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Two Day National Seminar on "Digital India: Future Prospects for Global Era"

FOREWORD

Digital India is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. The programme was launched on July 1, 2015 by Hon'ble Prime Minister Shri Narendra Modi.

It's the 75th year of India's independence, and as we sit back to reflect on what is Digital India and what is unique in this journey, for us it is the transformation of lives and livelihoods that we are seeing at the grassroots, powered by technology and the ingenuity of India's innovation ecosystem. And enabling the same is a quiet revolution that is at the heart of India's transformation into Digital India—India's 'platformization' story, that is, how the country has built one of the world's most robust and comprehensive digital public-good platforms as the foundation of Digital India.

With more than half a billion internet subscribers, India is one of the largest and fastest- growing markets for digital consumers, but adoption is uneven among businesses. As digital capabilities improve and connectivity becomes omnipresent, technology is poised to quickly and radically change nearly every sector of India's economy. That is likely to both create significant economic value and change the nature of work for tens of millions of Indians.

India's platformization strategy has quietly begun to impact each and every one of our lives. It is the highway on which Digital India runs. And with over 20 platforms impacting over a billion lives, India is truly leading the world on building the substratum for a strong and scalable digitaleconomy.

I would like to congratulate the Department of Management, Karnataka State Akkamahadevi Women's University, Vijayapura for organizing Two Day National Seminar on "Digital India: Future Prospects in Global Era" sponsored by ICSSR, New Delhi on 25 and 26th May 2023 and would like to thank ICSSR, New Delhi for sponsoring this Seminar.

The collection of papers for this seminar would lead to a better vision, a better understanding of newer approaches and challenges to Digital India and the seminar is designed to cater to the needs of students, scholars, teachers, academic administrators, industrialist and policy makersto achieve the goal of Digital India.

(Prof. B. K. Tulasimala)
Vice Chancellor, KSAWU, Vijayapura.

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A Global Crisis; Women's Saftey Around The World

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Abstract

Gender-based violence is a global crisis affecting women's safety around the world. According to the United Nations, one in three women worldwide experience physical or sexual violence in their lifetime, with rates even higher in some regions. The COVID-19 pandemic has further exacerbated this issue, with lockdowns and social distancing measures leading to a surge in domestic violence incidents. Additionally, women who are marginalized due to factors such as race, ethnicity, sexual orientation, and socioeconomic status are at even greater risk of experiencing violence.

Addressing this crisis requires a comprehensive approach that includes policy and legal reforms, community engagement, education and awareness-raising, and support services for survivors. Governments must prioritize the allocation of resources to address gender-based violence and hold perpetrators accountable for their actions. Communities must challenge harmful attitudes and beliefs that perpetuate violence against women and support survivors through accessible and culturally appropriate services. Ultimately, creating a world where women can live free from violence requires a collective effort from individuals, organizations, and governments around the world Gender-based violence

Key Words; gender inequality, sexual harassment, rape culture, domestic violence, victim blaming, human trafficking, online harassment, empowerment of women, law enforcement response, community support, education and awareness.

Objective1:RaiseAwareness

The first objective of an article related to a global crisis in women's safety would be to raise awareness about the issue. This can be done by providing statistics and data about violence against women, particularly in different countries or regions around the world. The article should aim to inform readers about the severity and prevalence of the problem, and highlight the urgent need for action.An article about a global crisis in women's safety should also offer solutions and recommendations for how to address the issue. This could include highlighting successful programs and policies that have been implemented in different countries, or suggesting new approaches that could be adopted. The article should aim to inspire readers to take action, whether through personal advocacy or by supporting organizations that are working to combat violence against women.

Objective 2: Identify Root Causes

Another important objective of the article would be to identify the root causes of violence against women. This could include examining cultural attitudes and beliefs that perpetuate gender inequality and discrimination, as well as economic and political factors that contribute to the problem. By understanding the underlying causes of violence against women, readers can gain a deeper understanding of the complexity of the issue and what needs to be addressed to combat it.

Objective 3: Offer Solutions

An article about a global crisis in women's safety should also offer solutions and recommendations for how to address the issue. This could include highlighting successful programs and policies that have been implemented in different countries, or suggesting new approaches that could be adopted. The article should aim to inspire readers to take action, whether through

personal advocacy or by supporting organizations that are working to combat violence against women

Objective 4: Empower Women

Finally, the article should aim to empower women by giving them the tools and resources they need to protect themselves and advocate for their rights. This could include information about self-defense classes, legal resources, and support networks for survivors of violence. By empowering women to take control of their own safety and well-being, the article can help to create a sense of agency and empowerment that can help to combat the Here are some recommended books and articles related to the global crisis of women's safety around the world:

Section 1: Global Crisis and Its Impact on Women's Safety

1. Explain how a global crisis, such as the COVID-19 pandemic, has affected women's safety around the world.
2. Discuss the increase in domestic violence cases due to lockdowns and social distancing measures.
3. Highlight the challenges faced by women who are unable to leave abusive relationships or report abuse to authorities.

Section 2: Women's Safety in Developing Countries

1. Discuss the specific challenges faced by women in developing countries during a global crisis.
2. Highlight the lack of access to healthcare and support services for survivors of domestic violence in these countries.
3. Discuss the impact of poverty and economic instability on women's safety and their ability to leave abusive relationships.

Section 3: Women's Safety in Developed Countries

1. Discuss the impact of a global crisis on women's safety in developed countries.
2. Highlight the increase in cyberstalking and online harassment during the pandemic.
3. Discuss the challenges faced by women who work in essential services and their increased risk of exposure to the virus.

Section 4: Government Response and Support Services

1. Discuss the role of governments in addressing the issue of women's safety during a global crisis.
2. Highlight the need for increased funding for support services and domestic violence hotlines.
3. Discuss the importance of government policies and programs that aim to prevent violence against women.

Section 5: Conclusion and Call to Action

1. Summarize the main points of the article.
2. Highlight the need for a collective effort to address the issue of women's safety during a global crisis.
3. Call for increased awareness, funding, and support for programs that aim to prevent violence against women. Women's safety is not just an issue in developing countries; it is a problem that affects women everywhere, including in developed countries. The #MeToo movement that began in the United States in 2017 shed light on the pervasive nature of sexual harassment and assault in the workplace, leading to a global conversation about the issue.

The lack of safety for women and girls also has significant economic implications. According to a report by the World Bank, gender-based violence costs the global economy over $1 trillion annually. Women who experience violence are more likely to miss work, have lower productivity, and experience mental health issues, resulting in economic losses for both individuals and society as a whole. To address this global crisis, there is a need for comprehensive and coordinated efforts from governments, civil society, and the private sector. This includes implementing laws and policies that protect women and girls from violence, ensuring that perpetrators are held accountable, providing support services for survivors, and promoting gender equality and women's empowerment.

In conclusion, the issue of women's safety around the world is a critical global crisis that needs urgent attention. The pandemic has further highlighted the urgent need for action, and it is essential to address the root causes of violence against women and girls to ensure a safer and more equitable world for all.

Section 1: Global Crisis and Its Impact on Women's Safety

Explain how a global crisis, such as the COVID-19 pandemic, has affected women's safety around the world.

The COVID-19 pandemic has had a significant impact on women's safety

worldwide. Here are some of the ways in which the crisis has affected women's safety:

1. Increased risk of domestic violence: With the pandemic forcing people to stay at home, women who are living with abusive partners have been at a higher risk of experiencing domestic violence. In many cases, women have been unable to leave their homes to seek help, and the stress of the pandemic has exacerbated existing abusive situations.
2. Reduced access to support services: With lockdowns and social distancing measures in place, many support services for women who are experiencing violence, such as hotlines and shelters, have been disrupted or closed down. This has made it harder for women to seek help and find a safe place to go.
3. Economic insecurity: The pandemic has resulted in significant job losses and economic insecurity, with women often disproportionately affected. This can increase the risk of domestic violence and other forms of violence as women become more financially dependent on their partners or may resort to risky work or survival strategies.
4. Disproportionate impact on women in essential services: Women who work in essential services such as healthcare and retail have been at a higher risk of exposure to COVID-19, and this has had a significant impact on their physical and mental health.
5. Increased risk of online harassment and abuse: With more people spending time online during the pandemic, there has been a rise in online harassment and abuse, including sexist and misogynistic attacks on women.

Overall, the COVID-19 pandemic has had a significant impact on women's safety worldwide, highlighting the need for continued efforts to address gender-based violence and support women's rig Discuss the increase in domestic violence cases due to lockdowns and social distancing measures.

There are numerous challenges faced by women who are unable to leave abusive relationships or report abuse to authorities. Some of the key challenges are:

1. Fear of Retaliation: Women who are in abusive relationships may fear retaliation from their partners if they try to leave or report the abuse. They may worry that their partner will become more violent or seek revenge if they try to seek help.
2. Lack of Financial Independence: Women who are financially dependent on their abusive partner may find it difficult to leave the relationship, as they may not have the resources to support themselves and their children.
3. Social Stigma: Women who are victims of abuse may feel ashamed or embarrassed to talk about it, and may fear being judged or ostracized by their community or family.
4. Lack of Support: Women may lack support from their friends and family, who may not believe them or may be unwilling to get involved in the situation.
5. Legal Challenges: Women may face legal challenges, such as difficulty obtaining restraining orders or custody of their children, which can make it difficult to leave an abusive relationship.
6. Trauma and Psychological Effects: Women who have experienced abuse may suffer from trauma and psychological effects, such as depression, anxiety, and post-traumatic stress disorder (PTSD), which can make it difficult to leave the relationship or report the abuse.
7. Overall, women who are unable to leave abusive relationships or report abuse to authorities face numerous challenges, and may require a range of support services to help them overcome these challenges and break free from abusive relationships.

Section 2: Women's Safety in Developing Countries

Women in developing countries often face specific challenges during a global crisis, such as natural disasters, economic downturns, or pandemics. These challenges can stem from a variety of factors, including gender inequalities, poverty, limited access to education and healthcare, and discrimination.

Here are some of the specific challenges faced by women in developing countries during a global crisis:

1. Limited access to healthcare: Women in developing countries often have limited access to healthcare, which can be exacerbated during a crisis. They may struggle to access essential medical services, such as maternal health care, contraception, or treatment for chronic illnesses.

2. Increased burden of care: Women often bear the primary responsibility for caring for children, the elderly, and other vulnerable individuals in their families. During a crisis, this burden may increase significantly, as women may need to provide care for family members who are sick, or who have lost their jobs or businesses.
3. Economic insecurity: Women in developing countries often work in the informal sector, which makes them particularly vulnerable to economic shocks. During a crisis, they may lose their livelihoods, and struggle to provide for themselves and their families.
4. Gender-based violence: Gender-based violence is already a significant problem in many developing countries, and it can escalate during a crisis. Women may face increased risks of sexual and gender-based violence, including domestic violence, rape, and exploitation.
5. Limited access to education: Girls and women in developing countries often have limited access to education, which can be further restricted during a crisis. School closures can disproportionately affect girls, who may be expected to help with household chores or childcare instead of attending school.
6. Lack of representation: Women in developing countries may lack representation in decision-making processes, which can make it difficult to advocate for their needs during a crisis. This can result in policies and programs that do not fully address the specific challenges faced by women.

Overall, these challenges can have significant long-term impacts on women's health, economic status, and overall well-being. Addressing these challenges requires a multifaceted approach that takes into account the unique needs of women in developing countries. This may include increasing access to healthcare and education, providing economic support and resources, and addressing gender-based violence and discrimination.

In many developing countries, survivors of domestic violence often lack access to adequate health care and support services. This is due to a variety of factors, including insufficient funding for health care and social services, a lack of trained professionals, and cultural norms that stigmatize survivors of violence.

In many cases, survivors of domestic violence are unable to access medical care and support services because they cannot afford to pay for them. Health care systems in developing countries are often underfunded and understaffed, which means that there may not be enough trained professionals to provide services to survivors. Additionally, there may be a lack of awareness about the issue of domestic violence among health care providers, which can result in survivors not receiving appropriate care.

Cultural norms in many developing countries may also contribute to a lack of access to health care and support services for survivors of domestic violence. In some communities, there is a stigma attached to being a survivor of domestic violence, and victims may be ostracized or blamed for the abuse. This can make it difficult for survivors to seek help, as they may fear being shamed or rejected by their community.

Overall, the lack of access to health care and support services for survivors of domestic violence in developing countries is a significant issue that needs to be addressed. It is essential to ensure that survivors can access the care and support they need to heal from the trauma of domestic violence and rebuild their lives.

Poverty and economic instability can have a significant impact on women's safety and their ability to leave abusive relationships in developing countries. Here are some ways in which poverty and economic instability can affect women:

1. Limited access to resources: Women living in poverty may lack access to basic resources such as food, shelter, and healthcare. This can leave them more vulnerable to abuse as they may be reliant on their abusers for these necessities. Moreover, they may not have the financial means to leave an abusive relationship or seek legal assistance.
2. Lack of education and employment opportunities: Poverty and economic instability can limit women's access to education and employment opportunities. Women who are not educated or employed may feel trapped in abusive relationships as they may not have the skills or resources to support themselves and their children independently.

3. Cultural attitudes: In many developing countries, cultural attitudes towards women's roles and rights can also contribute to their vulnerability to abuse. Poverty and economic instability can reinforce these attitudes, making it more difficult for women to assert their rights and leave abusive relationships.
4. Limited access to justice: Women living in poverty may face barriers to accessing justice, including the high cost of legal services and corruption within the justice system. This can leave them feeling helpless and unable to seek legal protection or redress.
5. Lack of social support: Women who are living in poverty may also lack social support, which can exacerbate their isolation and vulnerability. Without supportive friends or family members, women may feel unable to leave abusive relationships or seek help.

Overall, poverty and economic instability can significantly impact women's safety and their ability to leave abusive relationships in developing countries. Addressing these issues requires a multi-faceted approach that includes improving access to resources, education and employment opportunities, addressing cultural attitudes towards women, and improving access to justice and social support.

Section 3: Women's Safety in Developed Countries

A global crisis can have a significant impact on women's safety in developed countries. There are several ways in which a crisis can exacerbate existing gender inequalities and increase the risk of violence against women.

1. Economic insecurity: During a crisis, many women may lose their jobs or face reduced hours and wages, which can increase their financial vulnerability. Economic insecurity can leave women trapped in abusive relationships and make them more vulnerable to exploitation and trafficking.
2. Increased caregiving responsibilities: During a crisis, women are often called upon to provide additional care for children, elderly family members, and those who are sick. This can limit their ability to work or leave the house, increasing their isolation and reducing their access to support networks.
3. Limited access to essential services: During a crisis, essential services like healthcare, emergency shelters, and legal aid may be limited or disrupted, leaving women without the support they need to escape violence or seek help.
4. Increased stress and tension: During a crisis, stress levels are often higher, and tensions can run high. This can increase the risk of domestic violence and exacerbate existing conflicts.
5. Reduced visibility: During a crisis, people may be confined to their homes or have limited opportunities to go out in public. This can make it more difficult for women to seek help or report violence.

In conclusion, a global crisis can have a significant impact on women's safety in developed countries, exacerbating existing gender inequalities and increasing the risk of violence against women. It is essential to ensure that women have access to essential services and support networks, as well as to address the root causes of gender inequality and violence against women.

there has been an increase in cyberstalking and online harassment during the pandemic, particularly in developed countries where internet usage is high. This is because people have been spending more time online due to lockdowns and restrictions on social gatherings.

Additionally, with the shift to remote work and online education, more personal information is being shared online, making individuals more vulnerable to cyber attacks. Cyberstalkers and harassers may take advantage of this increased vulnerability to target individuals with malicious intent. Moreover, the pandemic has created a stressful and uncertain environment for many individuals, which may lead to an increase in aggressive behavior, including cyberstalking and online harassment. To address this issue, it is important for individuals to take steps to protect their online privacy and security, such as using strong passwords, enabling two-factor authentication, and avoiding sharing personal information online. It is also important for online platforms to take responsibility for monitoring and preventing cyberstalking and harassment on their platforms. Women who work in essential services, such as healthcare, grocery stores, and public transportation, face significant challenges and increased risk of exposure to the virus in developed countries. Here are some of the challenges they face:

1. Lack of Personal Protective Equipment (PPE): In the early stages of the pandemic, there was a shortage of PPE, making it difficult for women working in essential services to protect themselves from the virus. This was particularly problematic for healthcare workers, who were at a higher risk of exposure due to their close contact with infected patients.
2. Increased Workload: Many essential workers, especially women, have had to work longer hours due to the increased demand for their services during the pandemic. This has resulted in physical and mental exhaustion, putting them at an even greater risk of contracting the virus.
3. Limited Access to Healthcare: Despite working in the healthcare sector, many women who work in essential services have limited access to healthcare for themselves and their families. This is especially true for those who are uninsured or underinsured, which puts them at a disadvantage when it comes to seeking medical care.
4. Lack of Paid Sick Leave: Many essential workers, including women, do not have access to paid sick leave. This means that if they become ill, they may have to choose between going to work and risking infecting others or staying home and losing their income.
5. Increased Risk of Exposure During Commute: Women who work in essential services, particularly those who rely on public transportation, face an increased risk of exposure to the virus during their commute to work. This is especially true for those who live in densely populated areas.Overall, women who work in essential services face significant challenges and increased risk of exposure to the virus in developed countries. It is important to recognize their contributions.

Section 4: Government Response and Support Services

The issue of women's safety during a global crisis is an important one that governments must address. Here are some of the ways that governments can play a role in addressing this issue:

1. Increasing awareness: Governments can use various channels to create awareness about women's safety during a crisis. They can run campaigns on TV, radio, and social media to educate women on the steps they can take to protect themselves.
2. Providing support services: Governments can provide support services to women who have been affected by the crisis. This can include hotlines, counseling services, and shelters for women who need a safe place to stay.
3. Strengthening laws: Governments can strengthen laws that protect women from violence and harassment. This can include harsher penalties for perpetrators of violence and improved legal protections for victims.
4. Ensuring access to essential services: During a crisis, essential services such as healthcare, food, and water can become limited. Governments can ensure that women have access to these services and that they are not excluded from receiving them due to their gender.
5. Engaging with women's groups: Governments can engage with women's groups to understand the challenges faced by women during a crisis and to work collaboratively to find solutions.

In summary, governments have a critical role to play in addressing the issue of women's safety during a global crisis. By raising awareness, providing support services, strengthening laws, ensuring access to essential services, and engaging with women's groups, governments can help to protect women from violence and ensure that they are not left behind during times of crisis. The need for increased funding for support services and domestic violence hotlines is critical, as these resources play a vital role in addressing the widespread issue of domestic violence. Firstly, increased funding can ensure that support services are adequately staffed with trained professionals who can provide essential support to survivors of domestic violence. These professionals can offer emotional support, safety planning, and practical assistance to help survivors navigate the complex and often traumatic experience of domestic violence. Secondly, domestic violence hotlines provide a critical lifeline for survivors who may not have access to other forms of support. Increased funding can help to ensure that these hotlines are staffed 24/7, and that survivors can receive immediate assistance when they need it most. Thirdly, domestic violence has been shown to have far-reaching economic

impacts on both individuals and society as a whole. Increased funding for support services and hotlines can help to mitigate these costs by reducing the long-term effects of domestic violence on survivors and their families. Finally, increased funding for these services sends a powerful message to survivors that their experiences are taken seriously and that they are not alone in their struggle. By investing in these resources, we can help to create a safer and more supportive environment for all those affected by domestic violence.Etter Preventing violence against women is crucial for building a society that is safe, equitable, and just. Government policies and programs that aim to prevent violence against women are essential because they can create a framework for addressing this issue comprehensively and effectively.

Here are some of the reasons why such policies and programs are important:

1. Protecting human rights: Violence against women is a violation of human rights. By implementing policies and programs to prevent violence against women, governments can help protect the rights of women to live free from violence and abuse.
2. Promoting gender equality: Violence against women is often rooted in gender inequality, where women are viewed as inferior to men. Government policies and programs that aim to prevent violence against women can promote gender equality and challenge societal attitudes that perpetuate violence.
3. Creating a safer society: Violence against women has a ripple effect on society, including on the physical and mental health of survivors, families, and communities. By preventing violence against women, governments can help create a safer society for all.
4. Encouraging reporting and accountability: Many victims of violence do not report their experiences due to fear or shame. Government policies and programs that encourage reporting and hold perpetrators accountable can help break the cycle of violence and promote justice for survivors.
5. Supporting survivors: Survivors of violence require comprehensive support services to heal and rebuild their lives. Government policies and programs that provide access to counseling, legal aid, and other support services can help survivors regain control of their lives.
6. Overall, government policies and programs that aim to prevent violence against women are crucial for The issue of women's safety around the world is a complex and multifaceted global crisis that affects millions of women every day. Some of the main points related to this crisis are:
7. Violence against women is a global epidemic: Women across the world are subjected to physical, sexual, emotional, and economic violence, both in public and private spaces. This violence can take many forms, including domestic violence, sexual harassment, rape, female genital mutilation, and honor killings.
8. Women face unique safety challenges: Women face unique safety challenges due to gender-based discrimination and stereotypes, lack of access to resources and services, and cultural and societal norms that perpetuate violence against women. These challenges are often compounded for women who belong to marginalized communities, such as women with disabilities, indigenous women, and women living in poverty.
9. The impact of the COVID-19 pandemic on women's safety: The COVID-19 pandemic has exacerbated existing challenges for women's safety around the world. Lockdowns and movement restrictions have increased women's isolation and exposure to violence, while disrupting support services and access to justice.
10. The need for a comprehensive and multi-sectoral response: Addressing the crisis of women's safety requires a comprehensive and multi-sectoral response that includes prevention, protection, and support services. This response should be grounded in a human rights approach that recognizes the dignity and agency of women.
11. The importance of gender equality: Achieving gender equality is critical for addressing the crisis of women's safety. This includes addressing structural inequalities and discrimination, promoting women's leadership and participation, and addressing harmful gender norms and stereotypes .

Section 5: Conclusion and Call to Action

The issue of women's safety during a global crisis is a pressing concern that

requires a collective effort from all stakeholders. In times of crisis, such as natural disasters, pandemics, or conflicts, women and girls are particularly vulnerable to various forms of violence, including domestic violence, sexual violence, and exploitation.There are several reasons why a collective effort is essential to address this issue. Firstly, women's safety is a fundamental human right, and it is the responsibility of the government, civil society, and the community as a whole to ensure that this right is upheld, protected, and promoted. Secondly, the consequences of gender-based violence can be severe and long-lasting, affecting not only the victim but also their families and communities. The economic, social, and psychological impact of violence can be devastating, exacerbating poverty and inequality.

Thirdly, addressing women's safety during a global crisis requires a multi-sectoral approach that involves multiple stakeholders. This includes government agencies, civil society organizations, international organizations, community leaders, and individuals. Each of these actors has a role to play in addressing the issue, from prevention and response to providing support and services to survivors.Finally, a collective effort is crucial because the issue of women's safety is complex and multifaceted. It requires a range of interventions, including awareness-raising, education, policy development, legal reform, and service provision. To be effective, these interventions must be coordinated, integrated, and sustained over time.In conclusion, the issue of women's safety during a global crisis is a critical concern that requires a collective effort from all stakeholders. It is only through a collaborative and coordinated approach that we can prevent violence, protect survivors, and promote gender equality and social justice.

Conculision ; The global crisis of women's safety is a complex issue that requires a multifaceted approach to address. While progress has been made in some areas, such as increased awareness and advocacy efforts, there is still a long way to go in terms of implementing effective solutions.One key area that requires attention is the need for comprehensive legislation and policy frameworks to protect women from violence and discrimination. This should include measures to address gender-based violence, harassment, and discrimination in the workplace, and to ensure access to justice and support services for survivors.Another critical component of addressing this crisis is to address the root causes of gender inequality, including social and cultural norms that perpetuate violence and discrimination against women. This requires a concerted effort to promote gender equality and empower women and girls, through education, economic opportunities, and political participation.Finally, it is crucial to engage men and boys in the efforts to promote women's safety and gender equality. This includes challenging harmful attitudes and behaviors, promoting positive masculinity, and creating safe spaces for men and boys to participate in discussions and initiatives aimed at ending violence against women.

