering consumers unprecedented convenience and choice. The integration of digital payment systems has facilitated financial inclusion, empowering the unbanked population and stimulating economic transactions. Additionally, India's vibrant start-up ecosystem, fuelled by digital innovation, has contributed to job creation, technological advancements, and increased investor confidence.

Digitalization and Education: Education, being a cornerstone of development, has experienced a substantial shift due to digitalization. E-learning platforms and online educational resources have democratized access to quality education, transcending geographical barriers and reaching students in the country's remotest corners. Digital tools have also facilitated skill development and vocational training, equipping the workforce with the competencies required for a rapidly evolving job market.

Digitalization and Healthcare: The healthcare sector in India has undergone a revolutionary transformation with the advent of digital technologies. Telemedicine and remote healthcare services have made healthcare more accessible and affordable, particularly for those residing in rural and underserved areas. Health information management systems have streamlined medical records and improved patient care. Furthermore, digital initiatives have been instrumental in raising health awareness and encouraging positive behaviour changes, leading to better public health outcomes.

Digitalization and Governance: Digitalization has brought transparency, efficiency, and citizen-centricity to governance in India. E-governance initiatives have streamlined service delivery, reducing bureaucratic inefficiencies and enhancing public service accessibility. The implementation of the Aadhaar initiative, a unique digital identification system, has facilitated the seamless delivery of social welfare benefits to the deserving population. However, concerns regarding data security and privacy have also emerged, necessitating robust regulatory frameworks.

Digitalization and Societal Behavior: The influence of digitalization on societal behavior in India is palpable. The pervasive presence of social media platforms has transformed the way individuals interact, share information, and engage in discourse. Digital activism and social movements have gained momentum, providing a platform for citizens to voice their opinions and advocate for social causes. Simultaneously, the increasing reliance on digital platforms has raised questions about the impact on traditional cultural practices and societal values.



TRENDS OF DIGITALIZATION IN INDIA

Increased Internet Penetration: India has witnessed a significant increase in Internet penetration, primarily driven by the widespread availability of affordable smartphones and data plans. The proliferation of the internet has enabled more people to access digital services and participate in the digital economy.

Rapid Growth of E-Commerce: The rise of e-commerce platforms has transformed the way Indians shop and conduct business. Online shopping has become increasingly popular, with a surge in digital payments and the emergence of numerous online marketplaces.

Digital Payments and FinTech Innovation: The government's push for digital payments, coupled with the growth of FinTech startups, has led to a surge in digital transactions. Mobile wallets, UPI (Unified Payments Interface), and other digital payment methods have gained widespread adoption, reducing reliance on cash.

E-Governance and Digital Services: The Indian government has embraced e-governance initiatives to improve service delivery and streamline administrative processes. Digital platforms allow citizens to access government services online, reducing paperwork and bureaucratic delays.

Digital Education and E-Learning: Digitalization has revolutionized education in India, with the emergence of e-learning platforms and online educational resources. Distance learning and virtual classrooms have become essential components of the education system.

Telemedicine and Healthcare Technology: Digital health solutions, including telemedicine platforms and health apps, have enhanced healthcare accessibility and affordability. Remote consultations and digitized medical records are transforming the healthcare landscape.

Artificial Intelligence and Automation: India has seen an increasing integration of artificial intelligence (AI) and automation in various sectors, from customer service to manufacturing. AI-powered chatbots, robotic process automation, and machine learning algorithms are being deployed to optimize processes and improve efficiency.

CHALLENGES OF DIGITALIZATION IN INDIA

Digital Divide: One of the most significant challenges is the digital divide, with unequal access to digital technologies and the Internet across urban and rural areas. The rural population, in particular, faces barriers to adopting digital services due to inadequate infrastructure and limited digital literacy.

Data Privacy and Cyber security: With the increasing digitization, there is a growing concern about data privacy and cyber security. Cyber threats, data breaches, and privacy violations pose significant risks to individuals, businesses, and the government.

Technological Infrastructure: The availability of reliable and high-speed internet connectivity remains a challenge in some regions of India. Improving technological infrastructure, including internet connectivity, is crucial to ensuring broader digital inclusion.

Digital Literacy and Skills Gap: While digitalization presents numerous opportunities, a lack of digital literacy and skills among a significant portion of the population hinders its full potential. Bridging the digital skills gap is essential to empower individuals to participate effectively in the digital economy.

Regulatory and Policy Frameworks: The rapidly evolving nature of digital technologies often outpaces existing regulatory and policy frameworks. Developing and implementing effective and adaptable regulations is necessary to ensure a conducive environment for digital growth while safeguarding consumer rights and data privacy.

Digital Security and Fraud: As digital transactions increase, so does the risk of cyber fraud and online scams. Building robust digital security measures and raising awareness among users about safe digital practices are critical to combat such threats.

Digital Infrastructure Cost: The cost of setting up and maintaining digital infrastructure can be prohibitive for smaller businesses and rural communities. Reducing the cost of access to digital services is vital for promoting inclusive digitalization.

Cultural and Behavioural Shifts: While digitalization offers numerous benefits, there may be resistance and challenges associated with behavioural and cultural shifts. Some traditional practices and mind-sets might need to adapt to the changing digital landscape.

CONCLUSION

India's digitalization is an on-going journey that has witnessed significant progress and transformation across various sectors. The trends of increased internet penetration, the rapid growth of e-commerce and digital

payments, the adoption of e-governance, digital education, healthcare, and the integration of artificial intelligence underscore the country's determination to embrace the digital revolution.

However, this digital transformation is not without challenges. The digital divide remains a critical concern, hindering the equitable distribution of digital benefits across the population. Addressing data privacy and cyber security risks is imperative to safeguard individuals and organizations in an increasingly interconnected world. Moreover, improving technological infrastructure and promoting digital literacy is essential for empowering all citizens to participate effectively in the digital economy.

Regulatory and policy frameworks need to adapt quickly to keep pace with technological advancements while ensuring consumer protection and fair competition. Additionally, cultural and behavioral shifts may be required to fully embrace the potential of digitalization without compromising on traditional values and practices.

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