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Digital Agriculture: The Case for Increasing Farmer's Income in Indian Agriculture

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Abstract

As a source of livelihood agriculture remains the largest sector of Indian economy. It provides employment to 58.2 % of the population. The social transformation of the country and the economic growth depends on the formers. This paper explores the digitalisation of Indian agriculture to create value for the farming community and increase the opportunities to increasing farmer's income level. It highlights the application of different digital technologies to increase farm yield, improve farm-level decision –making, maximise resource use efficiency, and ultimately enhance the incomes of smallholder farmers. The agriculture sector, currently valued at US$ 370 billion, is one of the major sectors in the Indian economy. According to the Economic Survey 2020-21, GDP contribution by the agriculture sector is likely to be 19.9 % in 2020-21, increasing from 17.8% recorded in 2019-20. Over the years, the government has taken major steps to aid and enhance the agriculture sector with proven farming technologies and supportive policies. Digital technologies, such as artificial intelligence (AI) and machine learning (ML). Remote sensing, big data chain these are transforming agricultural value chains and modernizing operations. The future adoption of digital agriculture in India is anticipated to nurture under the public Private Partnership (PPP) mode. It is an analytical paper based on a survey of literature that utilises secondary sources such as books, research papers, and policy documents, reports published by various government and non-government organisations, online databases. The paper suggests that policymakers focus on increasing the farmer's income through different stage of food production and supply chain.

Keywords: Agriculture, Digital Technologies, Increasing farmer's income, Public Policy, GDP

Introduction

Agriculture has been the oldest and most labour-intensive profession. An estimate projects that there will be a 50 per cent increase in food requirements due to the addition of new 2 billion people on earth by 2050. The Indian food supply chain faces unprecedented shocks at stage, beginning from pre-production and production to post-production (department of Agriculture and Farmers Welfare, 2021). The unfavourable changes in crop or sudden pest attacks due to climate change force farmers to increase the use of pesticides. These chemical fertilisers ultimately lead to environmental degradation and a high cost of production. Agriculture has therefore become the policy issue for policymakers to ponder and frame policies to make it more sustainable. There are three critical challenges before the policymakers. One is to make farming a remunerative profession, the second one is to ensure food security to citizens, and the third one is to increase the resilience of food production and supply chain to withstand the disruptive situation. The demand for digitisation in Indian agriculture is well understood and acknowledged; likewise efforts have been made towards digitising the prevailing value chain.

Review of Literature:

1. **Kaur and Sharma (2012)** study on "Fertilizer subsidy and agricultural production: A study of India". This paper concluded that the central government should implement some agricultural subsidies policy and states on the sours of gross cropped or productivity. They suggested that subsidies are a direct relationship with yield and income like a seed, fertilizers should be given more income to farmers, Punjab hold an electricity subsidies program to decrease state electricity burden and this income can be used for the production of more electricity, that area peoples are reducing the purchasing electricity at the very high cast, which adds to the insufficiency of state finance.
2. **Liliana, Cipoies (2020)** as discussed in their work "The Economic Impact of farm subsidies

in Moldova's Agricultural sector development''. Governmental support is necessary to achieve and maintain the farm's economic performance, which in the long run is the key to its sustainable development. The agricultural subsidizing policy is an important mechanism from beginning to end that the government can support in this sector. This paper aims to analyze the allotment and structure of governmental subsidies funds in Moldova during 2010-2018 and whether it is possible to the development of the agricultural sector. The agricultural subsidizing policy is Avery important mechanism from start to end which the government can support this sector. Agricultural activity was forever related to risk uncertainty. This is the main cause of exposure to natural factors, various problems', farmers' incomes are uncertain, price unsuitability and fluctuations in production rates. That's ways very important tools to support the farmer's activities are subsidies and farmers' increased profit from their production.

3. **Sanjeev Kumar (2020)** work on "Impact of Subsidies on Agriculture Sector in India". In this paper Agriculture is a very impotent role in the Indian Economy. About 55% of the rural area peoples depend on the agriculture sector. In this through people earning income. Agriculture sectors income is about 18% to the country GDP (sine's 2019-2020). The Indian government realized many programs because the government played a vital role in the development of the agricultural sector. The new technologies machinery to increase the agricultural food production in the country, but it is not possible because modern technology is very expensive and Indian farmers very poor, they cannot buy these expensive inputs. That's why the government provided particular subsidies and they used to sport smallholder farmers' use of inputs, to increase production, reduce food prices and develop economic growth. For several years the government has been providing input subsidies to the agriculture sector. Government is support farmers direct and indirect to encourage agricultural food production.

Objectives

1. To study the agriculture sector.
2. Impact of appearance the digital technology in agriculture.
3. To examine the digital system to boost at farmers income and increase GDP.

Methodologies

The research paper is adopted secondary method. This paper analyses the scope of application of advanced digital technologies in agriculture. Information involves a review of policy initiative by the GOI and finding policy gaps in the process of digitalisation of agriculture. This paper suggested the principles to integrate digital technologies in the agri-food system for maximising the impact of digitalisation to enhance farmer's income.

Future of Digital Agriculture in India

a. Application of Digital Agriculture

Technological intervention based on remote sensing, soil sensors, unmanned aerial surveying and market insights, etc, permit farmers to gather, visualise and asses crop and soil health conditions at different stage of production in a convenient and cost-effective approach. They can act as an initial indicator to identify potential challenges and provide option to deal with them in a timely manner.

Artificial intelligence/ machine learning algorithms can generate real-time actionable insights to help improve crop yield, control pests, assist in soil screening, provide actionable data for farmers and reduce their workload.

Block chain technology offers tamper-proof and precise data about farms, inventories, quick and secure transaction and food tracking. Thus, farmers don't have to be dependent on paper work or files to record and store important data.

b. Benefits of Digital Agriculture

1. Increases agriculture productivity and lowers production cost
2. Inhibits soil degradation
3. Lessens chemical application in crop production
4. Promotes effective and efficient use of water resources
5. Uplifts socio-economic statuses of farmers
6. Reduces environmental and ecological impacts
7. Augments worker safety

Implementation of Digital Agriculture in India

The main object of this paper acceptance of digital farming in India is the prominence of segregated small-holder farms in the country, this complicates data gathering. Additionally, limited penetration of mechanisation tools and frequent natural calamities, like droughts, floods and excessive monsoon rains; have negatively impact the deployment of digital solutions in the sector. Thus, a customised approach would be needed to implement digital agriculture to a typical Indian small farm, this can be later be scaled up and made available to many Indian farms. Following measures could be implemented to make digital agriculture a success in India.

The report on increasing farmer's income by 2022 advocated for the adoption of digital technologies I agricultural practices it will help in increasing farmer's income. To achieve the vision of the self-Reliant India Movement and Sustainable Development Goals (SDGs), the transformation of traditional agriculture into digital agriculture is imperative. Government of India's Digital Agriculture Mission (2021-2025) and consultation paper on Digital Agriculture Ecosystem are the

essential steps towards the digitalisation on Indian agriculture.

Farmers are the main stakeholders in the food production and supply chain as producers. Thus it will be challenging to achieve and sustain food security without ensuring farmers well-being and satisfaction. Policymakers have to focus on the empowerment of the farming community by making farming a more enumerative, easy secure, respectable, attractive, and less risky profession, ultimately generating food security as a by-product.

Digitalisation is shifting the agriculture policy from direct intervention to information-based governance, which will increase the policy outcomes and ultimately secure the trust of farming communities and will maximise their satisfaction.

Government has taken various initiatives to give a push to digital agriculture in the country:

1. Government gas finalized the core concept of India Digital ecosystem of Agriculture (IDEA) framework which would lay down the architecture for the federated farmer's database. Further, the database related to the schemes governed by the Department has been integrated. The IDEA would serve as a foundation to build innovation agri-foucsed solution leveraging emerging technologies to contribute effectively in creating a better ecosystem for Agriculture in India.
2. Under plan scheme viz. National e-Government plan in Agriculture (NeGP-A) wherein, funds are released to the State (s) UT(s)for project involving use of modern technologies viz. Artificial Intelligence (AI), Machine Learning (ML), Robotics, Drones, Data Analytics, Block Chain etc.
3. Sub Mission on Agricultural Mechanization (SMAM) in being implemented on April 2014. The scheme aims at reaching the unreached by bringing to the small and marginal farmers in the core and giving the benefits of farm mechanization, by promoting 'Custom Hiring Centres' , creating hubs for hi-tech and high value farm equipments, distribution of various agricultural equipment, creating awareness among stakeholders.
4. Under PM-KISAN Scheme, fund is directly transferred into the bank accounts of the eligible farmers under direct Benefit Transfer mode. Farmers can do their self-registration through the Farmers Corner in the portal.
5. Integrated Scheme for Agricultural Marketing Schemes (AGMARKNET) to promote creation of agricultural marketing infrastructure by providing backend subsidy support to State, cooperative and private sector investments Services are provided through (AGRMARKENT) portal which is a G2C e-governance portal that caters to the needs of various stakeholders such as farmers, industry, policy makers and academic institutions by providing agricultural marketing related information from a single window.
6. National Project on Soil Health and Fertility: To issue soil health cards tp farmers of the country, so as to provide a basis to address nutrient deficiencies in fertilization practices. Soil Health Card Portal is available where farmers can track soil samples.
7. Government is providing advisories services on various crop related matter to the registered farmers through SMSs.

Conclusion:

India has digitally intervened in this agriculture sector through its policies and project. However, India lags is adopting digital technologies at the farm level as most of the initiatives are limited to governance purposes and provide information to farmers (Confederation of Indian Industry,2021). The Report on Doubling Farmers Income by 2021 emphasised the introduction of emerging advanced digital technologies in agriculture. However. Any government-led initiative will be successful when it receives maximum public participation. An ecosystem has to be created to digitalise agriculture in India. It is essential to promote digital literacy among youth in rural areas for unleashing the full potential of digital technologies. Institutions play a significant role in assimilating new technologies into society. It is required to upgrade the existing agriculture extension system. Agricultural institutions like State Agricultural Universities or Krishi Vigyan Kendras (KVKs) are essential to disseminate information related to Digital Agriculture technologies.

Finally, digital infrastructure such as internet connectivity, mobile phone network, and the cost of internet and digital devices are crucial for the farming community's extensive adoption and continuous use of digital technologies. People in rural areas still do not have access to basic facilities like all-season roads, regular electricity and clean drinking water. Thus, creating digital infrastructure in a rural area may take time, which may delay the digitalisation of the agriculture sector. Policymakers must prioritise the rapid creation of digital infrastructure in rural areas and promote the development of AgriTech start-ups in each Gram Panchayat (GP) to get benefits of new technologies to farmers and increase their income. The time is apt to transform traditional agriculture into digital agriculture and create "e-Farmers" or Smart Farmers" in India.

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Status of Renewable Energy in India

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Abstract:

Renewable Energy Is Energy Obtained From Natural Sources That Regenerate At A Higher Rate Than They Consume. The Two Main Types Of Energy Are Renewable Energy And Non-Renewable Energy. On The Other Hand, Fossil Fuels Like Coal, Oil, And Gas Are Non-Renewable Resources That Take Hundreds Of Millions Of Years To Form. When Fossil Fuels Are Burned To Produce Energy, They Emit Harmful Greenhouse Gases Like Carbon Dioxide. The Solution To The Global Warming Crisis Lies In A Change Away From Fossil Fuels, Which Now Produce Most Emissions. Renewable Energy Sources Contribute A Lot To Reducing The Emission Of Greenhouse Gases. Renewable Energy Sources Are The Answer To India's Energy Demands, Having Several Socio-Economic Advantages Compared To Carbon-Based Fossil Fuels. Renewable Energy Plays An Important Role In Achieving Sustainable Development In The Future. Through The "Make In India" Initiative Of The Indian Government, Renewable Energy Will Account For Significant Job Creation In Urban Areas As Well As Rural Areas Along With Several Other Renewable Energy Policies Which Cover Solar Energy, Wind Energy Among Other Renewable Energy Sources. This Paper Aims To Analyze The Current Total Generation And Sector-Wise Distribution Of Renewable Energy In India. To Identify The Initiatives Undertaken By The Government Of India In The Field Of Renewable Energy.

Keywords: Renewable Energy, Renewable Energy Production, Solar Energy, Wind Energy, Government Effort.

Introduction:

India Is The Most Populated Country. Due To The Increasing Population In India, It Can Be Said That Providing Jobs To The People Is A Big Challenge For India. Strength Is A Basic Requirement In Any Field Of Work. Energy Is In Two Ways: Renewable And Non-Renewable Energy. Our Focus And Pursuit Are On Renewable Energy. Renewable Energy Has Its Source And Can Be Replenished From Time To Time. It Is Used In Any Field Like Power Generation, Transportation, Etc. Many In Today's Age Technologies Have Been Developed To Produce Solar Panels, Windmills, Wind Turbines, Etc. Renewable Energy Can Be Transmitted From Sunlight, Wind, Tides, Waves, Biomass, Etc. Today The World Is Moving Towards Renewable Energy Because Of Its Easy And Infinite Availability In Nature. In The 19th Century, Coal Was Used As An Energy Displacement But In The Last Few Years Renewable Energy Coal, Petroleum, And Fossil Fuels Outpace Energy. As This Field Is Being Stressed Daily, Jobs Are Also Skyrocketing. Renewable Energy Sources Are Another Indicator Of Sustainable Economic Growth.

Current Scenario Of Renewable Energy In India:

India Currently Has The Fourth-Place Global Rank For Installed Renewable Energy Capacity. The Sector's Growth Has Particularly Impacted India's Electricity Generation Capacity Over The Years. This Contributes To The Government's Objective For Sustainable Development While Playing

A Crucial Role In Supplying The Country With Electricity.

The Importance Of New And Renewable Energy Has Grown In Recent Years As National Energy Security Has Been A Significant Concern. Following The Two Oil Crises Of The 1970s, Energy Self-Sufficiency Was Found To Be The Main Impetus For The Development Of New And Renewable Energy In The Nation. The Commission For Additional Sources Of Energy Was Established In The Department Of Science & Technology In March 1981 As A Result Of The Abrupt Rise In Oil Prices, Supply-Related Concerns, And Detrimental Effects On The Balance Of Payments Position. The Commission Was Responsible For Formulating Policies And Their Implementation, Programs For The Development Of New And Renewable Energy Apart From Coordinating And Intensifying R&D In The Sector. In 1982, A New Department, I.E., The Department Of Non-Conventional Energy Sources (DNES), That Incorporated CASE, Was Created In The Then Ministry Of Energy. In 1992, DNES Became The Ministry Of Non-Conventional Energy Sources. In October 2006, The Ministry Was Re-Christened As The Ministry Of New And Renewable Energy.

India, A Nation Of 1.4 Billion People With One Of The World's Fastest-Growing Economies, Recently Cemented Its Place As A Pioneer In Renewable Energy. India Will Rank Fourth In The World For Installed Renewable Energy Capacity In 2021 With 147 Gigawatts.

According To The 2021 COP26 Climate Summit In Glasgow, Prime Minister Narendra Modi Laid Out India's Plans For An Additional 500 GW Of Renewable Energy Capacity By 2030. This Goal Is To Be Met Mainly By Significant Increases In Nationwide Wind And Solar Installations.

3. Materials And Methods:

To Achieve Its Goals, This Study Uses Secondary Data Sources From Yearly Reports Of The State And Union Governments, Including Those From The Department Of Renewable Energy, The Indian Economic Survey, Statistics Database, Publications, And Magazines. Additional Sources Of Data From The IEA And MNRE Were Used To Create This Analysis.

4. Review Of Literature:

Sidharth Jain(2020): Renewable Energy For Sustainable Development India:Current Status, Prospects,Challenges,Employment,And Investment Opportunities. In This Paper, India Will Analyze Renewable Energy Wide Supply. Renewable Energy Refers To Economic Social And Environmental Impact Factors. The Main Objective Of The Study Of This Paper Is To Point Out The Challenges Related To Renewable Energy And Suggest Some Recommendations For Promotion.

Srihari Manikandan (2022): Renewable Energy Resources: Current Status And Future Prospects. The Authors Of This Study Examined Environmental And Renewable Energy Challenges In India. The Article Examines The Effects Of Electricity Supply On The Growth Of Rural And Small-Scale Industries. The Overall Level Of Pollution In The World Has Dropped As A Result. Energy Utilization Has Been Demonstrated To Significantly Increase The Nation's Economic Growth.

Swati And Gaikwad (2015): Current Status And The Future Potentials Of Renewable Energy In India - A Review. In This Article, India Claims That It Is Essential To Experience Growth In A Rapidly Expanding Economy Is Energy. Moreover, About 33% Of India's Primary Energy Consumption Is Derived From Renewable Sources. According To Researchers, It Is Appropriate To Take Initiatives That Will Reduce Carbon Emissions And Improve Renewable Energy Technology. The Paper Analyses The Possibilities For Future Renewable Energy Initiatives As Well As Their Existing Viability.

Adesh Srivastava And Patel (2019): Present Status And Future Scope Of Renewable Energies In India. In This Paper, The Researcher Has Analyzed Renewable Energy In India And How Energy Generation And Renewable Energy Have Played A Role In The Public Sector. This Article Examines Solar Energy, Wind Energy, Hydroelectricity, Biomass, And Biogas Energy.

Bhattacharya (2009): Renewable Energy In India: Historical Developments And Prospects. According To The Researcher, Coal Contributes The Biggest Share Of India's Within The Country Energy Demand Because Of Its Economic Growth Rate Due To The Use Of Renewable Energy. This Paper Analyses How Renewable Energy Has Played A Role In The Use Of Some Of The Latest Technologies. This Article Describes

The Use Of Solar Energy And Rural Electrification Intensification Programs For Future Oil Crises And The Import Of Hydroelectric Power To Neighboring Countries.

Jagdeep Saxena (2022): Renewable Energy: Transforming The Face Of Rural India. According To This Research Paper, Renewable Energy Has Fulfilled A Critical Role In The Creation Of Rural Development Programs. Rural Transformation Has Been A Prevalent Subject Throughout India's Progressive Renewable Energy Journey. India's Goal Is To Reach 450 GW Capacity By 2030. India Has Set An Objective To Produce Electricity From Non-Fossil Fuels In A Few Decades.

5. Objectives:

1. To Know The Renewable Energy Production In India.
2. To Examine The Sector-Wise Distribution Of Renewable Energy In India.

5.1 Renewable Energy In India

India Has A Huge Demand For Energy To Fuel Its Rapidly-Growing Economy With A Population Of 1.3 Billion. India Was Power-Deficient At The Time Of Independence, And Efforts To Make India Energy-Independent Have Been Going On For Seven Decades, To Overcome The Power Shortage. At Present, We Are A Total Power Surplus Nation With A Power Capacity Of Over Four Lakh Megawatts.With Sustainable Development Goals In Mind, India's Power Generation Mix Is Rapidly Shifting To A More Significant Share Of Renewable Energy. Today, India Is The World's Third-Largest Producer Of Renewable Energy, With 40% Of Its Installed Electricity Capacity Coming From Non-Fossil Fuel Sources.

Solar Power: Solar Energy Is Created By Nuclear Fusion That Takes Place In The Sun. It Is Necessary For Life On Earth And Can Be Harvested For Human Uses Such As Electricity**.** We Currently Use Solar Energy To Heat Buildings, Warm Water, And Power Our Devices. The Power Is Collected Using Solar, Or Photovoltaic (PV), Cells Made From Silicon Or Other Materials. Recently, India Ranked 4th In Solar PV Deployment Globally By The End Of 2021. The Installed Capacity Of Solar Power Reached About 61.97 GW As On 30 November 2022. Currently, Solar Tariff In India Is Very Competitive And Has Achieved Grid Parity.

Wind Power: Wind Energy Is Emerging As The Most Promising Alternative Energy Technology Of The Future. Over The Years, There Has Been A Substantial Increase In The Amount Of Power Generated By Wind-Driven Turbines Due To Recent Advances In Turbine Technologies. Although India Is Relatively New To The Wind Industry Compared To Denmark Or The US, Domestic Policy Support For Wind Power Has Led India To Become The Country With The Fourth-Largest Installed Wind Power Capacity In The World.

Small Hydro Power: Small Hydro Power (SHP) Projects Are Environmentally Friendly Because They Do Not Encounter The Problems Of Large-Scale Land Acquisition/Deforestation And Displacement Of Human Settlements. India Is The 7th Largest Producer Of Hydroelectric Power In The World. Hydro Projects In India Under 25MW Capacity Are Classified As 'Small Hydro Power' And Are Considered As 'Renewable Energy.

Biopower: Biomass Has Always Been An Important Source Of Energy For The Country, Considering The Benefits It Offers. It Is Renewable, Widely Available, Carbon Neutral, And Has The Potential To Provide Significant Employment In Rural Areas. Biomass Has The Potential To Provide Robust Energy. About 32% Of The Total Primary Energy Consumption In The Country Is Still Derived From Biomass And More Than 70% Of The Country's Population Depends On It For Its Energy Needs. As Of 31.10.2022, A Total Installed Capacity Of 10205.61 MW In The Biomass Power And Cogeneration Sector.

Nuclear: The Country's Current Installed Nuclear Power Capacity Is 6780 MW, Consisting Of 22 Operational Nuclear Power Reactors. Additionally, One Reactor, KAPP-3 (700 MW) Was Connected To The Grid In Jan- 2021. The Existing 6780 MW Nuclear Power Capacity Will Be Increased To 22480 MW By 2031 With Projects Under Construction And Sanctioned. More Nuclear Power Plants Are Also Planned In The Future.

5.2 Installed Capacity Of Renewable Sources Of Energy In India

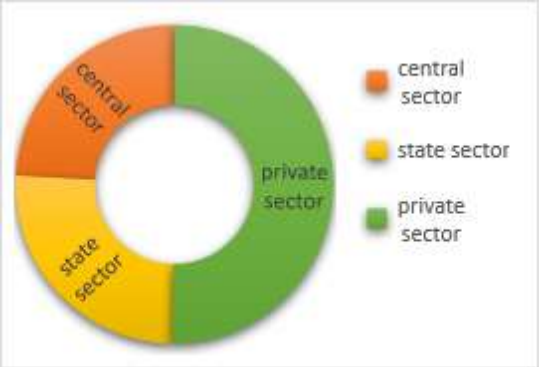
Renewable Energy	MW	% Of Total
Hydro	46,850	11.3%
Wind, Solar& Other RE	125,160	30.1%
Wind	42,633	10.2%
Solar	66,780	16.1%
Biopower/Cogen	10,248	2.5%
Waste To Energy	554	0.1%
Small Hydro Power	4,944	1.2%
Nuclear	6,780	1.6%
Total Capacity	**178,790**	**43%**

Source: CEA (As On 12 April 2023)

Renewable Energy Sources, Including Large Hydropower, Have A Combined Installed Capacity Of 178,790 MW.The Above Table Shows Wind Power:42,633 MW, Solar Power: 66,780 MW, Biomass/Cogeneration: 10,248 MW, Small Hydro: 4,944 MW, And Energy From Waste: 554 MW.The Renewable Energy Capacity Shown In The Above Table Has Increased Year-On-Year And The Increase In Renewable Energy Capacity In India Has Been Complementary To India's Economic Growth.India Aims To Reduce The Carbon Intensity Of The Nation's Economy Below 45% By The End Of The Decade, Achieve 50 Percent Of Installed Cumulative Electricity From Renewables By 2030, And Achieve Net-Zero Carbon Emissions By 2070. Carbon Technologies Could Create An $80 Billion Market In India By 2030, Says The Indian Government.

5.3 Installed Generation Capacity (Sector-Wise)

Sector	MW	% Of Total
Central Sector	1,00,055	24%
State Sector	1,05,726	25.4%
Private Sector	2,10,278	50.5%
Total	**4,16,059**	



Source: CEA

Job Creation: Due To The Neoteric Underlay Of The Renewable Energy Field, There Are Agglomeration Jobs In This Sector Which Not Only Lead To Power Avulsions But Also A Good Realm For The Deputation Of Indian Youth In The Energy Sector. Energy Is The Initial Thing That All Industries Require, No Machine Or Doohickey Can Run Without Energy (Except Manual Machines). So, For The Generation Of Energy Companies And Government Must Employ The Roustabout. The Governmenthas Taken Umpteen Initiatives For The Development Of Renewable Energy In India Through The "MAKE IN INDIA" Project. Tata Power Solar Systems, Ware Solar,Etc. Are Themajor Companies That Are Outbidding The Solar Energy Sector In India. Vestas India, Inox Wind Etc. Are The Major Companies That Are Superinducing The Wind Energy Sector In India. Institutional & Domestic Biogas Plant, FRD Biotech, Etc. Are The Major Companies That Are Developing The Biogas Energy Sector In India.

5.4 Indiangovernment (2022) Achievements:
Program/Scheme-Wise Cumulative Physical Progress As Of March 2023.

Achievements (April -March 2023)	Cumulative Achievements (As Of 31.03.2023)	
Installed RE Capacity (CAPACITIES IN MW)		
Wind Power	2275.55	42633.13
Solar Power*	12783.82	66780.34
Small Hydro Power	95.20	4944.30
Biomass (Bagasse) Cogeneration	0.00	9433.56
Biomass(Non-Bagasse)Cogeneration	42.40	814.45
Waste To Power	25.00	248.14
Waste To Energy (Off-Grid)	52.29	305.89
Total	**15274.26**	**125159.81**

Source: MNRE (Ministry Of New & Renewable Energy.

India Saw The Highest Year-On-Year Growth In Renewable Energy Additions Of 9.83% In 2022.The Installed Solar Energy Capacity Has Increased By 24.4 Times In The Last 9 Years And Stands At 63.3 GW As Of Feb 2023.

5.5 Indian Government Target:

India Has Set A Target To Reduce The Carbon Intensity Of The Nation's Economy By Less Than 45% By The End Of The Decade, Achieve 50 Percent Cumulative Electric Power Installed By 2030 From Renewables, And Achieve Net-Zero Carbon Emissions By 2070. Low-Carbon Technologies Could Create A Market Worth Up To $80 Billion In India By 2030.

India 'S Target Is To Produce Five Million Tonnes Of Green Hydrogen By 2030. The Green Hydrogen Target Is Set At India's Electrolyzer Manufacturing Capacity Is Projected To Reach 8 GW Per Year By 2025. The Cumulative Value Of The Green Hydrogen Market In India Could Reach $8 Bn By 2030 And India Will Require At Least 50 Gigawatts (GW) Of Electrolyzers Or More To Ramp Up Hydrogen Production.

1. India Currently Has A Total Renewable Energy Capacity Of 168.96 GW (As Of 28th February 2023) With About 82 GW At Various Stages Of Implementation And About 41 GW Under Tendering Stage. This Includes 64.38 GW Of Solar Power, 51.79 GW Of Hydro Power, 42.02 GW Of Wind Power, And 10.77 GW Of Biopower.
2. 59 Solar Parks Withan Aggregate Capacity Of 40 GW Have Been Approved In India.
3. Solar Parks In Pavagada (2 GW), Kurnool (1 GW), And Bhadla-II (648 MW) Are Included In The Top 5 Operational Solar Parks Of 7 GW Capacity In The Country.
4. The World's Largest Renewable Energy Park Of 30 GW Capacity Solar-Wind Hybrid Project Is Under Installation In Gujarat.
5. India Offers A Great Opportunity For Investments In The RE Sector; $196.98 Bn Worth Of Projects Are Underway In India.
6. Wind Energy Has An Offshore Target Of 30 GW By 2030 With 3 Potential Sites Identified.

Union Budget 2023 Highlights

Green Growth Is Identified As One Of The Nodes In The SAPTARISHI (7 Priorities).

1. $2.4 Bn National Hydrogen Mission For Production Of 5 MMT By 2030. $36 Mn Additional In Budget.
2. 4 Gwh Battery Energy Storage Systems Supported Through Viability Gap Funding.
3. Pumped Storage Projects Has Received A Push With A Detailed Framework To Be Formulated.
4. $1.02/2.5 Bn Central Sector Support For ISTS Infrastructure For 13 GW Renewable Energy From Ladakh.

Conclusion:

Renewable Energy In India Is The Largest And The Main Driver Of Economic Growth. The Installed Renewable Energy Capacity Of 11.9 GW In 2021 Will Increase To 14.21 GW By 2022. According To IRED, The Government Of India Has Decided To Target A Non-Fossil Fuel-Based Installed Capacity Of 500 Plants By 2023 As Part Of The Five Hundred Goals. The Result Of This Paper Analyzed The Renewable Energy Potential As It Currently Exists. Renewable Energy Has Made Its Own Major Contribution To Sustainable Development Soon And Has Led To The Creation Of Many Jobs In Rural And Urban Areas In India From Renewable Energy To Solar, Wind, Bio-Energy, And Other Energies. It Has Contributed Significantly To India's Economic Growth. It Can Be Said That Energy Is The Basic Focus Of Digital And Technologies.

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Digital Financial Inclusion: Challenges and Opportunities In Rural India

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Abstract: -

The Electronic Payment System Is Adopted By The Peoplein India Changing Rapidly In India But Still In Rural Areas People Are Lacking Behind Compare To City People. According To Rural Realities & Union Budget 2022-23, The 69% Of Population Resides In Rural India. There Are Many Issues & Challenges Are Deviating In The Way Of Digital India. India's Digital Financial Inclusion Journey Has Been Remarkable In The Last Decade And Explicitly Promoted By The Government Of India To Achieve Rural Financial Inclusion Through Their Digital India Movement, Pradan Mantri Gramin Digital Sakshrta Abhiyan (PMGDISHA)& Pradhan Mantri Jan Dhan Yojana. Reduction Of Poverty And Addressing The Challenges Of Ensuring Sustainable Income Could Become A Key Factor To Achieve An Inclusive Society. Information And Communication Technology Are Providing Access To Unbanked Population Progressively And Helping To Bring Them Into The Banking Segment. Digital Technologies Are Driving Usage And Making A Positive Impact On Livelihood Of Citizens. In This Paper Addressing The Challenges Facing & Opportunities Of Digital Financial Inclusion To Achieve An Inclusive Society In Rural. This Paper Enlists Various Challenges That Continue To Prevail In Achieving An Inclusive Society. We Have Put Forth Recommendations On Addressing The Key Challenges And Qualified The Importance Of Collaboration And Transparency Between All The Key Stakeholders To Achieve An Inclusive Ecosystem.

Keywords: Financial Inclusion,PMGDISHA, Information And Communication Technology, Sustainable Growth.

Introduction

Financial Inclusion Means That All Individuals And Businesses Have Access To Useful And Affordable Financial Products & Services That Meets Their Needs – Transactions, Payments, Savings, Credit And Insurance – It Can Have Delivered In A Responsible And Sustainable Way.

World Bank Group

Financial Inclusion (FI) Means Serving Basic Financial Services To The Underprivileged And Financially Excluded Members Of Society. According To Dr. C. Rangarajan (The Committee On Financial Inclusion, Chairman)Financial Inclusion Is The Process Of Which Ensure Thataccess Basic Financial Services On Timely And Adequately By The Weaker Section &Lower Income Groups Of The Society At Affordable Cost. Financial Inclusion Helps In Developing A Habit Of Savings Among Semi Urban And Rural Population By Bringing Low Income Groups Within The Formal Frame- Work Of Banking Which Is Momentous For National Sustainable Economic And Social Development.

Financial Inclusion Is An Important Priority Of The Government Of India. The Objective Of Financial Inclusion Is To Extended Support Of Financial Services To The Un-Served Population Of The Country To Unlock Its Growth Potential. The GOT Introduced The National Mission For Financial Inclusion (NMFI), I.E., Pradhan Mantri Jan Dhan Yojana (PMJDY) In August, 2014 To Provide All Banking Services For Every Unbanked Individuals. PMJDY Has Been Extended Beyond

14.8.2018 With The Focus On Opening Of Accounts Shifting From "Every Household" To "Every Unbanked Adult".

The Moto Of Financial Inclusion Is Form Jandhan To Jansuraksha.

Digital Financial Inclusion (DFI): Means The Deployment Of The Cost-Saving Digital Means To Reach Currently Financially Excluded And Underserved Populations With A Range Of Formal Financial Services Suited To Their Needs That Are Responsibly Delivered At A Cost Affordable To Customers And Sustainable For Providers. (World Bank 2014). DFI Provide Numerous Benefits I.E., Can Access Formal Financial Services, Lower Costs, Reduces Risks To The Financial Excluded & Underserved Population.

DFI Transactions Can Be Done Through BHIM-UPI, IMPS, NACH, Aeps, NETC, Debit Cards, Credit Cards, NEFT, RTGS, PPI And Others Etc., Trends Of Growth Of Banking Infrastructure In India As On

Period As On 31 March	No. Of Branches	No. Of ATM	No. Of Credit Card	No. Of Debit Cards	POS Terminals	No. Of Digital Transactions (In Crores)	Total Value Of Digital Transaction (In Lakh Crores)
2021-22	151320	215061	73.60 Mio	9177 Mio	60.7 Mio	8840	3021
2020-21	150207	213575	62.0 Mio	8982 Mio	47.2 Mio	5554	3000
Incremental Rise During 2021-22	1113	1486	11.6 Mio	195 Mio	13.5 Mio	3286	21

(Sources: RBI Monthly Data On Bank Branches & Digital Infrastructure)

National Strategy For Achieving Financial Inclusion

In The Year 2020, Reserve Bank Of Indiainitiateda National Strategy For Achieving Financial Inclusion With Focus On Creating An Outreach Of Financial Services Outlets Within 5 Km Radius To Access Banking Services To Every Household. According To The Strategy All Eligible Adults Must Have Access To Basic Financial Services/Products Such As Bank Account, Insurance, Accessibility Of Credit,Pension Scheme And Appropriate Investment Product. 2020-24 Financial Inclusion Is Focused Addressing Behavioral And Practical Aspects.

1. A Financial Transaction Grievance Redressal System To Address Concerns Of Possibly Less Technology Savvy Citizens I.E, Semi Urban & Rural People.
2. Increasing Digital Penetration As Still The Usage Of Smartphone For Financial Transactions Arelimited To Urban And Semi Urban Population Predominantly.
3. The Opening Of Bank Account For The Remaining Population Of The Country As Still The PMJDY Penetration Is About 85% Of The Population.
4. Safeguarding The Safety & Privacy Of Data And Information Of Citizens And Inhibition Of Fraudulent Transactions And Personal Data.
5. Provide Easy And Affordable Digital Payment Possibilities To Better Suit The Needs Of Small Investors, Businesses And Unstructured Sector Workers.
6. Providing Access To Basic And Most Essential Financial Products Such As Transactionalaccounts, Digital Payments, Basic Term Insurance, Basic Medical Insurance, And Pensionoptions To The Population Specially In The Agricultural And Unorganized MSME Sector Workers

Digital Financial Inclusion: Challenges

"Universal Access To Financial Services Is Within Reach—Thanks To New Technologies, Transformative Business Models And Ambitious Reforms... As Early As 2020, Such Instruments As E-Money Accounts, Along With Debit Cards And Low-Cost Regular Bank Accounts, Can Significantly Increase Financial Access For Those Who Are Now Excluded. "

Jim Yong Kim Farmer President, World Bank Group

The Launching Of Mission 'Har Payment Digital' Today During The Digital Payments Awareness Week (DPAW) 2023 Reinforces RBI's Commitment To Deepen Digital

Payments In The Country.

Even Though More Initiatives Taken By The GOI & RBI Still In Rural India Facing Challenges To Achieve Digital Financial Inclusion

1. **Shifting Banking Habits** - Digital Banking System Changing The Banking Habits Among The Public. The Urban People Are Accepting To Change The Habit Of Conducting Banking Transaction From Traditional Banking System To Digital Form.But In India The Semi Urban & Rural Area Of Citizensare Not Fully Accept To Change The Traditional Banking System To Digital Mode For The Conduction Of Financial Transactions.
2. **There Is A Clear Differentiation Of Digital Divide Among** —Some Are Tech Savvy People And Delivering The Services And Making Them Understand Is Not Difficult, Where As Some In Semi-Urban And Majority Of People In Rural Areas Find Difficult To Understand And Utilize Technology Efficiently.
3. **Lack Of Financial Literacy** And Awareness On Financial Cybercrimes Has Resulted In General Mistrust Among Rural Population Which Leads To Reduced Digital Penetration.
4. **Security-**Security Is One Of The Most Significant Challenges For Digital Banking Because Of The Inherent Concerns That Are Traditionally Associated With Banking Online. Although Banking Systems Are Designed To Be Virtually Impenetrable, Cyberattacks And Fraudulent Activity Are Still A Reality.
5. **Lack Of Personal Relationship**– Online Banking Will Create A Lack Of Personal Relationship Between Bankers & Customers
6. Complexity – Complexity Is The Major Challenges For The Adoption Of Digital Banking In Rural Area
7. There Is A Burden On Running Sustainable Last Mile Delivery Model, Particularly In Rural Areas & Last Mile Level Service Delivery. Multiple Govt. & Business Agencies Are Trying To Reach The Same Location For Various Reasons Related To FI, Social Or Healthcare Inclusion And These Are Disjoint Efforts And Driving Higher Costs.
8. Data Privacy Is Still A Major Concern As A Lot Of Captured Data Is Easily Available To Various Stakeholders As PII Norms Are Not Completely Followed. KYC Data & Mobile Numbers Are Available Everywhere.Biometric Data Is Captured Duplicitously By Some BC Agents In Clay Who Will Replicate It Later For Fraudulent Reasons.
9. **SMS Messages** For Banking Transactions In An Account Are Not Reaching The Customer Due To Lack Of Mobile Device (Smart Phone) Or Financial Institutions Are Not Sending These Messages For Low Value Transactions. This Has Led To Increased Dependency On Local Agents.
10. **Access To Credit** Is Still A Concern As Small Time Lenders Charging High Rate Of Interest Are Prevalent In Rural Areas. Government Schemes Have Not Initiated Fully And Need More Rural Outreach To Enhance Credit Access. Lack Of Avenues For Digital Lending And Online Loans From Credible Financial Institutions Is Missing.

1. **Digital Financial Inclusion: Opportunities**

COVID-19 Crisis Has Also Reinforced The Need For Increased Digital Financial Inclusion. Digital Financial Inclusion Includes The Deployment Of The Cost-Saving Digital Means To Reach Currently Financially Excluded And Underserved Populations With A Range Of Formal Financial Services Suited To Their Needs That Are Responsibly Delivered At A Cost Affordable To Customers And Sustainable For Providers.

The Some Of The Important Benefits/Opportunies Will Get When Financial Transactions Are Done Through Digital Mode For The Financially Excluded & Underserved Are The Following

1. **Access To Formal Financial Services** – Payments, Receipts, Transfers, Savings, Credit, Insurance, Securities, Etc. Migration To Account-Based Services Typically Expands Over Time As Customers Gain Familiarity With And Trust In A Digital Transactional Platform. Government-To-Person Payments, Such As Conditional Cash Transfers, That Can Enable Digital Stored-Value Accounts May Provide A Path For The Financially Excluded People Into The Financial System.

2. **Lower Costs**: -The Digital Transactional Platforms Allow Lower Transaction Costs To The Both To The Provider And The Customer.It Helps The Rural People To Manage Their Uneven Income And Expenses.
3. **Added Financial Services Tailored To Customers' Needs And Financial Circumstances** Are Made Possible By The Payment, Transfer, And Value Storage Services Embedded In The Digital Transaction Platform Itself, And The Data Generated Within It
4. **Reduced Risks: -** Digital Transactions Reduces The Risks Of Loss, Theft, And Other Financial Crimes Posed By Cash-Based Transactions, As Well As The Reduced Costs Associated With Transacting In Cash And Using Informal Providers.
5. **Flexibility: -**Digital Financial Systems Enable Flexible For Conducting Financial Transactions. Different Tasks Can Be Easily Correct It & Reassigned. It Also Provides Flexible & Convenient Way To Communicate By Email, Online Or Phone.
6. **Easy & Efficiency: -**Financial Transaction Can Be Conduct Easily & Efficiently Using Digital Mode.
7. **Transparency Of Information:** In Digital Mode All Information Is Available To Everyone, Whoever Need It. The Availability & Accessibility Of The Financial Information Can Be Restricted As Required, This Ensures Safety, Security & Prevents Information.

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Connecting the Dots through Digitalisation: In a Supply Chain Management

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Abstract:

Bringing a proper path in supply chain, with proper dots, from one end of the supplier to the customer, normally connected by dots, visibly enhancing to identify ably, the problems, opportunities, on a faster concept as suppliers are like to find that disruption, risk may be able to arise due to unforeseen circumstance, with real-time data available, order with accurate information in supply chain. Increase in product complexity, process changes, supply chain connected by dots, from production, manufacture, in order to create profit, is to bring visibility, in planning, with a stability in operation in supply chain.

Review: Customers, consumer's transportation in logistic, supply chain, in order to fulfil the required demands, with real-time, monitoring, updating, alerting, as new technologies', in logistic, supply chain, customize to agree in connecting the dots, up to point of receipt, of customer orders, organisation receive the raw materials, products, so as the manufacturers build these product with the available technology in supply chain.

Supply chain digitalisation, integration, of the performance of the organisation is normally influenced by the performance, as this moderates the relationship, to provide implications on the ethical visibility, efficiency, in the operations, of connecting the dots, of the data that can be analysed on the efficiency in supply chain.

Implementations of the Abstract study: Enhancing Lead Management in provisioning the infrastructure capabilities with artificial intelligence, digitalisation, enables with the process of automation, decisions, support, with the ability to connect the dots, on with the most valued partners, in a corporate functions of the business to bring profit to the organisation in supply chain.

Key Words; Connecting dots: transportation: logistic: supply chain: monitoring: updating: technology:

Introduction

Supply chain being a huge set-up, despite being an export, import organisation, products have been predominantly dealing with number of issues, on visibility, control, with no clear insight on the process, delivery, time-scale of consignments, with wholesaler's, retailer's, struggling to maintain the connection of dots, in the operation, in order to meet the requirement, of the vendors, as the check points, of connecting dots, are driven by issues, concerns with little information on multiple procurement orders, status, owing to challenges in communication, between buyers, also the overall view of logistic, supply chain.

Data produced in supply chain is to improve the visibility of operations, in an organisation, is to be resilient in business operations, as usual, but epidemic does affect supply chain, then the bottleneck in supply chain arises, for shortage of products, components, during the requirement of peak periods, the warehouse distribution should be able to handle the connection of dots, of either small, big consignments, as the demand arises during the struggle, so as to leverage with artificial intelligence, internet of things in order to place the operations in order to mitigate risks in supply chain.

Digitalisation in supply chain connecting dots is one way for requirement of globalisation, connecting from end-to-end manufacturing, with a capacity to monitor, in

order to respond to the environment, so as to bring profitability in supply chain. Sustainability in supply chain of business environment with the present climate change process, is performed perfectly with good connectivity, visibility, on connecting the dots, on the changes, of the activities of the customer, with digitalisation, in order to incorporate the numerous changes, with an opportunity to present the best opportunities to consumer, customer in supply chain.

Fig: 1: Connecting Of The Dots:

Purpose Of The Study:

Supply chain in an organisation or in an industry connecting the dots, can never be considerable or favourable as supply chain is always liable to be split into different fractions of place, to the placement of raw-materials, sourcing, procurement, manufacturing, production, ultimately distributed to the wholesalers, retailers, dealers, smaller stores, to consumers', as the function gets divided with information technology, application from the destination of warehouse to distribution, as sometimes their connection of the dots, as they commonly become disconnected in supply chain.

Execution in supply chain, is becoming very sophisticated, with greater efficiencies, connecting the dots, of many files of the organisation, still able to fail to connect or exploit the network systems, in information technology, without the integration on the data of the systems captured by supply chain, in which execution as it demands to become increasingly elaborate, with greater pressure on lowering the costs, speedier innovation to fulfil orders, with the use of warehouse support in a more complex system in supply chain.

Digitalisation, transparency of the entire delivery prices is the key to achieve the last link of optimization, on utilization of the delivery fleet, as a pick-up price, it has been devised on connecting the dots of involving the technology, based on a solution to optimize the resources, also the last mile delivery costs, on ensuring high degree of customer satisfaction, as our section is fragmented multi-vertical model is backed by an efficient technology enabled system, achieving not only optimization of the delivery fleet but also yield better cost in supply chain.

Implication: Application of Cloud computing, that inculcates proper business, capabilities, enables smart supply chain, with artificial intelligence, using Data Management, as an integral part with the objective of connecting the dots, in order to provide capabilities to the system integration, which is liable to become an integral to customer, consumer's successful digitalisation in supply chain.

Literature Review:

Organisation, or Industry have better traceability, capability, in order to compete efficient, sustainable, supply chains on complying with regulations, standardization, to enable digital transformation on connecting the dots, on finding traceability solutions, in order to connect warehouse, distribution, to suppliers, buyers, for operational excellence, on a regulatory compliance, also to connect brand owners, with the user customer's, on product authentication, engaged on market insights to track re-cycle for visibility performance, on reverse logistics for reusable assets in managing 80% of the supply chain.

Building efficient data in supply chain with alignment of network, on a physical process, necessary for proper distribution, sourcing, connecting the dots with necessary consumer's customers, along with the unified teams of logistic interface platforms, in technological process, can be achieved with proper Material Resourcing Planning, with the share of proper data, to

achieve 60% of an integrated design, most effective to assure an efficient compliant, cost efficiency in supply chain.

Key Performance Indicators, (data collected analysed to help decision making) in supply chain for inventory of raw materials, work-in-progress, finished goods, are evaluated on the basis of the requirement, also the need, so as to evaluate the location system, with applied metrics, as they data is to be connected with the dots, which correlate to have impact with the Key Performance Indicators, which is likely to strive harder to determine in providing insights into issues to drive 75% of improvement in supply chain.

Research Methodology/Primary/Secondary:

Primary Survey: Research : Customers' value in supply chain digitalised is considered as rather complex, as manufacturers, producers, with challenging engineering content includes customer's consumer's, seeking different value at different levels, also the need to identify the values, to leverage proper value, from the fact that work needs to follow the repetitive process, as such factors that are to be identified in order to visualise correct measure's, with unique elements, by connecting the dots, of new consignments, new customers, new consumer's, as a preparation to lean management in supply chain.

Transactions: Identifying customer value, from the starting point, has been researched that is to ensure proper focus on identifying the customer, consumer's in supply chain, as connecting the dots, with high value to ensure that the assignment are not complex, complicated, which is to be interlinked between customer's, consumer's, so as to enable to understand the needs of the customer's, consumer's in supply chain.

Secondary: Research: On connecting the dots in supply chain, also on enhancing the visibility, in digitalisation, is likely to result to find umpteen problems, opportunities, faster, as the suppliers of components, spare parts for Original Equipment Manufacturing, are liable to experience, disruption, risk, due to unforeseen conditions in supply chain.

Technical Data Collection: Integrating supply chain ability is to minimise the reduction in cost, by enabling the use of Geographical Positioning System, Radio Frequency Identification system, Bar Codes, Cloud computing, Block Chain, Internet of Things, on connecting the dots, by simulation model, in order to measure the performance on a functional level by collaborating with globalisation, with an objective to monitor on a data sharing process in supply chain.

Discussions And Findings:

Discussions: **Review:** Supply chain should ensure that proper delivery, on the value of the products among the customers, are the needs of the value addition, that is liable to be accepted by the customer's, consumer's, while planning the right type of value, right time, right price, right quality, right delivery, to ensure that the internal, external connecting the dots, are in an alternative manner to communicate the information, so as to comprise the decisions, (a choice made after thinking of several possibility) before the commencement of the operation in supply chain.

Findings: Sales considered in an organisation as always vital, sustainable, with a good customer, consumer value, not limited to the contract alone, that normally happens when every level of customer's, interaction on the organisation sales, are considered to be much better, so as to engage themselves to ensure better delivery, on the value of the customer requirement, on connecting with the dots, with better technology, also complete value chain to enable to deliver a proper value chain at every level in supply chain.

Teaching Note: An Emulation of Analysis: To adopt, develop, technology, competition, digitalisation, in supply chain, is also in creating an environment, where transformation in technology is likely to become a constant feature in supply chain, is also to ensure that the organisation, accepts the change with growing supply chain network, increasingly complex with faster network, more structure to improve the visibility, transparency, on connecting the dots, in order to enhance, ensure a proper value chain in supply chain

Future Work/Conclusions:

Global supply chain with multiple connecting the dots may likely to cause, affect disruption, risk, in order to build trust, with better sustainability, creating a better resilient is susceptible in supply chain.

Enhancing the supplier requirement in supply chain, by building a better relationship without on commitment on any incident or disruption, in conjunction is to build a better supplier management,

ultimately with better collaboration, cooperation, on connecting the dots of network, so as to connect the supplier's, within the organisation, on a mindset for better supplier management program in supply chain.

Teaching point: Evolution of the of the customer's needs, values, attitudes, disrupt the supply chain, in order to stay ahead digitalisation of technology, by addressing to the connecting dots, on the physical contacts with customers, suppliers, also providing investment on analytics, to gain resilience, flexibility, to customer's needs, on the dynamic needs, by assessing the skill internally, externally, on a virtual footprint in supply chain.

Analysis: Last mile delivery in supply chain, is considered as a major bottleneck, that is likely to raise costs, prevent optimization, increasingly as the commitments to time bound one-day-two-day delivery, across logistic providers, as they are experience the growing challenges on the less than that of the truck loaded, in the shipping on the connecting dots on low delivery density, as multi-vertical- delivery is one of the deep step towards addressing the low-delivery system problem, with the intervention, to overcome the organisation challenges in a most effective on the use of digital technology, predictive analysis, in order to achieve greater visibility, on better tracking on using Artificial Intelligence tools, data analytics, as is critical in establishing intelligent supply chain, that can optimize delivery routes as well as fleet management, tracking more efficient in real time in supply chain.

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The Role of Digital Agriculture in India

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Abstract
In India, more than half population is dependent on agriculture. For any developing countries like India, it is very important to focus on the areas where maximum populations income is dependent. Average income of farmers in India are very low and efforts have to be made to enhance their incomes. In the era of digitization, lots of efforts have been made to increase efficiencies of agriculture production and entire value chain but still the technology adoption rate is very low as compare to other areas. Here with list of issues in adoption of digital agriculture with the Indian context is presented and also a model has been proposed to increase the adoption rate.

India has extremely low farmer earnings; hence efforts must be taken to increase them. For this, it's crucial to improve the effectiveness of the entire value chain and agricultural production operations. One method for improving productivity and revenue in agriculture throughout the world is digital agriculture. In this article, we describe digital agriculture in the context of India and identify the opportunities and difficulties it faces. For the success of digital agriculture in India, we find that decreasing technological costs, user-friendly portable gear, pay-per-use rental models, regulatory backing, and leveraging the strength of farmer collectives are crucial.

Keywords: Internet, Agriculture, Economy and Technology

1 Introduction

If agriculture is to continue to feed the world, it needs to become more like manufacturing- Geoffrey Carr, The Economist

The focus area in Indian Agriculture, in the recent times has been on enhancing farmer incomes. This took the shape of official government policy after the clarion call of the Prime Minister of India to double farmers' incomes and the subsequent budget announcement1 to this effect.

The Committee on Doubling Farmers' Income (DFI) in its Report has appreciated the role of Digital Technology, which can play a transformational role in modernizing and organizing how rural India performs its agricultural activities. Digital technologies are finding increasing use in the agricultural value system, and farmers are increasingly becoming more informed, as various measures are taken to provide them ready access to technology and information.

The world population is projected to reach 9.6 billion by 2050. This would lead to a significant increase in food demand, even as arable land and freshwater resources are decreasing rapidly. Therefore, it becomes pertinent to upscale, upgrade, and modify the agriculture sector. Digital technology could be the answer to this problem. With Industry 4.0, the Internet of Things (IoT), Artificial Intelligence (AI), and Nano Technology, among others, are gaining prominence. It has revolutionized the industrial process and is bringing a significant change in the farming process and value chain. Globally, the farming sector is adopting genome editing and smart breeding technologies, and integrating digital AI-based technologies with microbial soil mapping to increase the output quality, develop pest and disease resistant seeds, etc. In India, digitization of the agriculture sector is well-accepted and recognized. The CII – Jubilant Bhartia Food and Agriculture Centre of Excellence (CII-

FACE), in its white paper on 'Advanced Technologies Reshaping Indian Agriculture,' outlines several examples and draws parallels between the growth of nanotech solutions in India and global pioneers. The paper focuses on the usage of nano materials in agriculture, such as targeted delivery of nutrients or pharmaceutical capsids for the detection and treatment of diseases and delivery of bioactive compounds to targeted sites, thus boosting the growth of the crop, among other innovative applications. It also outlines strategies for deploying these international and Indian learnings on the ground for accelerating the transformation of the food and agriculture sector. The paper aims to benefit the smallholder farmers through transformational innovation in agriculture, and the industry to develop more robust tech-enabled value chains.

The paper identifies the problem at the decision-making stage by the farmer. Farmers in India primarily rely on their traditional knowledge to select their crops. Meanwhile, the suitability of the crop is dependent on the soil type & quality, market demand, and weather pattern, among other factors. The report advises deploying AI-based technology that could factor in all these conditions and suggest the best crop to plant.

Source Image:https://www.ciiblog.in/digital-agriculture-the-future-of-indian-agriculture/

The CII paper further addresses the second most crucial aspect of farming, i.e., the cost of production. Here comes the role of digital technologies that can zero down on the type of seed, quality of soil preparation, soil health analysis, moisture percentage estimation, real-time crop analysis, and others to provide reliable information to the farmers.

The third stage of farming, i.e., the harvesting, can also be optimized with the help of IoT and analytical tools. The optimum time to harvest a crop ensures that the nutritional content of the crop is highest.

The use of digital tools is not only confined to the farming process, but also aids the farmer in the post-harvest process that includes pricing, storage, transportation, and logistics. Along with market insights, these tools help in maximizing the produce value and ensure the efficient and sustainable use of resources.

Although efforts to digitalize Indian agriculture have been initiated, the adoption of digital technology remains at a nascent stage as of now. CII identifies the prominence of segregated small-holder farms in the country, which makes data gathering a complicated activity, as the prime factor behind the slow adoption process. Limited percolation of mechanization tools and recurring natural phenomena like floods, droughts, etc. have also worked against the deployment of digital solutions in the sector. The absence of a centralized repository of different varieties of data stacks to be used in agriculture also makes it difficult for the efficient functioning of the AI/ML tools. CII has proposed to upscale the existing Public-Private Partnership (PPP) model in India. There exist several examples of the PPP models in India, such as MoA-IBM where the Ministry of Agriculture and Farmer's Welfare partnered with IBM towards a pilot study for farm-level weather forecast and village-level soil moisture data. The state governments have also forged several partnerships and are moving ahead in the required direction. CII has suggested strategies to enhance digital adoption in the country:

1. Build a robust digital infrastructure in the country constituting of satellite imaging, soil health information, land record, cropping pattern and frequency, market data, and others.
2. Use satellite data sources

3. Increase data efficiency through
4. Digital Elevation Model (DEM)
5. Digital Topography
6. Land Use & Land Cover
7. Soil Map
8. Land Registry
9. Administrative Boundaries
10. Establish market and demand side management systems.

Efficiently use data for drafting regulations, ordinances, and schemes such as the Pradhan Mantri Yojanas and create a mechanism for data sharing between different states, government institutions, and other public stakeholders. Different partnership models could be explored between the government and private sectors for the processing and analytics of the extensive data.

Promote research, development, innovation, and accelerate the validation and commercialization mechanism of the innovations. The use of technology has defined the 21st century. As the world moves toward quantum computing, AI, big data, and other new technologies, India has a tremendous opportunity to reap the advantage of being an IT giant and revolutionize the farming sector. While the green revolution led to an increase in agricultural production, the IT revolution in Indian farming must be the next big step.

1.1 Definition of Digital Agriculture

Digital agriculture is the use of new and advanced technologies, integrated into one system, to enable farmers and other stakeholders within the agriculture value chain to improve food production. Digital agriculture, sometimes known as smart farming or e-agriculture, is tools that digitally collect, store, analyze, and share electronic data and/or information in agriculture. The Food and Agriculture Organization of the United Nations has described the digitalization process of agriculture as the digital agricultural revolution. Other definitions, such as those from the United Nations Project Breakthrough, Cornell University, and Purdue University, also emphasize the role of digital technology in the optimization of food systems.

2 Objectives

Understanding digital agriculture and how it advances Indian agriculture is the main goal of this research paper. With regard to how to develop and support the agriculture sector in this Digital Revolution, several software firms have partnered with the Government of India.

3 Research Methodology

This research paper is based on secondary data, descriptive in nature and qualitative based. The researchers consulted secondary sources such as books, research articles, and policy documents, reports published by government and non-government organisations, online databases, and discussion papers for this paper. and policy documents of various committees appointed by the Government of India (GoI), Annual Report of Ministry of Agriculture and Farmers' Welfare, Confederation of Indian Industry (CII), etc.

4 Digital India and Initiatives in Agriculture Sector

Digital India was launched by the Prime Minister Shri Narendra Modi on 2 July 2015. Under Digital India Programme some of the important technology programmes initiated by Government directly connected to and benefiting farmers are as follows:

4.1 National e-Governance Plan in Agriculture (NeGP-A): The Government of India is implementing National e-Governance Plan in Agriculture (NeGP-A) in the entire country aiming to provide information to farmers free of cost on seeds, fertilizers and pesticides, Government schemes, soil health, crop management, farm machinery, fishery inputs, irrigation infrastructure, weather and marketing of agriculture produces.

(The Mission Mode Project, NeGP-A was introduced during the last phase of 11th plan, to achieve rapid development of agriculture in India through the use of ICT and has been continued during 12th plan as a part of State Mission on Agriculture. All the IT initiatives of Department of Cooperation will be integrated to enable the farmers in making proper and timely use of information available through multiple ICT channels including web portals, internet access points, touch screen kiosks and SMSs through State Wide Area Network and State Data Centre.)

4.2 Farmers' Portal: Farmers' Portal is a one stop shop for farmers and covers information on four important pillars of agrarian economy namely, agriculture, horticulture, fisheries and animal husbandry. Farmers can get relevant information on a wide range of topics such as seeds, fertilizers,

pesticides, credit, good practices, dealer network, availability of inputs, agromet advisory etc.

4.3 mKisan Portal: The mKisan Portal was launched on 16 July 2013. This Portal subsumes all mobile based initiatives in the field of agriculture and allied sectors. It brings together SMS (both push and pull), Interactive Voice Response System, and Unstructured Supplementary Service of Data (USSD). This Portal also enables all Central and State Government Organisations in Agriculture and allied sectors to give information/advisories/services to farmers by SMS in their language.

4.4 Kisan Call Centres (KCC): Kisan Call Centres provide information to farming community through toll free phone number. The restructured KCCs are now more professional with the technological innovations like Voice/Media Gateways, Call Barging, Voice Mail System, etc. 4.5 **Kisan Suvidha App:** Kisan Suvidha App is launched to provide information on five important parameters- weather, input dealers, market price, plant protection and expert agro-advisories.

4.6 Crop Insurance App: Crop Insurance Portal launched in June 2015 aiming to provide insurance services to farmers faster than before.

4.7 Agri Market App: This App can be used to get the market price of crops in market within 50 Kms of the device location. This App automatically captures the location of persons using mobile GPS and very beneficial for farmers, traders, extension workers, researchers and policy makers.

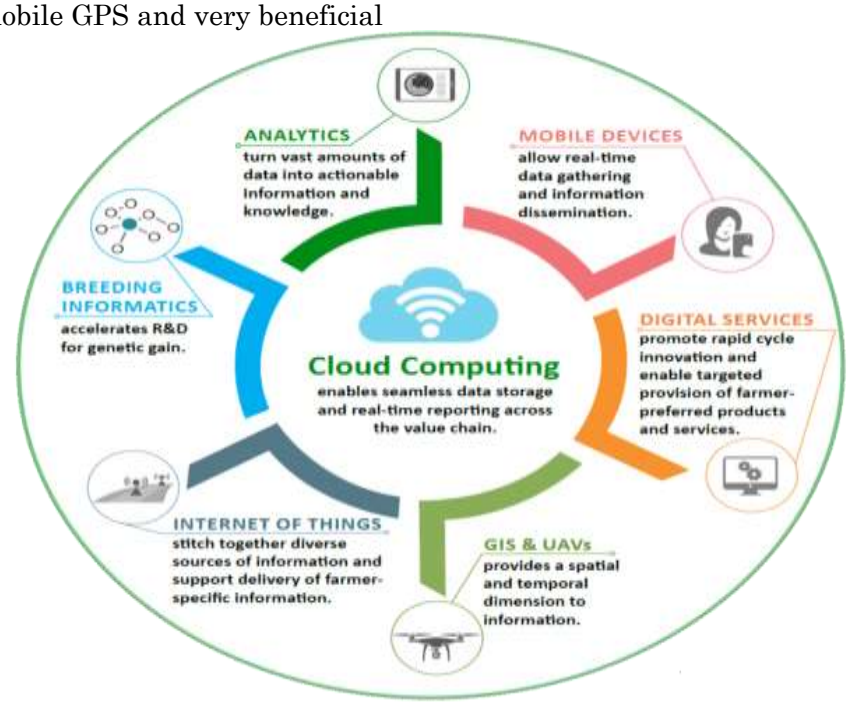
4.8 Soil Health Card (SHC) Portal: The Portal aims to generate Soil Health Cards automatically based on either Soil Test-Crop Response (STCR) formulae developed by ICAR or General Fertilizer Recommendations provided by State Governments.

4.9 Fertilizer Quality Control System (FQCS) Portal: The FQCS portal is a web based and configurable workflow application developed for processing of fertiliser sample collection, testing and generation of analysis reports.

4.10 Participatory Guarantee System-India (PGS) Portal: The PGS-India Portal is a web based application that enables small and marginal farmers to have easy access to the organic certification system

According to Emerj AI Research, Artificial Intelligence (AI) is steadily emerging as part of the technological evolution in agriculture and can be categorized into 3 main groups:

1. Agricultural Robots – to replace human labor intensive tasks by robots
2. Crop and Soil Monitoring – leverage computer vision and deep-learning algorithms to monitor crop and soil health.
3. Predictive Analytics – develop and use machine learning models to track and predict various environmental impacts on crop yield such as weather changes.



Source:https://www.icrisat.org/digital-agriculture/

5 Digital Agriculture to succeed in India the innovations must focus on:

5.1 Low cost technology: Lowering the cost of technology so that it is available and affordable for the smaller farmers: The average income of a farmer in India is estimated at Rupees 77,97625 (approx. 1000 US dollars) per year, according to the Dalwai committee report. This figure is itself explanatory of the precarious financial circumstances in which a typical farmer operates in India. Thus it is natural that for the farmer, his or her ability to invest financially in technology is very limited. Keeping this aspect in mind, it is imperative that the technology that is affordable as well as can provide financial returns in quick turnaround time (say a crop season), will be attractive to farmers.

5.2 Easily portable hardware: Plug and play hardware (ensuring mobility) has better chances of succeeding in India: As we have already mentioned, typical Indian farms are very small in size and 1-2 acres farm plots are the most common. Also, agricultural land leasing under various arrangements is widely prevalent in India. Thus, its commonplace to find that 1 season a farmer is farming on a particular plot of land but the next season the same farmer may shift to another farm plot. In such a scenario, equipment which is plug and play (that which can be easily installed and reinstalled and used for multiple locations during its lifetime) would definitely be more attractive for the farmer to pay and invest in.

5.3 Renting and sharing platforms for agriculture equipment and machinery: Due to both limited financial resources and small farm plots, renting and sharing platforms rather than outright purchase for equipment and machinery like tractors, harvesters etc. make eminent sense. As we have already mentioned, agriculture technology ('agtech') startups like EM3 Agriservices as well as Trringo are already extending their services and the market is very big and still wide open for scaling up in this respect of Digital Agriculture.

5.4 Policy reorientation towards facilitating Digital Agriculture: In recent times, there has been a focus on technology from the government side in India for the welfare of farmers. The direct income support schemes of the several state governments as well as the federal government spurred the focus on data about the numbers and identification of farmers to be supported through cash transfers directly in their bank accounts. These schemes required a digital database of farmers with certain details so that they could be implemented in short period of time. This implementation exigency was not possible by using the legacy paper based systems of data collection. To be sure, the unique biometric identifier, Aadhaar has also played a key role in facilitating the data collection and quick implementation and a digital farmer database was generated. Now, making use of such a database, one of the states, Telangana, which pioneered the direct income support scheme, is moving towards regulated farming.

6 Conclusion

India has digitally intervened in the agriculture sector through its policies and project. However, India lags in adopting digital technologies at the farm level as most of the initiatives are limited to governance purposes and provide information to farmers (Confederation of Indian Industry, 2021). The Report on Doubling Farmers Income by 2021 emphasised the introduction of emerging advanced digital technologies in agriculture. However, any government-led initiative will be successful when it receives maximum public participation. An ecosystem has to be created to digitalise agriculture in India. It is essential to promote digital literacy among youth in rural areas for unleashing the full potential of digital technologies. Institutions play a significant role in assimilating new technologies into society. It is required to upgrade the existing agriculture extension system. Agricultural institutions like State Agricultural Universities or Krishi Vigyan Kendras (KVKs) are essential to disseminate information related to Digital Agriculture technologies.

India is continually working to develop and implement regulations that would improve the sustainability of its agricultural industry. Partnerships between corporations and the government can aid in developing a smart agriculture industry, given India's dynamic corporate structure.

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An Overview of Indian Digital Agriculture

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Abstract
Acontemporarymethodoffarmingcalled"digitalagriculture"makesuseofdataanalyticsand digital technology to improve agricultural methods the vanguard of embracing digital agriculture to boost farmers' livelihoods, improve agricultural methods, and raise crop yields.Thegovernment has madesignificant efforts overtheyearsto assist and advancethe agricultural industrywith tried-and-true farming technology and encouraging legislation. The current advancements in digital farming technology will hasten expansion by providing greater agricultural yields and enhancing sustainability by lowering water use and pesticide use. This article aims to understand that Artificial intelligence (AI) and machine learning (ML), remote sensing, big data, blockchain, and the Internet of Things (IoT) are among the digital technologies that are upgrading agricultural value chains and what the main measures have been implemented by the government to promote digital agriculture in the nation to improve the production level of agricultural field.

Key Words: Digital agriculture, Artificial intelligence, Machine learning, Remote sensing, and Internet of Things, etc.

Materials and Methods:
The study is based on secondary data gathered from various Articles, Websites, Papers, Wikipedia, Theses, Journals, Books, etc.

Review of Literature:
Dr. Ranbir Kumar (2016) Agriculture and Digital India in this article discusses the All farmers, even those with little plots of land, those who are disadvantaged or impoverished, etc., stand to gain from using digital technology, which can change the Indian agricultural industry. When Technology is used for farming, information on the best agricultural practices, weather conditions, flood alerts, market pricing, and agricultural knowledge relevant to certain soil types and geographic regions may be sent more quickly.

Dr.P.Zearamane(2018) Digital technology and Indianagriculture This paper focuses on comprehending the idea of digital technology and the development of Indian agriculture. It can be concluded that the technology platform will bring the desired results in the agricultural sector, such as decreased costs, improved productivity and quality, improved prices, decreased risks, and ultimately a sustainable ecosystem.

E.V.S. Prakasa Rao(2022) Digital Agriculture -A Future Disruption in India In this paper, the authors discuss a very general appraisal given to sensitive people from farming agricultural sciences, industry, policymakers, and the general public on the need and role of digital agriculture in the modeling real-time data capture, use of digital farm data, internet of things, sensors, etc. has been seen as a step forward in enhancing the efficiency of farm processes however this concept is restricted to farming while the present paradigm needs to encompass the whole food systems.

Laurens Klerkxa, Emma Jakkub, Pierre Labarthe(2023) A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agendain this article authors discuss the from just highlighting this special issue and its seventeen pieces on the social, economic, and institutional dynamics of precision farming, digital agriculture, smart farming, or agriculture 4.0, this essay seeks to make a contribution to this. Five theme clusters of the existing social science

literature on agricultural digitalization may be found, according to an exploratory assessment of the literature: The adoption, use, and adaptation of digital technologies on farms; the effects of digitalization on farmer identity, skill, and work; the power, ownership, privacy, and ethics of digitalizing agricultural production systems and value chains; the relationship between digitalization and agricultural knowledge and innovation systems (AKIS); and the economics and management of digitalized agricultural production systems and value chains.

Objectives of the study:

1. To understand the different types of digital technologies in agriculture
2. To know the Benefits of Indian digital agriculture

Agricultural technologies used in digital farming

Agriculture is changing as a result of digital innovations like AI, ML, big data, blockchain, IoT, remote sensing, and remote sensing. Additionally, farmers may benefit from using digital technologies for agriculture to better understand and manage their crops. However, the development of digital agriculture in India must overcome significant obstacles.

1. Artificial Intelligence/Machine Learning (AI/ML) algorithms to increase crop yields, control pests, assist with soil testing, offer farmers actionable data, and lessen their burden.
2. Instantaneous, secure transactions, tamper-proof data on inventory, farms, and food tracking are all provided by blockchain technology. As a result, farmers do not have to rely on files to capture and keep crucial information.
3. 3)Distributed ledger technology (DLT), sometimes referred to as the blockchain, is a brand-new and cutting-edge approach to transaction management. A distributed database enables safe, open, and unchangeable transactions. Blockchain is being utilized more and more in digital agriculture to increase efficiency, transparency, and trust.
4. Remote sensing is the process of gathering pictures or other data from far-off places using sensors like satellites or buoys. Environmental factors like temperature, rainfall, or soil moisture levels may be mapped via remote sensing. The faults with crops may then be diagnosed, and variations over time can be tracked.
5. The phrase "big data" refers to vast quantities of challenging data to handle and successfully utilize. Digital agriculture has undergone a revolution thanks to big data, which has made analysis and prediction more effective.
6. 6)IoT (Internet of Things) is the expanding range of Internet-connected items, including automobiles and home appliances, that may interact with one another via sensors and software programs.

The following measures have been implemented by the government to promote digital agriculture in the nation:

1. The government has finalized the fundamental concept of the India Digital Ecosystem of Agriculture (IDEA) framework, which would provide the federated farmers' database structure. Additionally, the Department's schemes' databases have been merged. The IDEA would act as a cornerstone for developing creative, agri-focused solutions that make use of cutting-edge technology to significantly improve India's agricultural ecosystem. This ecosystem will assist the government in making plans that will increase the income of farmers in particular and boost the effectiveness of the agriculture industry as a whole.
2. In accordance with the National e-Governance Plan for Agriculture (NeGP-A), monies are made available to the State(s)/UT(s) for projects involving the use of cutting-edge technology, such as artificial intelligence (AI), machine learning (ML), robotics, drones, data analytics, and blockchain.
3. Since April 2014, the Sub Mission on Agricultural Mechanisation (SMAM) has been in existence.The program's goal is to "reach the unreached" by putting small and marginal farmers at the center of farm mechanization and providing them with its benefits. To do this, it promotes "Custom Hiring Centres," establishes hubs for high-tech and valuable farm equipment, distributes a variety of agricultural tools, raises awareness among stakeholders through demonstrations and activities that build

capacity, and ensures performance testing and certification at designated testing facilities.

4. An integrated national market for agricultural commodities is created via the National Agriculture Market (e-NAM), a pan-Indian electronic trading site that connects the Agricultural Produce Market Committee (APMC) mandis already in existence. Through a variety of e-NAM platform modules, such as the FPO trading module and warehouse-based trading module, digital services are offered to traders, farmers, Farmers Producer Organisations (FPO), and Mandis.
5. Funds are instantly sent to qualified farmers' bank accounts under the PM KISAN Scheme's Direct Benefit Transfer mechanism. Through the Farmers Corner of the site, farmers may self-register. To increase the program's accessibility, the PM-KISAN Mobile App was introduced. Through it, farmers may check the progress of their applications, update or change their names in accordance with their Aadhaar cards, and monitor the history of bank account credits.
6. The Integrated Scheme for Agricultural Marketing (AGMARKNET) supports public, cooperative, and private sector investments with backend subsidies to promote the development of agricultural marketing infrastructure.The (AGMARKNET) portal, a G2C e-governance platform that serves the demands of numerous stakeholders like farmers, industry, policymakers, and academic institutions, provides services by delivering information on agricultural marketing through a single window. The daily arrivals and pricing of commodities at several agricultural product marketplaces around the nation are made easier to access via web-based information flow.
7. Agriculture Infrastructure Fund (AIF): To mobilize a medium-long-term debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets through incentives and financial support to improve agriculture infrastructure in the country. Beneficiaries receive financial assistance digitally in the form of Interest Subvention and Credit Guarantees for setting up post-harvest management Infrastructure, including Farmers, Primary Agricultural Credit Societies (PACS), Farmer Producers Organisations (FPOs), Self Help Groups (SHG), and State Agencies/APMCs.
8. The National Mission on Horticulture promotes the general expansion of the industry, including the cultivation of bamboo and coconuts. A workflow-based web-enabled solution for MIDH financial aid is the HORTNET project. e-Government implementation in NHM is a special intervention since it necessitates complete transparency throughout every workflow procedure, including online application submission, authentication, processing, and online payment to the beneficiary's bank account via DBT..
9. National Project on Soil Health and Fertility: To give soil health cards to farmers across the nation as a basis for addressing nutrient deficits in fertilization practices. Farmers may trace soil samples by using the Soil Health Card Portal.
10. The development of the Kisan Suvidha mobile application will facilitate the communication of important information to farmers, including weather, market prices, plant protection, input dealers (seed, pesticide, and fertilizer), farm machinery, soil health cards, cold storage facilities, veterinary clinics, and diagnostic labs. Market information is used to better inform farmers about the markets where they may sell their goods, the current market prices, and the market demand. As a result, they are better equipped to decide whether to offer the goods at the right time and price.
11. More than 100 smartphone applications created by the Indian Council of Agriculture Research (ICAR), State Agricultural Universities, and Krishi Vigyan Kendras have also been assembled and posted to the ICAR website. These mobile applications, which were created in the fields of agriculture, horticulture, veterinary medicine, dairy, poultry, fisheries, natural resource management, and integrated subjects, provide farmers with useful information such as a set of best practices, market prices for different commodities, weather-

related data, advisory services, etc.

12. The government uses SMS to provide notifications to registered farmers about various crop-related issues.

India's digital agricultural benefits

1. It decreases production costs and boosts agricultural yield.
2. It improves the socioeconomic standing of farmers and reduces the use of chemicals in agricultural production.
3. It encourages the wise use of available water supplies.
4. It lessens adverse effects on the environment and ecology.
5. Farmers may improve output and production efficiency with the aid of digital agriculture.
6. Farmers may be able to address issues with food security and rely less on inputs like pesticides and fertilizer.
7. It can improve soil fertility and quality, and it can also promote better water management.
8. Farmers can increase the markets for their products by utilizing digital technologies.
9. Agriculturalists may make better judgments regarding farming practices by using digital technologies to give them current information on weather patterns, input pricing, etc.
10. They can also make it possible to follow crops from seed to sale, giving useful data on agricultural yields and possibilities for marketing.

Digital agricultural applications in India

1. Developing crop-specific precision farming methods
2. Making interactive maps of crop conditions and yields
3. Tools for crop modeling and simulation that are improved
4. The use of big data to improve crop breeding programs
5. The creation of sophisticated irrigation systems
6. The use of green infrastructure, including trees and rain gardens
7. Improving crop breeding initiatives
8. Controlling invasive species
9. Keeping track of and evaluating digital agricultural initiatives

Conclusion:

This article includes the concept of "digital agriculture" which refers to a group of technologies for communication, information, and analysis that provide farmers the ability to plan, monitor, and control the tactical and operational aspects of their agricultural production systems from pre-production to post-production. Since data is an essential component of digital technologies (such as artificial intelligence and satellite image processing), it serves as fuel for digital agriculture practices. To develop and execute innovations and interventions, it is necessary to have access to accurate and current data on weather patterns, soil types, markets, crop varieties, and crop output. To enable effective data access for many stakeholders and to decrease the time and expense of digital intervention, it is necessary to establish a trustworthy and centrally located digital data repository. Data exchange, validation, interoperability, and privacy procedures are also required. Establishing data-driven, reliable rules and regulatory agencies is crucial to promote standardization and interoperability.

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Reviewing the Digitalisation of Education in Rural Areas during Covid-19 Pandemic

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Abstract:
Technology has put impact on various fields, even it influenced on education is transforming ata rapid pace from being traditional chalk and talk based and book based study to internet based education system. The traditional class rooms with black boards are being replaced by smart classes fitted with audio and visual system followed by PPTs presentation. Teachers are been second by online teaching assistance by way of online tutorials and teaching aids provided by a number of online learning applications such as BYJU'S, Cue math, Guru. in, EPathashala, Google Classroom etc., which are providing on spot solutions to students. Text books are being replaced by e-books. This change in the education system has produced vast advantage in terms of horning knowledge base of students and other side of it as well, that most of the times students thinking that they can access the information on line are not focused enough on class lectures and in most cases they do not give expected regard to their teachers. The students of today are becoming rude as well. At the same time since loads of information is available to them easily, students are involving themselves in unwanted activities and they are exposed to information which is not meant for them at the current age. In this background the paper tries to find what the various electronic mediums available to students, what the advantages of digitization of education are and what adverse impact has been on students and society on over-reliance on digital way of education. The paper is based on secondary sources of information gathered from various authentic websites, research papers, newspapers and magazine articles.

Keywords: Digitalisation, Education, Rural, Pandemic, pupil

Introduction:

Education is the basic right of every child, which helps to educate, enlighten and empower children to become successful in life. Digital education is the trending topic of today's generation as things are getting digitalized and moving to become smarter, and the field of education is not excluded from it. The global pandemic of Covid-19 made the whole world shut schools overnight and paved the way for digital learning without any alternatives. Digital education is the use of technology and digital tools to teach and learn. In general,people of every country have certain issues with their education like, poverty, lack of transportation, lack of infrastructure and support, etc., Karnataka is not exempted from this.The overnight implication of digital education means online teaching caused many problems. The rural pupil of Karnataka struggled with infrastructure, lack of awareness, sedentary lifestyle, stress,etc.Even the teachers who didn't have proper knowledge regarding the management of digital tools and less awareness try their level best to assist them in learning. As a result of digitalized education Google Meet, Zoom, YouTube, Television, Whatsapp, E-book,etc become popular among rural folks too. Despite of Disadvantages, online teaching taught students to be digitalized as huge loads of information are available just at the click of a button to the user to quench the thirst for knowledge easily.

Objectives:

1. To evaluate the impact of digital education in rural areas.

2. To highlight the Problems of rural students to adjust with the digitalization of education.
3. To extend the scope of digitalization to improve the teaching-learning process in rural areas.

Research Methodology:

Area of study:

TheMysore district has been selected as a model study because of its relatively good location in Karnataka and the selection of sample villages is done by stratified sampling methods, however, the choice is random. Of a large number of villages, 50 villages were selected in Mysore District.

Sampling Technique

The sampling unit is confined to the Mysore district of Karnataka state. Includes 200 Teachers and Students responding sizes from rural areas. The sample size was 200 respondents from rural areas. The sampling design was implemented using a simple random sample based on availability, and convenience.

Sampling Design:

A simple random sampling method is adopted on the ground of availability, convenience to access and level of participation. An almost equal number of respondents has been taken in the age group of 10-20, 20-30, 30-40, and 40-50 above years across the different income levels and education. The respondents selected were media-literate people who had exposure to Digitalisation.

Impact Of Covid-19 On Karnataka Rural Students:

The sudden declaration of lockdown and closing of schools made to implement digital education in the form of online classes, Television recorded classes and circulating essential notes via WhatsApp, Telegram, and Email. The teachers witnessed this unprecedented scene and put them into a new change. Online classes were conducted via apps like Google, Meet, zoom, teachmate, Microsoft group apps, etc. Then the government of Karnataka started broadcasting series of lessons onall subjects on the government-owned DD Chandana channel in both English and Kannada mediums by expert teachers. For circulating notes, teachers were after WhatsApp, Telegram and Email. Then the government assisted students with the Deeksha app with a QR code given in the textbooks. Later the government of Karnataka also established a scheme named Vidyagama, to facilitate teaching where every day a teacher has to go to a

Certain village to teach children for two hours. The government also promoted students to their next classes without examination.

But the most suffered were the rural students because they are far away from the city without the basic infrastructure to access online classes. They had issues with network, connectivity, smartphones, TV, laptops, lack of support, lack of interest, money, and loads of stress.

The poor parents couldn't offer them electronic gadgets due to poverty. Network issues were as common as their undeveloped geographical area. Due to online teaching,Most of them lost interest in learning as it was subject to technical issues,a new way of lecturing method, No face-to-face interaction, group learning,and comprehensive evaluation. The government and Low castprivate schools are affected as most of them don't have e-learning resources. The students in addition to missed learning opportunities, no longer have access to healthy meals as well during this time and have been subjected to both economic and social stress. The society witnessed parents selling their jewelry, particularly a mother sold her knot (mangalasutra)toBuy a televisionfor her daughter in Karnataka.

On a positive note in Mysore district precisely in a few villages of T.NarsipuraTaluk, the NGO named Pratham Mysore introduced the student monitoring programme(SMP)in which one reasonably educated Adult call a mentor is paired with one student in a village to guide and motivate them, besides discussing subjects, importance and interest to the children. The concept is rooted in the belief that continuity of learning holds the key to eliminating any learning loss.

Advantages Of Digitalisation Of Education On Rural Students:

1. **Accessibility**:the student can access to his or her learning process irrespective of the place they live in. It breaks the barriers of rural and urban. Also help the rural children affected with transportation system.
2. **Introduced to digital teaching-learning:** online classes and learning introduce them to the digital world of teaching-learning process. This created an awareness about changing ICT and teaching trends.So both teachers and students upgrade to digital learning.
3. **Documentation:** the needed information could be stored easily in the form of screenshots, recorded videos, sent or received documents and files.

Disadvantages.

1. **Lack of infrastructure:** rural students were having no strong internetconnections, computers or smartphones to attend online classes. Moreover, they have to deal with intermittent power supply and older electronic devices, which are often hindrance to seamless access. Students were heavily dependent on their family member's mobile phones for learning. Furthermore purchasing data plans for learning also cause headache to families who face financial constraints.
2. **Lose of concentration:**due to the new way of teaching,there were chances of loss of interest as it was heavily teacher based. To be just present in the class, they may after games, websites, social media and entertainment in the background.
3. **Health issues:** sitting too much with a cell phone and computer cause, vision problems, headache, muscle and joint pains. Due to Prolonged sitting create a lot of stress and anxiety among children.
4. **Lack of socialising skills:** as there was no socialization, unlike school. They were lacking with social skills. Sometimes they might not talk well with their family members as they were heavily dependent on phones.
5. **Addiction**: In the name of online classes they may addicted to watching television, cell phone usage, social media, games, entertainment, etc. which made them to be isolated from family environment and isolated themselves that may cause some mental health issues.
6. **Absence of physical exercise:** because of lock down and online classes Students were subject to sedentary lifestyle that may cause physical ailments like bodypain, over eating, obesity and health issues.
7. **Mental health issues:** unlike in school, theycan't get a friendly group of friends to share their emotions and feelings, which may cause introversion, anxiety, stress and depression. Moreover, the circulation of negative and exceeding news of COVID-19 may cause negative fear among them.
8. **No place for evaluation:** the children didn't have a continuous and comprehensive evaluation and unlike they had in school, so it was difficult for teachers to measure their achievement. If the test or examination is given they would copy from other sources online. Moreover, the government promoted

them to the next classes without any exams.

Conclusion:

Education is the basic need of every child which they can't be deprived of due to the barriers they have. Rural students have been struggling to adjust themselves with digital learning because of basic infrastructure, in poverty-stricken state. But they have successfully tried their hand at experimenting that too.After the pandemic the government should take appropriate measures to provide amenities, training teachers, preparing resources for future consequences. Better to provide appropriate and student-friendly digital resources and tools for students. It's always better to take opinions from concerned authorities and educationists to frame some rules and implement them. Students should be given an opportunity to express their feelings on the problems faced during pandemic as they are going to use technology and Digital tools in future and in higher education.

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Impact of Digital India on Voter's Behaviour: A study

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Abstract

This paper explores the impact of the advent of the Digital India on elections and voter's behaviour. The aim of the paper is to study the Political system and elected officials in India have a very long term relationship with elections. The study also defines the political system in terms of the elections and voting behaviour in India. The fundamental factor of any democracy is voting, through which citizens select the leaders of the country by the Political parties and the candidates they support. In the democratic process significant process is voting. The biggest democracy in the world India. The right to vote for the candidates of one's choice is granted to voters. The elected Indian government has a five-year term in office. Elections are held every five years during which voters select whether to support the current ruling party or give a different candidate a chance. Because of this, voters are crucial to the electoral process. However, political parties are currently taking into consideration the nation's young voters to confidence. Parties build their platforms while taking into account the needs of young people.

Election manifesto is main agenda by which is typically referred to as the objectives, motives, or beliefs of a particular leader, organisation, political party, or government, depending on who releases it. A manifesto often includes a viewpoint that has already been expressed and promotes new ideas with directives for making changes in the future. The conclusion of this research is to observe whether the young voters are really making any significance changes in the voting behaviour. The promises made by the parties in the elections make huge difference for the young voters to decide their future. In the mostly digitalized world, digital literacy is becoming more and more popular. If a person uses a mobile phone or laptop, for example, they may believe that doing so digital empowerment. Hence the paper provides an in-depth analysis of the scheme impacts on Voters Behavior and demonstrating its efficacy in achieving an end-to-end verifiable digital system and voting process.

Keywords- Elections, Behaviour, Polity, Manifesto, Media, Technology, Digitalized World, Development, Transforming India, Electronic Media, E-Voting.

Introduction

In a democratic nation, elections are extremely important. We all know that a democracy is a government that is run by, for, and on behalf of its citizens. Indian governments, both at the national level and in the constituent states, are chosen for terms of five years. The most crucial factor in determining the course of a democracy is election, Indian population participates in political process by casting their ballots whenever required. The people who vote and support only those candidates are the in real power behind elections. The election is important because people choose their representation. They should have the freedom to elect only the right kind of people. Indian republic is 75 years old, but in many countries absolutism and military rule is prevailed over years. The success of republic isn't only in India, but in other countries too there's a lot for the future of democracy. A political campaign is a root of choices. "Political campaign" before the choices is the truly important aspect in the Indian democracy. A political campaign is an organized trouble which to impact the decision- making process within a specific group. In democracy, political campaign constantly refers to electoral campaigns, by which representatives are chosen or leaders are decided. Free and fair elections are cornerstones of democracy. In India, electronic voting machines (EVMs) were introduced with the objective of reducing electoral fraud. Hence the study looks into

the phased roll-out of the EVM's in elections and impact on electoral fraud, democracy, and development.

Problem Statement

Digital India project impacts on Voters behaviours and Voting System of Nation. It provides the online enrollment form to government before advancing and makes the voters to cast their vote offline and online. This system is developed with security, legally and peoples friendly.

Scope

The scope is limited to the Digital India programme and also to ensure that the people vote to their leader with accountable. The process also includes the marginalised and common man of the society, in the primary level valuable and concentrate on creating, managing and running a secure web Digital voting process. Adding number of voters select as individualities will find it easier and more accessible, especially that type of system in foreign countries.

Review of litretre:

Epp Maaten, on remote e-voting: This paper gives an overview about the Estonian e-voting system. Paper discusses how an e-voting system may be made understandable to gain the public's trust. How the idea of e-voting is built to withstand some of the major obstacles of distant e-voting: safe voter authentication, assurance of voter privacy, providing the option of a re-vote.

Paul Gibson, Explored E-voting: the past, present and future Electronic voting systems are those that rely on transparent voting processes and cryptographic underpinnings to achieve their goals. The proposed plan complies with the essential criteria for e-voting on some electronic technologies to ensure their proper performance. Many of them rely on such type of technologies to communicate election-related information. Regarding verifiability, dependability, security, anonymity, and trust, relying on one or more communication channels to conduct elections presents numerous technical challenges. Voting behaviour changes have a wide range of social and political repercussions. When sophisticated communications technology is used in the process, the role of election officers and (independent) observers vary. For many years, electronic voting has been used in a variety of elections across the world.

Kashif Mehboob Khan discussed in his article about the Secure Digital Voting System based on digital technology: Since the 1970s, electronic voting, often known as e-voting, has been utilised in a variety of ways with important advantages over paper-based systems, including increased efficiency and decreased mistakes. However, there are still difficulty to overcome before such systems are widely adopted, particularly in terms of enhancing their resilience against potential flaws. Digital voting is a cutting-edge disruptive technology that has the potential to increase the overall robustness of electronic voting such as end-to-end verifiability. His paper outlines the proposed electronic voting system's implementation utilising the chain link like multi task platform.

Anooja(2016), In her study Internet Voting System and Digital India, explored about the primary problem with voting in India is that people are less interested in voting since they have to go to a polling station to do it. The expansion of computer networks, fibre optic connections, the number of polling booths, and the internet has improved the convenience of online voting. Online voting increases the number of people who vote in national and local elections.

Mendez and Serdült, Sciarini et al.,(2021), The authors discussed in their study, about the E-Voting system for voters turnout, and to whom? may also be hampered by citizens' security concerns Fears of vote manipulation and fraud may discourage voters from using e-voting. In the extreme case, assuming e-voting is offered to citizens as the only voting mode, concerns about the integrity of elections might even decrease turnout. Finally, while e-voting decreases the direct and objective costs of voting, it does not necessarily break down the most important barriers of political participation, such as political involvement and the cognitive efforts to form an opinion.

Germann and Serdült (2017), discused in their study as what makes reliability to internet voting? There are evidences from the roll–out of internet voting in Switzerland. Generally can be seen as a hard case with respect to e-voting effects was introduced in addition to an easy-to-use form of postal voting and to voting at the polling station. This obviously limits the virtuous effects on

turnout that e-voting can have. If such effects are at work in Swiss case, we can be confident that they also hold in contexts where a convenient voting mode such as postal voting is not available.

5.Objectives of the study:

1.To understand the Digital India in india.

2.To study the Impact of digital India on Voter's Behaviour.

6.Method and Data collection :

The data used for this research paper is secondary data Such as database, Books, Articles, journals, various magazines and News papers.

7. Digital India scheme in India

Digital India was an initiative taken by the Government of India for providing high-speed internet networks to rural areas. It was launched by Prime Minister Narendra Modi on 2 July 2015. Similar to the prime minister Mr. Narendra Modi's "Digital India" push to empower the youth and connect them digitally with the world. The main motive of this scheme has involved the youth in the digital world. Digital India is a crusade launched by the Government of India to ensure that government services are made available to citizens electronically by bettered online structure and by adding broadband connectivity or by calling the country digital implementation in the field of technology. It was launched by Prime Minister Narendra Modi on 2 July 2015.

vision of digital india

The vision of Digital India aims to develop India into a digitally empowered society and knowledge economy by leveraging Information Technology (IT) as a growth engine of new India. The vision of Digital India is centered on following three key areas:

1. Infrastructure as Utility to Every Citizen
2. Governance and Services on Demand
3. Digital Empowerment of Citizens

Scope of digital india

The overall scope of this programme is:

1. To prepare India for a knowledge future.
2. On being transformative that is to realize IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow)
3. Making technology central to enabling change.
4. On being an Umbrella Programme – covering many departments.

The programme unites together a large number of ideas and thoughts into a single comprehensive vision, so that each of them is seen as part of a larger goal. Each individual element stands on its own, but is also part of the larger picture. The linking together makes the Mission transformative in totality. The Digital India Programme will pull together many existing schemes which would be restructured and re-focused and implemented in a synchronized manner. The common branding of the programmes as Digital India, highlights their transformative impact.

8. Impact of Digital India on Voter's Behaviour:

Increased efficiency

The Digital India involves in increasing efficiency by making Election System flow easier, faster and more efficient towards achieving the growth by helping the voters through paperless work. Digital India helps in reducing its hours of Election work with paper and builds their confidence. Digital India helps to achieve the key task and voting System to move forward much faster.

Provides better services

Digital India is providing better pathway to collect voter's needs and also helping to meet their requirements. With the same the party or election contesting candidate can also increase their votes and voters perceptions margins. The goal of Digital India is also enhancing the voters participation and Political involvement increasing the contesting advantages of election in the path of good way. Moreover, Digital India attempt to reform the voting system. However, this change doesn't happen just like that, their needs a strategy and the tools that will support our voting and strategic goals of voters perceptions, observations, election process, election progress and transparency.

Increasing the voting

Digital India has a proven impact on increasing the voting, improving quality of election and boosting voters access to election system and process.

Polling impact

As seen before the previous attempts to measured the impact of voting from Digital India scheme have focused primarily on assessing the political effects of widespread

access to either wireless or broadband technologies.

Transparent Election:

Even elections in India from the grassroots gram panchayat to the parliamentary constituencies are held transparently because of the use of social media and media, as up-to-the-minute news reaches every voter.

Ballot Counting Process without Delay:

The use of technology in the process of counting votes and in the elections will enable the election results to be announced quickly.

Election expenditure will be reduced by:

The use of technology in elections will help the Election Commission and the candidates contesting in the elections to campaign and complete the election process at a low cost and hence elections can be conducted at a low cast.

Influencing vote-choice through election ad campaigns:

During the early stages of the Election campaign, the impact of political advertisements on public opinion. Among other things, this paper examined assigned launch dates and volume of TV advertisements, focusing on the incumbent's campaign.

Secrecy:

As discussed, intermediate results affected perceptions of the fairness of the voting process. In combination with other characteristics such as vote recalling and offline discussions, intermediate results contributed to a more interactive voting process. Privacy concerns were not prominent in the study, even though users voting actions were visible on the system. Clearly such concerns are dependent upon the context and familiarity of the group members. Overall, inconsistent attitudes towards privacy were uncovered, with more senior members of the group claiming that the partial violation of privacy engaged them to participate and to announce their views, whereas less affiliated members say that total ambiguity would have been more appropriate. These findings reflect on the power structures of the group and further support the application of specially designed technology results in the further democratization of the context. Further research is required to understand how manipulation of the design to provide privacy in the poll according to the context's hierarchy could support participation.

Conclusion

Digital India has a lot of impacts over the traditional voting system and voter's behaviour. Some of these impacts less influence and are subtlety rapid in the generation of results of election through improved voting system, easy availability of election strategies, information, and low threat of mortal and digital crimes can overcome . It's veritably hard to develop voting system which can allow security and sequestration on the high position. Rural and Unborn development concentrated to design a system which can be easy to use and will give security and sequestration to voters making their votes on respectable position by proper authentication and processing. It's easy to use and it's lower time consuming. It's veritably easy to remedy.

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Digital India and Its Impact on Financial Inclusion: A Critical Assessment

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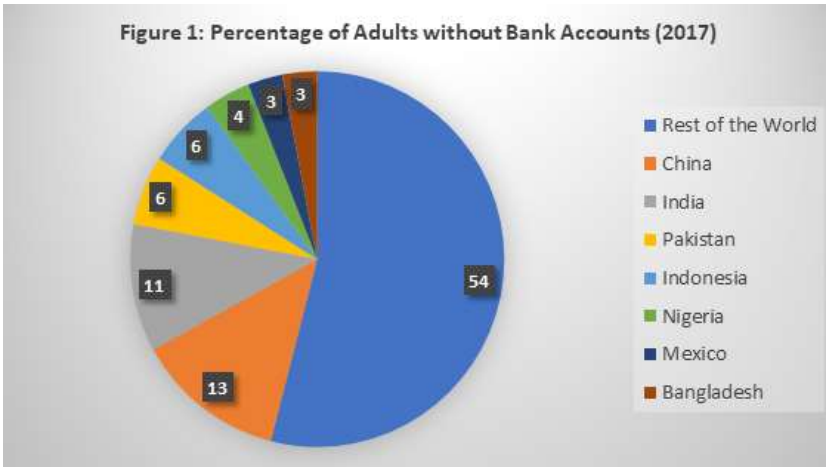
Introduction

The Financial inclusion relates to connecting marginalised and the underprivileged in the society to the mainstream economy, by means of providing financial literacy and access to banking and financial services. It is a multidimensional approach that involves bringing on board various stakeholders from the government and the people. India, with a population of more than 1.3 billion, has a large number of people who are still out of the formal financial net. As per the World Bank, about half of India's population is financially excluded (World Bank 2017a). On the other hand, a survey by Standard & Poor's Financial Services estimates that only 24% adults in India are financially literate. Although the situation has improved considerably over time, owing to the major banking and economic reforms undertaken in recent years, there still exists both a great need and the potential to tap into this unbanked population and bring them into the financial net. In a diverse country like India, financial inclusion is a critical part of the development process. Since independence, the combined efforts of successive governments, private institutions, and the civil society have helped in increasing the financial-inclusion net in the country. There has been an emphasis to provide last-mile connectivity of banks and other financial institutions.

In recent times, the biggest fillip to the efforts of financial inclusion has come from Digital India. Various initiatives under Digital India, like easy banking facilities for all, simplification of procedures relating to financial instruments like Permanent Account Number (PAN), unique identification process of Aadhaar, simplification of tax procedures through the goods and services tax (GST), etc, have contributed significantly to the efforts of financial inclusion in the country.

This article analyses the impact of such initiatives, and the scope of Digital India in converting traditional manual procedures of availing government services into electronic ones. Besides, the impact of Digital India on important sectors, such as direct and indirect taxation structures, banking institutions, and delivery of government schemes would be assessed.

The efficacy of Digital India vis-à-vis financial inclusion can be measured by the growth in digital transactions and the proportion of the poor and their ability to access banking facilities. According to the World Bank's Global Financial Inclusion Database or Global Findex report (2017), 80% Indian adults have a bank account—27 points higher than the 53% estimated in the Findex 2014 round. The Findex 2017 report also estimates that 77% Indian women have bank accounts, against 43% and 26% respectively in 2014 and 2011 (Qazi 2019). These figures, however, contrast with the statistics from the other spectrum. According to the same report, about 190 million adults in India do not have a bank account, making India the world's second largest nation in terms of unbanked population after China (World Bank 2017b). Figure 1 below provides a break-up of the unbanked adult population globally.



Source: World Bank 2017

1.2 Financial Inclusion and the Evolving Scenario

The concept of financial inclusion has evolved over a period, and has been studied by policymakers and researchers. India has developed its financial ecosystem and has brought about major changes to increase the last-mile connectivity of financial services to its people. The intent has been to provide the underprivileged and marginalised access to financial resources to improve their lives. It has been observed that financial inclusion has the potential to reduce poverty, create jobs, among others.

The lack of inclusive growth, due to large inequalities in economic and/or social realms, often translate into inequalities in terms of opportunities, leading to huge disparities in the critical sectors of health and education (Goldberg 2019). Earlier, private institutions did not engage with the poor as customers on a significant scale. This has now changed, and there has been an active participation of the private players, as they have also realised that bringing the poor into the financial net is beneficial to their business models as well.

Traditionally, institutions like the Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD) have taken initiatives to promote financial inclusion. These include the opening of bank branches in remote areas, issuing Kisan Credit Cards (KCC) using information technology to spread awareness and literacy, linkage of self-help groups (SHGs) with banks, increasing the number of automated teller machines (ATMs) and business correspondents, increasing credit facilities and insurance covers for the marginalised people, among others. According to the RBI, Kerala, Maharashtra, and Karnataka have achieved high financial inclusion (Index on Financial inclusion (IFI) > 0.5), while Tamil Nadu, Punjab, Andhra Pradesh, Himachal Pradesh, Sikkim, and Haryana have been identified as a cohort of medium financial inclusion (0.3–0.5). The remaining states have been categorised as states with low financial inclusion states (< 0.3). The above figures are important, because they indicate three critical variables of financial inclusion, namely penetration of financial services (number of adults having bank accounts), availability of banking services (number of bank branches per population of 1,000), and the usage of the financial services (measured as outstanding credit and deposit) (Chattopadhyay 2011).

Perhaps, the biggest fillip to the efforts of financial inclusion in the recent years has come from Pradhan Mantri Jan Dhan Yojana (PMJDY). Launched in 2015, its objective is to provide no-frills bank accounts to every individual above 10 years of age across the country, even in the remotest parts. As per the estimates in March 2020, the total number of beneficiaries of the programme have been more than 380 million (Ministry of Finance 2020). The introduction of unique identification Aadhaar number has also contributed to the financial inclusion in the country. By significantly changing the concept of individual identity, Aadhaar has not only brought about a secure and easily verifiable system but also easy to obtain as well to help in the financial inclusion process. The combination of Aadhaar, PMJDY, and a surge in mobile communication has reshaped the way citizens access government services.

1.3 Digital India and the Reliance on Technology

The concept of Digital India is driven by the idea that a large country like India cannot afford to rely on traditional public service delivery mechanisms. With limited resources and a huge population to cater to, the use of technology has been ramped up in order to provide government facilities to maximum numbers of people, and, in the process, improving transparency and accountability.

The expectations of citizens with regards to the government include on-demand availability of public services, single-window online platforms, one-point help centres, and effective communication and alerts. Digital India aims to meet these expectations by building electronic portals for service delivery, creating necessary support infrastructure, integrating government services and databases, and enhancing the skills of the stakeholders through awareness programmes and trainings. These measures are being implemented in the Income Tax Department, Central Board of Indirect Taxes and Customs, postal department, banks, and public sector units, among others.

The latter section deals with the benefits accrued to beneficiaries of various government schemes, the availability of facilities to make payments, and existing bottlenecks and challenges to Digital India.

1.4 Integration of Financial Services

As mentioned above Jan Dhan–Aadhaar–Mobile (JAM) trinity has a positive impact on the banking sector and financial inclusion in the country. Jan Dhan accounts are no-frills accounts which can be opened with ease. These accounts are linked to Aadhaar numbers of the individuals, which in turn is linked to the Direct Benefit Transfer (DBT) scheme. With the launch of JAM services, there has been a significant improvement in terms of targeted and accurate payments. They have also helped in weeding out duplication of entries, and bringing down the reliance on cash mode of payments. Since its pan-India roll out in 2014, 488 schemes and services from 63 ministries have been brought under the DBT (DBTM 2019a). Similarly, until March 2020, the total number of beneficiaries under Aadhaar-enabled services had been 436.98 crores (DBTM 2019b).

1.5 Proliferation of Payment Facilities

The launch of Digital India has brought about a change in terms of payment facilities available to the stakeholders, especially from the underprivileged sections. KCC, general credit cards (GCC), and mobile banking facilities have been encouraging the poor to participate in the digital ecosystem. With the strengthening of the Unified Payment Interface (UPI) by RBI, digital payments have been made secure, compared to the past. To this end, many payment gateways have come up to further improve digital transfers.

As per a World Bank report, the total volume of digital transactions in India (including various payment channels and mechanisms, such as net banking, mobile banking, debit cards, credit cards, prepaid instruments, mobile wallets, among others) grew by compound annual growth rate (CAGR) of 30% from 1,142 million in April 2015 to 1,928 million in April 2017. On the other hand, mobile banking transactions grew more than five times, from 19.75 million in April 2015 to 106.18 million in April 2017. Similarly, mobile wallet transactions grew from 11.96 million transactions in April 2015 to 387.6 million transactions worth Rs 15,408 crore in January 2020 (World Bank 2018; RBI 2020). As a result, anyone with a valid bank account and mobile phone can make quicker and easier payments. The payment system has been made more accessible due to offline transaction-enabling platforms, like Unstructured Supplementary Service Data (USSD), which makes it possible to use mobile banking services without internet, even on a basic mobile handset. On the other hand, the Aadhar-enabled payment system (AEPS) enables an Aadhar enabled bank account (AEBA) to be used at any place and at any time, using micro ATMs.

1.6 E-governance Platforms

There have been efforts to increase the scope of Digital India to align with the working of multiple departments and government schemes, in meeting the objective of financial inclusion. Several departments and government schemes have been brought under the ambit of Digital India. This has particularly paid significant dividends in the area of direct taxation and for the Income Tax department, due to the introduction of e-governance platforms. The key services, like income tax returns (ITR)

filing, tax deducted at source (TDS) compliance, and refund delivery mechanism, have been made online.

Out of the 66.8 million ITRs filed in the financial year 2018–19, 65 million ITRs (98%) were filed electronically, and 95% of the refunds were electronically remitted to the taxpayers (Income Tax Department 2019). So, one does not have to run from pillar to post for a refund. On the compliance front, 1.5 million notices/letters were issued electronically in fiscal 2017–18, and 89% of all notices and letters were delivered through emails (Income Tax Department 2018). All these initiatives have proved to be significant as they ensure that financial inclusion expands to other institutions, and not just confined to the banking sector. The reforms brought by the GST platform have also ensured that small and medium scale enterprises (SMEs) come under the ambit of financial inclusion. The GST has brought about a robust electronic filing and monitoring system, which uses pre-filing of information in forms and integration of databases. This reduces the compliance burden of assessees, particularly the SMEs, and motivates them to be a part of the financial system. As of August 2019, 12 million taxpayers were registered on the GST system with the total number of payment transactions numbering more than 100 million (GSTN 2019).

Under Digital India, information and communication technology has provided convenient tools to spread awareness about financial schemes and services. The RBI initiatives, such as Project Financial Literacy, the engagement of business correspondents to provide banking services to the poor, Unified Payments Interface, among others, have provided a shot in the arm to the efforts of financial inclusion (Karuna 2018).

1.7 Bottlenecks and Major Challenges

There is no doubt that India has significantly improved the financial inclusion of the marginalised sections, and Digital India has turned out to be an important intervention. However, the digital divide is too wide and there exist many bottlenecks and challenges which need immediate attention. To begin with, High Level Principles for Digital Financial Inclusion, published by the G20 under the rubric of Global Partnership for Financial Inclusion in 2016, provides useful insights to address the issues impeding financial inclusion, and how digital technologies can help in the process (World Bank 2017b). These include the promotion of financial services as a national plan, the need to balance innovation and risk, providing legal and regulatory frameworks, and expanding the digital financial ecosystems, among others. Similarly, it suggests the need to ramp up investments for digital tools that can help integrate systems and databases making it easier for auditors and regulators to process information. It also highlights that the advent of digital systems would mean huge data volumes and without the presence of adequate data mining and data analytics, countries would have to handle too much data with limited outcomes.

The most common barriers to the digital financial inclusion include the non-availability of suitable financial products, lack of skills among the stakeholders to use digital services, infrastructural issues, teething problems between various systems, and low-income consumers who are not able to afford the technology required to access digital services (Niranjan 2017). Another challenge to digital financial inclusion arises from the attitude of the stakeholders. For instance, take the case of Jan Dhan bank accounts. When the scheme was launched in 2015, banks were given ambitious targets to open accounts for the marginalised. This has resulted in the opening of many dormant accounts which never saw actual banking transactions. All such activities incur costs on the institutions, and thus, huge operative costs only proved to be detrimental to the actual objective. To avoid these counterproductive outcomes, it is important that all stakeholders participate in such programmes with proper intent and not just for the sake of it.

Another major bottleneck faced by Digital India, with respect to financial inclusion, is the heavily dominated cash economy in the country. The data from RBI reveals that cash circulation has increased in 2018 after demonetisation. As per a report of the International Labour Organization (ILO), about 81% of the employed persons in India work in the informal sector (ILO 2018). The combination of a huge informal sector along with a high dependence on cash mode of transaction poses an impediment to digital financial inclusion.

There is also a gender dimension to financial inclusion in the country. According to the

2017 Global Findex database, 83% of males above 15 years of age in India held accounts at a financial institution in 2017 compared to 77% females (World Bank 2018). This is attributed to socio-economic factors, including the availability of mobile handset and internet data facility being higher among men than women.

1.8 Conclusion

In conclusion, for the success of digital initiatives, there has to be a multidimensional approach through which existing digital platforms, infrastructure, human resources, and policy frameworks are strengthened More importantly, human resources should be leveraged by skilling and positively engaging with them to achieve the last-mile connectivity of financial institutions. If corrective measures are taken to tide over the existing problems, interventions, such as Digital India, have the potential to amplify the benefits of economic growth to the poor. Not only will it reduce the costs for the financial institutions, but it would also address safety concerns and accuracy of the data involved in financial transactions.

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Design Thinking Approach for Reengineering Business Processes

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Abstract:

Design Thinking is a human centered principle, perspective and approach that empathises with service providers and customers, journeying through their experiences to gain a deeper understanding of product usage. Traditionally firms typically manufactured solutions with a usage perspective of that of the firm and pushed hard at selling these hard solutions. The Design concept reverses the perspective by looking for insights from empathy and emotion and analyses these insights to build sustainable solutions. Existing organizations can adopt design principles by applying it to the Business Process Reengineering Process (BPRE) to enable changes without disturbing the legacy systems and established frameworks. Adopting Design to the BPRE process enables the firm to improve efficiency, agility and delivery. It also prepares the firm to be open to embrace uncertainties through radical innovations and solutions.

Keywords: Design Thinking, Business Process Reengineering, Customer Journey maps, Scenarios

1.1 Design Thinking:

Design thinking is a concept that is centered on human interactions and interventions. It revolves around human processes that use the abilities that are often ignored by traditional management practices of problem solving and decision making. The process enables the human mind to be intuitive, identify patterns, develop ideas that have an emotional connect and offer meaningful functionality. The process also balances emotional elements such as feeling and intuition with rational elements such as function and application. The process does not lose focus on business considerations of technological, business and practical feasibility. The approach is not a paradigm shift but design thinkers have been able to combine usability, practicality and profitability there by allowing new design concepts and models to emerge for enhanced applications by organizations.

Design Thinking approach is used in various sectors and Industries, wherein the focus is on behaviour of the customer rather than the quantitative demographic profiles. It observes consumer responses in a natural unconscious setting rather than observing in a controlled or a conditioned setting expecting the customer to respond in an expected fashion. It gathers data from observations made from engaging conversations to understand the intention and behaviour of customers. Some practitioners have equated Design Thinking to the TQM concept that combined Kanban, quality circles, TPM and other manufacturing processes to streamline the activity on the shop floor. Design Thinking as a social technological approach has the potential to unleash the creative energies applied to divergent thinking by getting around human biases and connections to specific behavioural patterns and routines.

1.2 Design Thinking Imperative:

Organizations have functioned on the foundations of reasoning, analysis and evidence driven insights. This manner of functioning enabled firms to build business strategies offering sustainable results for firms. Firms in the past and present have relied more on reasoning and less on intuitive thinking, Paul Rogers, author of "The Design of Business" calls it as the 'art of knowing without reasoning'. The future for organizations would be a seamless integration of data, analytics, intuition, reasoning, feelings, desirability, functionality

and reasoning. In a competitive environment firms would need to transform themselves in order to be a part of the experience economy where products and services would provide enhanced customer experiences with differentiation and value. The buzz word for survival in the industry is innovation. Technology has been the main stay of innovation for many years now but modern enterprises are innovating beyond the technology boundary using Design thinking approach and applications. It has shown that it can help extend its innovation frontier in areas where technology has failed.

1.3 Characteristics of Design Thinking:

Empathy – Design Thinking process evolves from understanding the needs, intentions and motivations of everyone. It could include men, women, children, elders and others to understand how each of the parties respond to need fulfilment.

Collaboration – Design Thinking integrates collaborative ideas and behaviour patterns and builds a narrative based on multiple perspectives thereby allowing increased reliance on creativity and out of the box solutions.

Optimism – Design Thinking approach is Optimistic in nature – It does not rely too much on existing matters but takes a futuristic view based on positive understanding of the problem or issue that needs a solution.

Experimentation – Design Thinking approach is experiment and learning prone. It challenges existing statusquo asking questions of possibilities and consequences thereby opening new paths of innovation. It is iterative in nature focusing on the needs of the user. In the process it can create repetitive learning loop that can help focus and optimize the requirement.

2.1 Seven Activities of Design Thinking:

Customer Discovery – Design Thinking maps a customer journey to find meaning from their varied experiences than merely collecting data and analysing them. This approach brings an emotional and personal experience that recognizes customer needs and behavioural varieties from their own ends rather than relying on inferences drawn from customer surveys, focus interviews and ghost shopping data. These data sets are assessed from one's own biases and the data often may not be a reflection of true customer behaviour. On the other hand Design Thinking recognizes unexpressed needs by having product developers walk through customer experiences.

Sense Making – Innovators often try grappling with tons of data looking for deeper meaning and insights by immersing themselves looking for connections and sensible patterns. Design Thinking uses an approach called the Gallery walk to make sense of data. The Design team identified data chunks of customer behaviour and writes it down on posters that are put up in galleries with customer views, opinions ad views ditto as received during the journey mapping. A group of innovators are asked to walk through the gallery to observe and write comments on post its which later are gathered and the design team brainstorms for sense and insights leading to some out of the box innovations to emerge.

Alignment – Alignment of perspectives happen through a series of creative discussions and workshops wherein innovators look at the possibilities of the perspectives becoming new idea offerings than focusing on constraints that act as obstacles. The process helps set a design criteria through collaborative and creative brainstorming with further inquiry questioning the statusquo makes teams reach a collective conclusion giving rise to novel ideas for companies.

Idea Emergence – Once the Design teams have a good sense of customer needs and requirement they narrow down to identify solutions that fit the design criteria established. The process allows innovators to deliberate and write down solutions by carefully structuring the conversations of customers. Based on these innovators can brainstorm and creatively compose solutions that has the pulse of the customer in it.

Articulation – Articulation is a key step in the design process as it helps in getting better sense of meaningless, unattractive and boring ideas. Often innovators ignore these as ideas as useless due to overconfidence and confirmation bias and due to overconfidence and going with top of the mind solutions. Articulation allows for open discussions by challenging the assumptions and bias and generates new meaning from useless and boring ideas.

Testing Experience – The Pretesting and prototyping is an integral step in the Product design and development process. Prototyping

stage is usually done after the concept has been developed and tested for feasibility. The Prototyping can accommodate changes based on the test marketing results received from the potential users. In the Design approach it is done at an earlier stage based on iterative experiences as a work in progress mode which allows for more looping and re-looping to be done in the concept itself. This process allows the pre-experience where imaginations can be descriptively assessed for their newness allowing the approach to provide models of low cost that can be further improved into a final product by accommodating iterative outputs.

Learning in Action – Design Thinking takes real world experiments as a valuable input in the innovation and product development process. These help in understanding ideas better and any change or iteration can be easily brought within the framework. This method easily helps end users overcome fear of change.

3.1 Design Thinking and the Business Process Reengineering Process:

Design thinking as a human centered approach combines innovation with emotion and empathy along with digitalization and analytics. It has the potential for customer experiences into practical prototypes with cross functional applications for firms. Design thinking and technical innovations and processes must be aligned, the former cannot be executed without the latter. Good technical innovations elicit good customer emotions.

BPRE is a process of revisiting the core business practices and processes to cut costs, increase productivity, increase effectiveness and efficiency and offer enhanced products and services to the consumers. In the 90's the advancement in technology and availability of digital tools made more organizations adopt automation to improve their business offerings. Technology was used by firms to automate processes without inquiring about the process requirement or making improvements that could add as value. Business Process Reengineering is an approach that revisits the value chain by making two important changes

a) Process Analysis and b) Process Simulation. Design thinking on the other hand is a user centric process that innovates profitable products over a sustainable life cycle. Unlike the BPRE process that is feature and function centric, design thinking understand the user's problem and context and brings forth a solution that is long lasting and desirable.

Traditionally process improvement functions have been problem centric that have approached the problem sequentially, where the need is identified, solutions are found and delivered to the user. It has followed a linear approach focusing on solving the most noticeable problem at hand. This method has been more of a problem solving approach rather than understanding and delivering to the user's need and requirement often loading a product with useless features not wanted by customers and also not been successful in achieving the firm's business goals.

Design thinking is a more viable approach and method that keeps the user at the center of the solution development process. It used creative ideas using divergent and convergent iterative processes that understand the customer's problem, builds a solution and delivers the same to the market.

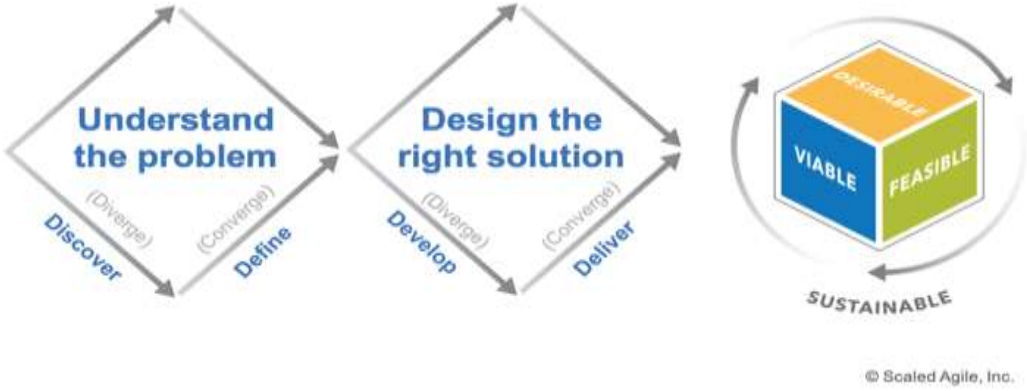

Fig:1 – Design Thinking Activities, Source:

https://www.scaledagileframework.com/design-thinking/

Business Process Reengineering can apply design principles to improve its process further by not just been problem centric but also been customer centric. This is possible if the following questions are asked ahead of the reengineering iteration,

a) Desirability – Are the Solutions offered by the firm needed and required by the Customer? Is it want the customer is looking for?

b) Practicality – Can the solution be designed with the resources and processes available at the disposal of the firm?

c) Beneficial – Is the solution designed and offered generating more value and traction than the cost and effort incurred?

d) Sustainability – Is the solution managed in a sustainable manner that is builds value and profits over its life cycle?

BPRE can successfully use the Double Diamond model shown in Fig 1 to bring about a radical change in its application. The first diamond focusses on two functions – Discover and Define and the second diamond focusses on the other two Develop and Deliver.

Discover – A stage where the problem is understood by knowing the user behaviour through their needs and requirements. This study could possibly help identify unmet needs and offer fresh perspective to a customer problem and behaviour. The approach is not a problem driven approach but a solution driven approach which eliminates biases and hypothetical notions.

Define – The Define phase helps understanding and refining the information secured during the discovery phase. This stage helps generate insights into the specific problems or unexplainable user behaviours. In this phase designers use personas and empathy maps to travel along with the customer to discover solutions that are desirable and customer centric.

Develop – In the Develop phase solutions are built in a cost effective and sustainable manner using design thinking techniques such as journey mapping, story mapping and prototyping. These help in building a solution that is customer friendly and valuable to the customer.

Deliver – The Deliver phace creates a template that transfers the built solution to the context of the customer. In this stage prototypes are built and these continue to have iterations to enable further will enhance the value and sustainability of solutions without affecting customer centricity.

4.1 Innovation Imperative for Business Processes:

Business firm today are quickly adopting and adapting digital technologies and innovations match their customer and client expectations, but not all firms have been able to reach that objective. Large firms have found it difficult to refine and reengineer their deliverables to match the requirements. In a survey finding by Harvard Business Review Analytic services with Genpact Research Institute was able to find that only a dismal 21% of firms were able to digitally transform their firms approach because 48% of firms were unable to experiment quickly, 41% due to their change management systems, 39% due to their legacy systems, 38% due to their aversion to risk and 38% due to their presence as organizational silos.

Firms implementing the BPRE process must understand that Product Innovation alone will not help growth, they instead will have to look at the business process holistically whereby the entire business operations creating inter linkages that add contribute to overall growth.

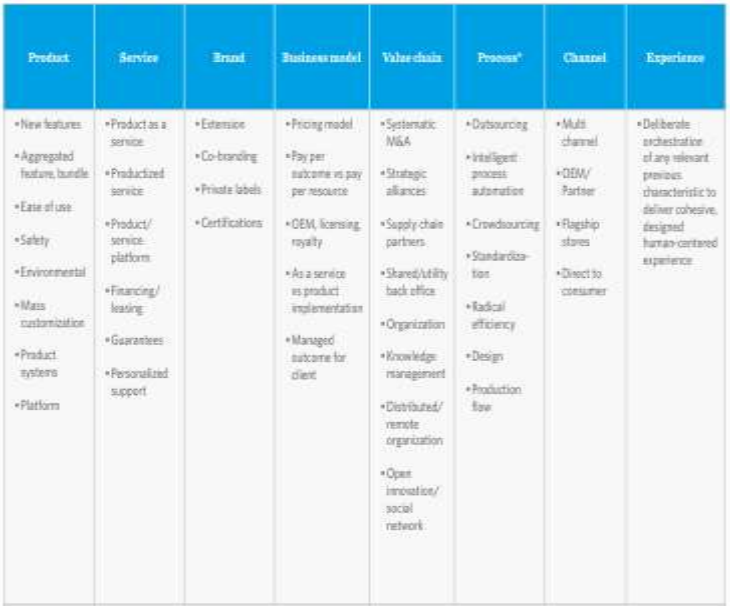

Figure 2: Areas for Design approach in Business Processes, Source: White paper, Genpact

Organizations must not narrowly apply Design principles only in front end interfaces with clients and customers but must rigorously use it in the back end pipeline operations to generate enhanced value. Design Thinking can be used in a range of processes like redesign future offerings or better existing delivery mechanisms using customer journey maps, applying design thinking to reimagine new ventures and develop innovative products based on future use and experiences, Redesign planning, forecasting and project implementations, applying the principles on revenue and asset management, for promotional events for better accounts receivables and for quicker transformation and change processes.

Design Thinking is best leveraged in the following scenarios:

1. In scenarios of ambiguity where the problem or issue is unclear or uncertain, where possible solutions may not be clear in terms of their results.
2. In Problem scenarios where efficiency is lacking due to disengagement between internal service providers and external customers.
3. In scenarios where the future solution is imagined and reimagined, where the proposed innovation needs acceptance from numerous stakeholders of the firm, design thinking through it multiple iterative loops enables the building of a robust solution.
4. In scenarios where organizations are moving from conservative approaches and are willing to embrace disruptive innovations and challenges to become agile and relevant to needs and requirements.

5.1 Conclusion:

Application of Design thinking will transform struggling firms to become agile organizations, as it allows firm to revisit existing business processes and also opens up new vistas for future innovations. Firms must never lose sight of human centeredness and always know stakeholder perspectives while developing processes and designing products and services. When firms combine customer journey maps, persona and research analytics for decision making the results naturally will be superior and delightful both for employees who implement the process and customers who experience the product. Design approach allows firms to dwell deep to gain insights from human experiences, these insights are translated further into meaningful products through multiple iterations. This approach puts the emphases on the end user than the service provider. This principle becomes the core of the Design perspective. This approach enables BPRE firms to try and adapt creative solutions that often are difficult to embed into an existing legacy system of into the

existing framework often leading to rejections in innovations. Adopting Design centered perspectives opens firms to look at the future with more optimism and preparedness.

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Goods and Service Tax

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Abstract:

Goods and Services Tax (GST) is a successor to VAT used in India on the supply of goods and services. GST is a digitalized form of VAT, where we can track the goods & services. Both VAT and GST have the same taxation slabs. It is a comprehensive, multistage, destination based tax comprehensive, because it has subsumed almost all the indirect taxes except a few state taxes. Multi-staged as it is, the GST is imposed at every step in the production process, but is meant to be refunded to all parties in the various stages of production other than the final consumer and as a destination-based tax, it is collected from point of consumption and not point of origin like previous taxes. The tax rates, rules and regulations are governed by the GST Council, which consists of the finance ministers of the central government and all the states.

GST in India is a significant step in the field of indirect tax reforms. By amalgamating a large number of Central and State taxes into a single tax, it would mitigate cascading or double taxation in major way and pave the way for a common national market. From the consumer point of view, the biggest advantage will be in terms of reduction in the overall tax burden on Goods and Services. it will have a boosting impact on the economic growth. This tax because of its transparency and self policing character, would be easier to administer.

The researcher is carried out the research based on the secondary data collected from the different sources of information like websites, journals, articles etc. Thus, this research paper covers and analyze GST different slabs for collection of taxes applies on several items and study the Objectives, Benefits , GST tax rate structure and GST Registration.

Key Words: Objectives, GST Structure, GST Slab Rates. GST registration

Introduction: Initially, it was proposed that GST would be introduced from 1st April 2010. The empowered Committee (EC) of state finance ministers, which had formulated the design of State VAT was requested to come up with roadmap and structure for GST. Joint working groups of officials having representative of the States as well as Centre were set up to examine various aspects of GST and draw up reports specifically on exemptions and td thresholds, taxation of services and taxation of interstate supplies. Based on the discussion between the State and Central Government, the EC released its First Discussion Paper (FDP) on GST in November 2009. This formed the basis for further discussion between Centre and the States.

The Central Government introduced Constitutional Amendment bill 122nd for GST in the Loksabha on 19-12-2014. The bill was passed by the Loksabha in May 2015. The bill was referred to the select committee of Rajya Sabha on 12-05-2015. The select committee submitted its report on the bill on 22-07-2015.hte bill with certain amendments was finally passed in the Rajya Sabha and thereafter by Lok Sabha in August 2016. Further the bill was ratified by the States and received the assent of the President on 8th September 2016 ab\nd was enacted as constitution (101st Amendment) Act 2016, w. e. f. 16th September 2016. Finally the One Hundred Twenty Second Amendment bill of the Constitution in India, officially known as The Constitution (One Hundred and First Amendment) Act, 2016, introduced a national Goods and Service Tax in India

from 1st July 2017. The bill provides for a levy of GST on supply of all goods or serices except alcohol for human consumption, and petroleum products.

A Goods and Services Tax Council (GSTC) was constituted comprising the Union Finance Minister, the Minister of State (Revenue) and the State Minister to recommend on the GST rate, exemption and thresholds, taxes to be subsumed and other features. This mechanism will ensure some degree of harmonization on different aspects of GST between the Centre and States. One half of the total number of members of GSTC would form quorum in meeting. Decision in GSTC will be taken by a majority of not less than three - fourth of weighted votes cast. Centre and minimum of 20 States will be required for majority because centre would have one – third weighted if the total votes cast and all the States taken together would have two-third of weightage of the total votes cast.

GST is an indirect tax, which has replaced many indirect taxes in India, such as the excise duty, VAT, services tax, etc. The Goods and Service Tax Act was passed in the Parliament on 29th March 2017 and came into effect on 1st July 2017. Goods and Service Tax (GST) is levied on the supply of goods and services. Goods and Services Tax Law in India is a comprehensive, multi-stage, destination-based tax that is levied on every value addition. GST is a single domestic indirect tax law for the entire country.

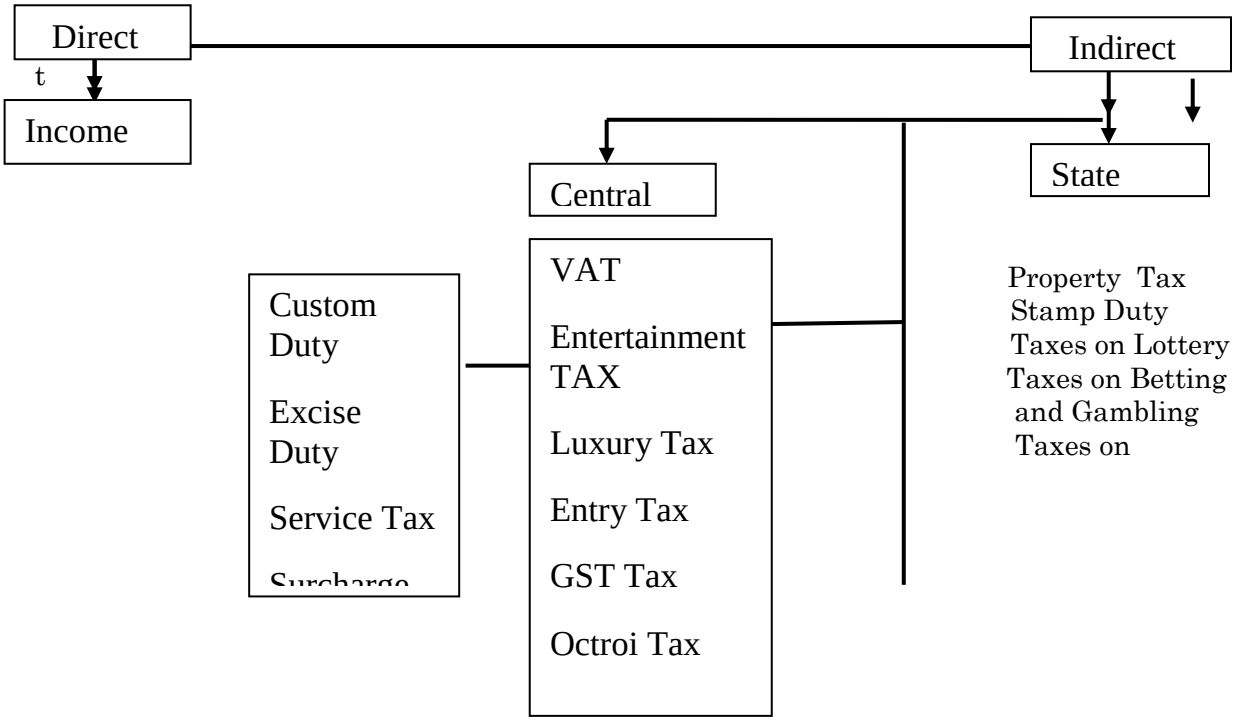
Meaning of GST: Goods and Service tax is an Indirect tax, levied on the supply of goods and services.

GST Act 2017: GST means tax on supply of goods or services or both, except taxes on supply of alcoholic liquor for human consumption and petroleum products.

Article 366 (12 A) of constitutional (101 Amendment) Act 2016 defines " Goods and Service Tax " as any tax on supply of goods or services or both, except for taxes on the supply of the alcoholic liquor for human consumption .

The above definition clearly says that " GST is a single Indirect Tax throughout India applicable on supply of goods or services or both. GST is a destination based tax levied at a single point at the time of consumption of goods or services by the ultimate consumer."

Tax Structure in India



GST Terminologies:

1. **Aggregate turnover** : The Aggregate value of total sales, supply and export of taxable and non-taxable goods and/or services by a person (with PAN) excluding taxes is called aggregate turnover.

2. **Application Reference Number** : ARN is a unique number that is generated when a taxpayer has successfully registered on the GST portal.
3. **Casual taxable person:** A person who undertakes transactions occasionally involving the supply of goods and/or services in the business, whether as principal, agent or in any other capacity, in a taxable territory where he doesn't have a fixed business place.
4. **Composite supply :** The supply comprising of two or more goods and/or services, which are bundled naturally and provided together, one of which is a principal supply.
5. **Composition Scheme :** GST composition scheme was implemented under the respective State VAT Laws. GST composition scheme ensures greater compliance without the need for maintaining records.
6. **GSTN :** GSTN stands for the Goods & Services Tax Network. It is a non-profit, non-government entity that provides IT infrastructure services to the Central & State Governments, taxpayers & other stakeholders for implementation of the Goods & Services Tax.
7. **GSTIN**: GSTIN stands for Goods and Services Tax Identification Number. It is a 15 digit, unique registration number provided to taxpayers registered under GST.
8. **GSTR** : GSTR is a document which comprises of details of the income that is filed as per the law with the GST department. All returns must be filed online. GSTR is used by tax authorities to compute the total tax liability of the taxpayer.
9. **Input Service distributor :** It is the office of the supplier of goods and/or services that obtains tax invoices issued under section 31 of the Act toward the receipt of input services and issues a document for distributing the credit of SGST, CGST, UTGST and/or IGST paid for the said services.
10. **Input Tax Credit :** It is a tax credit given to offset the collection of Goods and Services Tax.
11. **Reverse Charge :** Generally, when a supplier supplies goods, the tax is levied upon the supplier however in some cases the tax is levied upon the buyer of the goods. This is called reverse charge.
12. **Components Of GST:**
    GST has a dual effect at the central and state levels as it operates on a common tax base. The centre levies a tax on intra-state supply of goods and services which is known as the Central GST or CGST. States levy GST on some goods and services which is State GST or SGST. The centre also collects an Integrated GST or IGST on inter-state supply of goods and services.
13. **Central Goods and Services Tax (CGST):**
    CGST replaces the taxes that the central government levies, like surcharges, central excise duty and cess. If a manufacturer produces and sells a product within a state, both CGST and SGST can apply to it. The state receives the SGST and the centre receives the CGST component of the taxes. The maximum CGST rate is 14%. While the GST council may levy a 2.5% tax on household items, it may levy a 14% CGST on air conditioners, refrigerators and luxury items.
14. **State Goods and Services Tax (SGST):**
    State governments levy and collect GST known as State GST or SGST. SGST is applicable for supply and sale of goods and services which happen within the boundaries of a state. State governments charge SGST on the value of a transaction that a buyer pays for. SGST slabs may vary as the states fix their own tax rates.
15. **Integrated GST (IGST):**
    Integrated GST or IGST is a tax that is applicable for transactions between two states. IGST is applicable on supply of goods and services between two states and on imports and exports. The central government collects the tax revenue and shares a portion of it with state governments.
16. **Union Territory GST (UTGST):**
    Union Territory GST is the GST applicable on transactions of goods and services in the Union Territories. Typically these GST rates provide goods and services at a very nominal rate, as Union Territories are exempt from central government taxes. This enhances

the potential for developing tourism and business in a Union Territory.

Objectives of the study:

1. To study the objectives of GST.
2. To study the benefits of GST.
3. To study the GST Registration.

Limitations of the Study:

1. This Research study is limited only for Objectives, Benefits and GST Registration.
2. Research study is based on secondary data only.

Objectives of GST:

1. **Bring uniformity in taxes:**
   One of the primary objectives of GST is to have a uniform tax code for a product or service across the country. It also simplifies tax administration, billing, invoicing and compliance laws. It facilitates the development of uniform tax law while removing cumbersome and time-consuming tax filing processes. This system helps track and monitor GST collections, returns and disputes through a single digital platform.
2. **Remove multiple indirect taxes:**
   Prior to implementing GST, Central and state governments could levy taxes at multiple stages of production, supply and purchase. GST combines these indirect taxes into one. This eases tax compliance protocols for businesses who pay and file tax reports, and helps the government simplify and streamline the tax administration process.
3. **Prevent tax evasion and fraud:**
   GST is a digitized process and a taxpayer can claim an input tax credit only if a supplier uploads a corresponding invoice. This minimizes the scope of false tax credit claims using fake invoices. GST has a stringent surveillance system, allowing authorities to identify and initiate action against defaulters and fraudsters.
4. **Regulate the unorganized sector of the economy:**
   GST aims to bring more businesses both from organised and unorganised sectors into the tax base. Strict implementation of GST laws regarding compliance and input credit have been instrumental in making businesses come forward and register their operations with the government. A wider tax base increases the tax that a government can collect every cycle and facilitates a higher tax to GDP ratio. Increased GST collection can also help central and state governments invest in infrastructure and crucial development plans.
5. **Simplify tax filing processes:**
   GST aims to simplify processes and procedures for taxpayers by using a digital platform. Individuals can register businesses, generate bills, file tax returns and claim refunds online. A centralised and digitised GST portal enhances ease of use for businesses and individuals alike.
6. **Optimize supply chains:**
   Prior to the government implementing GST, traders and manufacturers required a lengthy documentation process for the supply of goods. An important outcome of GST is that it removes check posts on state borders that cause traffic jams and delays in transport of goods. Removing check posts reduces transit time for goods to reach their destination and reduces warehousing and storage costs.

Benefits of Implementing GST:

GST offers some benefits to stakeholders, including state and central governments, businesses and citizens. The primary benefits are that GST can reduce the cost of goods and services, boost the economy and increase the competitiveness of service providers and manufacturers. GST allows input credit that a taxpayer can avail on value addition. The automated process allows seamless transfer of input credits across the value chain of a transaction. It can boost tax compliance. Since GST removes multiple barriers, it has the potential for integrating the economy through a uniform tax system. Additional benefits of GST include:

1. It combines multiple indirect taxes of the central and state governments into one tax code.
2. It reduces cascading and makes Indian industry and products competitive.
3. It allows cross utilization of tax credit.
4. IGST, CGST and SGST brings some uniformity in taxation for imports and local products.
5. It allows exporters a provisional refund of 90%. This allows them to streamline their business.
6. It is likely to increase the taxpayer base.
7. Uniform GST rates reduce the scope of fraud.
8. It creates a uniform set of laws, procedures and tax rates to facilitate better compliance.

9. It is a technology driven platform and its interface allows automated procedures for registration, filing and payment of returns and claims.
10. It improves transparency.
11. It reduces tax burden on industries, resulting in reduced pricing of goods and increased consumer expenditure. This boosts the economy.
12. It can boost domestic demand and subsequent production, generating more employment opportunities.

Kinds of GST Rates and Structures in India

The primary GST slabs for regular taxpayers are currently 0% (nil-rated), 5%, 12%, 18%, and 28%. There are a few GST rates that are less commonly used, such as 3% and 0.25%.

Furthermore, the taxable composition persons are required to pay General Service Tax at lower or nominal rates such as 1.5%, 5%, or 6% on their turnover. TDS and TCS are also concepts under GST, with rates of 2% and 1%, respectively.

These are the total IGST rates for interstate supplies or the sum of CGST and SGST for intrastate supplies. To calculate the GST amounts on a tax invoice, multiply the GST rates by the assessable value of the supply.

Furthermore, in addition to the above GST rates, the GST law imposes a cess on the sale of certain items such as cigarettes, tobacco, aerated water, gasoline, and motor vehicles, with rates ranging from 1% to 204%.

1. **0% GST Products :** Milk, Eggs, Curd, Lassi, Kajal, Educational services, Health Services, Children's Drawing & Coloring Books, Unpacked Food grains, Unpacked Paneer, Gur, Unbranded Natural Honey, Fresh Vegetables, Salt, Unbranded Atta, Unbranded Maida, Besan, Prasad, Palmyra Jaggery, Phool Bhari Jhadoo.
2. **5% GST Products:** Sugar, Tea, Packed Paneer, Coal, Edible oils, Raisin, Domestic LPG, Roasted Coffee Beans, PDS Kerosene, Skimmed Milk Powder, Cashew Nuts, Footwear (< Rs.500), Milk Food for Babies, Apparels (< Rs.1000), Fabric, Coir Mats, Matting & Floor Covering, Spices, Agarbatti, Coal, Mishti/Mithai (Indian Sweets), Life-saving drugs, Coffee (except instant).
3. **12% GST Products :** Butter, Ghee, Computers, Processed food, Almonds, Mobiles, Fruit Juice, Preparations of Vegetables, Nuts Fruits, or other parts, Packed Coconut Water, Umbrella.
4. **18% GST Products:** Hair oil, Capital goods, Toothpaste, Industrial Intermediaries, Soap, Ice cream, Pasta, Toiletries, corn flakes, soups, Computers, Printers.
5. **28% GST Products:** Small cars (+1% or 3% cess), High-end motorcycles (+15% cess), Consumer durables such as AC and fridge, Luxury & sin items like BMWs, cigarettes (Beedis are NOT included here), and aerated drinks (+15% cess).

Eligibility for GST Registration:

A business entity involved in the buying and selling and good of services have to register for GST provided they fall under the eligibility criteria for GST Registration. Those business entities whose annual turnover is more than Rs.20 lakhs (for supply of services) and Rs. 40 lakhs (for supply of goods) needs to register under GST.

Category	Region	Aggregate Annual Turnover (Inr)
Services	Special Category States- Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttarakhand & Himachal Pradesh.	10 Lakhs
Services	Rest Of India	20 Lakhs
Goods	Special Category States- Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Tripura, Sikkim, Uttarakhand & Himachal Pradesh	20 Lakhs
Goods	Rest Of India	40 Lakhs

Business should get GST registration if they fall under any of the below mentioned categories:

1. **Interstate business:** Any entity that is involved in supplying goods from one

state to another should get GST registration in India.

2. **E-commerce platform :** Individuals supplying goods or services through e-commerce platform needs to obtain registration under GST. However, as per a recent notification, e-commerce sellers/aggregators do not need to register in case where total sales are less than Rs.20 lakhs.
3. **Casual taxable persons :** Casual taxable person should also get GST registration. Casual taxable person refers to a person who supplies taxable goods/services in a taxable territory where he doesn't has a fixed business place.

Exempted from obtaining GST Registration:

The following individuals & entities are exempted from obtaining GST Registration:

1. Agriculturists.
2. Persons falling under Threshold Exemption Limit.
3. Persons making Nil-Rated/ Exempt supplies of goods & services.
4. Persons making Non-Taxable/ Non-GST supplies of goods & services.
5. Activities that are neither Supply of Goods nor Services.
6. Persons involved in making only supplies covered under reverse charge.

Benefits of GST Registration

The benefits of obtaining GST Registration has been specified below:

1. **Recognition-** Businesses that have registered themselves with the requirements of GST would be recognised in the eyes of the law. Public and consumers will recognise businesses that have registered as per the requirements of the government.
2. **Relief from Double Taxation:** Any business that is registered with GST as per the government requirements would get reliefs and exemptions from double taxation.
3. **Reduced number of compliances**: The number of compliance requirement has reduced considerably as compared to earlier tax regime.
4. **Increase in revenue for Government:** GST has increased the prospects of revenue generation for the Government.
5. **Logistical improvement:** With the introduction of GST Registration the efficiency of logistics has improved.

Documents required for GST Registration:

1. Digital Signature Certificate.
2. Aadhaar card copy of the proprietor/partners/directors.
3. Passport size photograph of the proprietor/partners/directors.
4. PAN Card copy of business entity.
5. Latest Electricity bill/ bill of any tax paid / Municipal Khata Copy.
6. If place is rented, rent agreement will be required, else consent letter is sufficient.
7. Bank Statement/ cancelled cheque copy/ copy of first page of passbook.
8. Entity should provide registration certificate with Memorandum of Association- Articles of Association / LLP Agreement or Partnership Deed as applicable.

Conclusion: GST is a form of tax that a customer bears when he or she purchases any goods or services. Here the tax is not directly paid by the customer to the government but it is levied on the manufacturer or seller of goods or provider of services. The registration under GST is necessary for business entities who fall under the eligibility criteria of GST Registration. The procedure for GST registration is completely an online process. Hence businesses would not have to go offline to carry out this form of registration.

GST is indirect tax, applicable to all the people, help reduce fraud, and no one escape from the paying tax. India is generating most of the income from alcoholic liquor only, if put high tax on this, at least help to increase the income of the country and reduce alcoholic consumers.

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Digital Infrastructure and Agriculture Development in India

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Abstract

This study focuses on the adoption of digital agriculture infrastructure in India.Digital farming methods through information and communication technology can be a game changer in the ruraleconomy.For the aim of Doubling Farmer's Income by 2022, under this initiative,the government of India introduced many programs and services to digital agriculture. For example, Kissan Rail aims to transport agricultural commodities from one place to another quickly, and it reduces transportation costs and food waste.Kissan Call Centres will provide free advice to farmers who have queries about agriculture and allied activities,many software and mobile applications were created to collect data on various topics, such as trade, market prices, crop diseases, soil types, seeds, pest control, etc. Under the ATMA scheme, the government is conducting farmer fairs and exhibitions to spread awareness of agriculture technologies.The government funds agriculture science and technology institutions and agriculture universities to encourage innovation and research (startup) activities. Finally, Digital agriculture infrastructure significantly influences farmers to improve their yieldand production in the future.

Key Words: Agriculture Technology.Agriculture Startup. E-Nam. Digital Agriculture. Kissan Call Centres. National e-Governance.

Introduction:

The agriculture sector in India is adopting smart farming methods through technology and innovation, which can be a game changer in the economy. Moreover, smart farming can help integrate digital and physical infrastructure to benefit farmers. Smart farming involves the Application of sensors and automated practices. It can monitor the agricultural land, temperature, soil moisture, etc.To achieve the doubling of farmer's Income by 2022, the government of India startedthe Kissan Trian aim to enable speed transportation of perishable and agricultural commodities, including meat, poultry,fisheries, and dairy products, this train carries the surplus area to consumption areas. This service reduces food waste and decentralization of the agriculture trade. The government created many agriculture-related applications and software for farmers (Table 1). The comprehensive information communication technology plan has reached farmers in simple and improved ways to increase agricultural efficiency, as evidenced by the implementation of the Kissan Drone programme for crop aid, land record, and pesticide spraying in the 2022–23 budget address.Digital agriculture refers to using information and communication technologies and data management systems to enable the development of authentic content and provide timely, targeted information and services to farmers and other agriculture stakeholders to convert farming into a profitable business.In 2022–2023, the government spent Rs. 30.1 crores on agriculture research, extension, and education (Table.3). The Agriculture Technology Management Agency (ATMA) program educates farmers about agricultural technology by conducting training, farmer fairs, and exhibitions, (Table.4). and the study objectivesare to review the farmer's behaviourand participation in the digital agriculture infrastructure.To examinethe

government's involvement in developing digital agriculture facilitiesfor the framer's welfare.

For the information,we studied digital agriculture infrastructure-related sources, likefarmer's useof digital hardware or tools, software, and services for farming-related activities. It includes usingessential digital tools directly or indirectly to increase productivity and broaden market knowledge (Abdulai et al.,2023).Drone use in agriculture has expanded in smallholder markets like China and Thailand to boost production and limit operator exposure(Narain, 2020). Farmers may boost their yields by learning how to take care of their crops and figuring out the best quantity of water or fertilizer to use by using AI for techniques like precision farming (Kumar, V, Ret al. 2014). For effective implementation of the crop insurance scheme, digital infrastructure such as weather stations, drones, and Low Earth Orbit (LEOs) are required (Gulati et al., 2018). Innovative and information-seeking behaviour also proved significant when switching from the machine direction to the Farmer(Barnes. A.P et al., 2019).At the national level, 30.3% of people in the 15–24 age range have basic digital abilities and agricultural techniques; technologies may help raise output, also help lower productionand logistical costs, reduce foodwaste, and boost productivity (Barnes, A. P 2019). To promote digital agriculture's development by increasing access to mobile phones and the Internet for rural farmers (Olaniyi. etal., 2018).The National Agriculture Policy and the National e-Governance Plan both emphasise the use of information and communication technologies for growth agriculture growth and generate value at the grassroots level(Yadav, 2010). The e-NAM initiative is a very active program in digital agriculture and a significant platform for agriculture trade; as of 2022 total value of trade was Rs. 2,04,949 crores(Table.2).

Materials and Method

In order to achieve the study objectives, we concentrate on secondary data sources from state and union governments'annual reports,like the Department of Agriculture and Farmers Welfare, reports from the Indian Economic Survey, the indiastat database, and reports from the Doubling of Farmers Income Commission. This study used straightforward analytical tools like tabulation, graphing, and quantitative data analysis because the government has implemented numerous digital agriculture infrastructures. We attempt to explain how farmers participate in and utilize these infrastructure facilities effectively.

Result and Discussion

Government of India Initiative Digital Agriculture facilities.

The National e-Governance Plan in Agriculture (NeGP-A), a project started by the Indian government, intends to create ICT-based national agricultural service portals in India so that farmers and other system participants may obtain timely agricultural information. Later, in 2021, For initiatives based on cutting-edge technologies like blockchain, drones, robots, remote sensing, and GIS to boost farm production, the Indian government launched the Digital Agriculture Mission.

Table1.Details on major National level Applications and portals under Digital agriculture

SL. No	Name of theApp's	Purpose	Benefits to the farmers/officers
1	KISAN SUVIDHA	This App was developed to help farmers by providing information about agricultural activities.	Farmers may access data on market pricing, agriculture advisories, plant protection, IPM protection, the market price of the product in the closest region, and the maximum price in the state and nationwide. This App mostly delivers weather information for the next five days and the present weather. As of December 2020, there have been 13,69,263 downloads.
2	PUSA KRISHI	This App helps build a strong connection between the research sector and outside the	Technological development and commercialization help agricultural businesses for everyone, from cooperatives to individual farmers.

		world.	
3	KISSAN MASIK ANDROID App	It is the most popular monthly magazine and provides information about agricultural activities.	The Shetkari Magazine Android app offers an easy-to-use interface and requires mobile Internet or Wi-Fi access in order to sign up and download the latest issues. The magazine may be downloaded, then read without an internet connection.
4	BHUVAN HAILSTROM App	It was created to record and assess agricultural damage brought on by hailstorms and other natural calamities.	The agricultural officer may visit the field with a mobile device or tablet that has an app that can take the following measures, including a photograph of the field with latitude and longitude, Name of the crop, Date of Planting, Date of Likes Harvesting, and Sources of Irrigation. In addition, it captures information that will be immediately plotted on the Bhuvan website, making analysis simple.
5	AGRIMARKET	This App is helpful to farmers to get the market price within a 50 km distance from the user location.	With the use of mobile GPS, the Agrimarket App is able to detect a user's position and retrieve the current crop prices in marketplaces up to 50 km away. If a person wants not to utilize GPS location, there is another way to obtain the price of any market and crop.
6	MNCFC (Mahalanobis NationalCrop Forecast Centre)	The FASAL initiative of the Ministry of Agriculture uses an Android-based application to collect field data for crop evaluation using satellite data.	The application may collect field information, including crop varieties, condition, sowing date, soil type, and other data, as well as field images (640x480 resolution), GPS coordinates, and field data. To gather information on the crops, varieties, and soil, farmers may also post photos taken using their mobile devices. Creating a national geospatial database of crops would greatly benefit from this knowledge. The Send Later option allows you to send information either immediately or later. The ISRO's Bhuvan Server receives all data sent through this Application.
7	KARNATAKA BHOOMI	This App helps farmers to know their agriculture land details and easy to know land-related services, status, and disputes.	The online distribution and administration initiative for land records in Karnataka is called Bhoomi (which means land). Through this system, Karnataka's framers can keep track of their status.
8	MKissan	Farmers can make well-informed decisions on the selection of seed varieties and time of sowing, harvesting, etc., by using weather-related information such as temperature, the possibility of rainfall, etc.	They can make educated selections to sell products at the proper price and timing using a simple mobile telephone. It assists in lowering farmer distress sales brought on by changes in market supply. 5.2 billion farmers, professionals, and scientists from various departments are enrolled. Since Mkissan launch in 2013, more than 2426 billion SMSs have been issued over the platform. This App frequently provides farmers with information in 12 regional languages.

e-NAM: The National Agriculture Market programme was introduced by the Indian government in 2016 with the aim of developing an online transportation competitive bidding system to help farmers

get a fair price for their crops. The government offers free software and financial support of Rs. 75 lakhs each piece of APMC mandi-related hardware under the e-NAM programme. including quality assigning, grading, sorting, packing, composite unit, etc.Table.2 shows that As of June 2022. 1000 mandies in 18 states and 3 Union territories have been integrated with e-NAM platform.1,73,41,852 framers registered under this platform, at the same time, 2,26,139 trades were involved in the e-NAM portal, and Rs.2,04,949.00 crore trade transactions happened this period.

Table 2. Selected State-wise Number of Mandis Integrated, Farmers/Traders Registered,and Total Trade Value on e-NAM Platform in India. As on June 2022

(Rs. in Crore)

SL. No	States/UTs	No of Mandis (APMC) Integrated	No. of Farmers Registered	No. of Traders Registered	Total Trade Value
1	Andhra Pradesh	33	14,44,989	3,478	30,890.00
2	Chandigarh	1	7,106.00	114	472.00
3	Chhattisgarh	14	1,35,251	3,125	1,595.00
4	Gujarat	122	8,68,911	9,401	5,793.00
5	Haryana	81	27,25,240	14,424	62,757.00
6	Himachal Pradesh	19	1,24,417	2,010	1,031.00
7	Jammu & Kashmir	2	944	121	2.00
8	Jharkhand	19	2,46,637	2,299	37.00
9	Karnataka	2	1,453	655	684.00
10	Kerala	6	2,728	346	1.00
11	Madhya Pradesh	80	30,21,934	22,337	16,486.00
12	Maharashtra	118	12,16,445	21,510	9,187.00
13	Odisha	41	2,79,393	7,393	1,540.00
14	Puducherry	2	13,529	180	112.00
15	Punjab	37	2,17,429	2,589	9,093.00
16	Rajasthan	144	15,00,477	82,359	38,794.00
17	Tamil Nadu	63	3,07,714	4,358	1,505.00
18	Telangana	57	18,23,782	5,799	16,661.00
19	Uttar Pradesh	125	33,00,715	35,029	7,894.00
20	Uttarakhand	16	54,305	4,728	357.00
21	West Bengal	18.	48,453	3,884	58.00
22	**India**	**1,000**	**1,73,41,852**	**2,26,139**	**2,04,949.00**

Source: indiastat.com & Department of Agriculture and Framer welfare

Kissan Call Center: Thetoll-free Number. 1800-180-1551. The Ministry of Agriculture launched Kissan Call Centerson January 21st. 2004 main aim of the project was to answer farmer's queries to free assistance with any queries related to Pest control in crops.Soil Science,Market Information, market price, weather, etc.,through telephone calls in their language. All these call centers work in 22 local languages in more than 14 locations. These call centers are available from 6. am to 10. pm on all seven days of the week at each KCC location(Ministry of Agriculture & Farmers Welfare). As in Figure1. The performance of Kissan Call Centreservices has seen identical variations. In 2022, a total of 42,06,150 calls were successfully answered. In other words, 56,94,641.75 calls were sent to specialists. This trend indicates the interest Indian farmers have in digital infrastructure services.

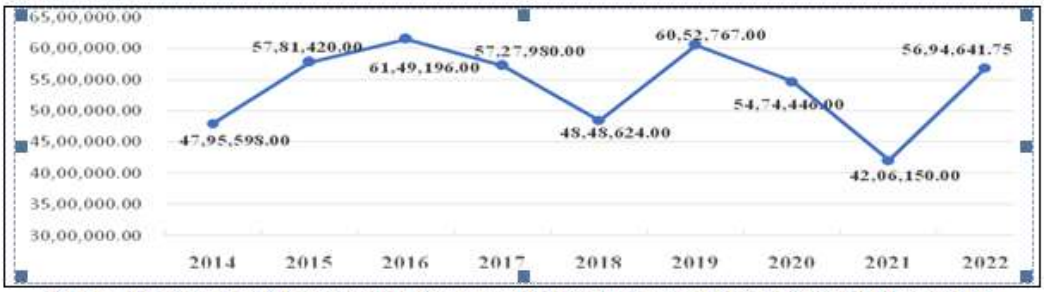

Fig. 1, Number of Kissan Calls received in KCC,across India, from 2014 to 2022.

Source: indiastat.com & Department of Agriculture and Framer welfare.

Research and Extension: The fast shift in agriculture growth in India has been met with outstanding success through research and extension in the agricultural field. India must increase its public spending on agricultural training, education, and research. The union government encourages researchers and scientists to engage in innovation-related activities.Table 3, In 2022–2023 and 2023–2024, respectively, Rs. 8151.94 crores and Rs. 8941.93 crores were spent on research, extension, and education. 885 agriculture startups received training from institutions and universities specializing in agriculture, and 286 agriculture startups received funding from the Indian government for a total sanctioned amount of Rs. 30.1 crores.

Table 3.Number of Agri Startups Trained, Funded, and Grants Sanctioned under Schemes of Ministry of Agriculture and Farmers Welfare in India. As on 18.07.2022

Particulars	No. of Agri Startups Trained	No. of Agri Startups Funded	Grants Sanctioned (Rs. in Crore)
National Institute of Agricultural Extension Management (MANAGE)	289	106	10.72
Acharya N. G. Ranga Agricultural University, Andhra Pradesh (ANGRAU)	130	24	2.88
Kerala Agricultural University, Trissur, Kerala (KAU).	128	49	6.31
Indian Institute of Millets Research, Telangana (ICAR-IIMR)	211	66	6.32
Tamil Nadu Agricultural University,Coimbatore, Tamil Nadu.	127	41	3.87
Total	**885**	**286**	**30.1**

Source: indiastat.com & Department of Agriculture and Framer welfare.

Agriculture Technology Management Agency (ATMA): Through institutional provisions for adopting technology in the form of an Agriculture Technology Management Agency (ATMA) district level to operationalize extension reforms, this program, established in 2005–2006, aims to make the extension system farmer-led and accountable. ATMA is a national initiative now being implemented in 614 districts, 28 states, and 3 Union Territories. It involves actively engaging farmers and farmer's organizations, NGOs, Krishi Vigyana Kendras, Panchayat Raj institutions, and other stakeholder groups.Table.4 shows in contrast to 2020-21, when only 8,828 exhibitions and farm fairs were organized, and a total of 8,63,769 farmers successfully participated in this initiative, in 2018–19, there were 309 farmers fairs, and 14,77,552 farmers participated. However, in 2019–20, the number of organizers and participants decreased slightly due to the Covid–19 pandemic.

Table4.Exhibitions/Farmers Fairs organized and Participants by Agriculture Technology Management Agencies (ATMA) from 2018 to 2020.

State	2018-19		2019-20		2020-21	
	Exhibitions/ Farmers Fairs Organized	No. of Participants	Exhibitions/ Farmers Fairs Organized	No. of Participants	Exhibitions/ Farmers Fairs Organized	No. of Participants
Karnataka	309	90,181	402	78,935	397	40,781
India	**13,427**	**14,77,552**	**8,461**	**11,94,844**	**8,828**	**8,63,769**

Source: indiastat.com& Department of Agriculture and Framer welfare.

Conclusion

Indian agriculture today strongly emphasizes artificial intelligence and many Mobile applications and agriculture web portals; these digital infrastructures positively influence farmers' welfare and agriculture development.Also, farmers become decision-makers in their firms and are part of the digital world.Several projects and schemes are consequently implemented in this area to achieve the initiative of doubling farmers' Income. In the budget speech for 2022, it was announced that public sector research would be combined with private organization players to provide hi-technology services to farmers. In rural areas,teledensityis 57.98,andthe urban area is 135.23 per 100 Inhabitants (Ministry of Communication, Govt of India), whichshows the status of the rural area. Likewise, the government prioritizes developing communications technology in rural areas.

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Role of E-governance and digital India in Empowering Indian citizens

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Abstract:
India is developing country but India is not developed. Government forms the backbone of any country. The primary purpose of any government is the Welfare of its citizens.E-governance, meaning 'electronic governance' is using information and communication technologies (ICTs) (such as Wide Area Networks, the Internet, and mobile computing) at various levels of the government and the public sector and beyond, for the purpose of enhancing governance. Digital India is a campaign launched by the Government of India to ensure that Government services. Are made available to citizens electronically by improved online infrastructure and by increasing. Internet connectivity or by making the country digitally empowered in the field of technology.

Keywords: E-Governance; Digital India; Participatory governance; Artificial intelligence; government initiative.

E-digital is a term that refers to the use of information technology and communication for governance. Information can be transparently delivered to the public through e-Governance. E-Governance thus helps in enhancing and redefining the social, environmental, and economic values of citizens.e-Governance thereafter developed with the growth of technology. Today, there are a large number of e-Governance initiatives, both at the Union and State levels. In 2006, the National e-Governance Plan (NeGP) was formulated by the Department of Electronics and Information Technology and Department of Administrative Reforms and Public Grievances that aims at making all government services accessible to the common man, ensure efficiency, transparency and reliability of such services and affordable costs to realise the basic needs of the common man.Reating of digital Infrastructure involves high speed internet as a core utility; cradle to grave digital identity -unique, lifelong, online, authenticable; mobile phone & Bank account enabling Participation in digital & financial space; easy access to a Common Service Centre; Shareable private space on a public cloud and safe and secure Cyber-space. In the area of Governance & services on demand, the aim is to provide seamlessly integrated across Departments or jurisdictions; making services available in real time from online &mobile Platform; making all citizen entitlements to be available on the cloud; making services Digitally transformed for improving Ease of Doing Business; making financial transactions Electronic & cashless and so on..

Objectives of the study:

1. Studying about the digital India Schemes
2. Studying about the Participatory governance
3. Studying about the Artificial intelligence;
4. Studying about the government initiative.

Methodology:

The article is totally based on secondary data and also the information is collected from various government websites, Wikipedia, published articles in magazines, news papers, and so on….

Digital India:

Digital India is a massive campaign that the Government of India launched in the year 2015. The implementation of this would give easy access to government services in different regions of the country.

Pillar or schemes of Digital India

Accessible India Campaign and Mobile App – It is also known as Sugamya Bharat

Abhiyan. Its principal goal is to make all services open to individuals with disabilities.

1. Mygov.in – This forum allows users to voice their thoughts on the government's administration strategy. It has been implemented so that locals may actively participate. It is a citizen engagement platform that is developed to facilitate participatory governance. More than 2.48 crore users are actively using MyGov.
2. Unified Mobile Application for New-age Governance (UMANG) – This mobile platform can be used on any device. This software is available in a variety of Indian languages. This software allows users to access a variety of services. Education portals, a digital locker, Aadhar, tax, and train ticket purchasing are among the services available. Unified Mobile Application for New-age Governance (UMANG) – for providing government services to citizen through mobile. More than 1,570 government services and over 22,000 bill payment services are made available at UMANG.
3. Agri market App – It was created to make agricultural prices known to farmers and discourage them from selling too soon.
4. Diksha – Diksha is a national level educational platform that helps students and teachers to participate, contribute and leverage a common platform to achieve learning goals at scale for the country. As on 27th July 2022, 7,633 courses are available and more than 15 crore enrolments have been done.
5. BetiBachaoBetiPadhao- Ensuring the welfare and nurturing of a girl child and also making sure that every girl child attends school.
6. Bharat Interface for Money (BHIM)- It makes payments quickly, easily, and simply through the Unified Payment Interface (UPI). It also allows the bank to accept instant payments and money collections using mobile phone numbers.
7. Crop Insurance Mobile App- Used to calculate crop insurance premiums depending on numerous characteristics such as area or loan amount, if a loan is taken out.
8. E-Hospital- It's an HMIS (Hospital Management Information System) for hospitals' internal workflows and operations.
9. E-Pathshala- The National Council of Educational Research and Training (NCERT) created it to make all educational resources, such as books and videos, available online.
10. DigiLocker: It is facilitating paperless availability of public documents. Digital Locker has more than 11.7 crore users and more than 532 crore documents are made available through DigiLocker from 2,167 issuer organisations.
11. EPFO Web Portal and Mobile App- Allow workers to check the amount of their provident fund using an e-passbook, which is a virtual equivalent of a real passbook.
12. Start-up India Portal and Mobile App- It is a government of India program to encourage entrepreneurs to develop businesses (start-ups) in the country to expand sustainably.

Participatory governance:

1. Participatory governance is carefully planned, instituted and evaluated. It is designed to lead to effective participation in decision making that unites constituencies, produces an improved college environment, and draws upon the strength of diversity.
2. Participatory governance includes the structures and processes for decision making that engage students, staff, faculty and administrators in reaching and implementing decisions that further the primary mission of the college–to educate students. The groups formed to address college matters are properly charged and empowered, the members carefully selected, and processes clearly structured. The structures and processes for participatory governance vary according to task.
3. Participatory Governance Structure: Constituent Committees bring forward action items, Senates & councils bring forward information reports, the College Governance Council provides recommendations, and the President makes the final decision based off all of this.
4. In order for participatory governance to work, there must exist a covenant of mutual trust, honesty, open agendas, equity, and respect for differing views. Essential to maintaining this covenant are open communications and feedback from all constituencies. All parties must

commit to and take responsibility for fostering and maintaining an environment in which participatory governance can occur, as well as being well informed regarding issues.participatory development, with its central focus on raising the quality of participation by local societies and thus better achieving self-reliant and sustainable development and social justice, is one important form of people-oriented development. Good governance is the foundation of participatory development inasmuch as it provides the government functions needed to promote participation and create the environment in which participatory processes take place.

5. We as Citizens feel Neglected due to a lack of Public Participation in Governance; we often allege that Decision-Making is Centralised and Behind Closed Doors. The above statements are neither 100% True nor False. Still, there is an Innovative Practice through which every Citizen can Participate in Decision-Making Process and truly celebrate AazadiKaAmritMahotsavParticipatory Governance.

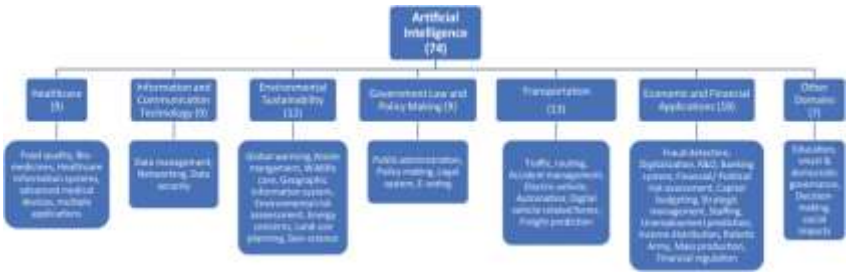
Artificial Intelligence:

Artificial intelligence refers to the intelligence of machines. This is in contrast to the natural intelligence of humans and animals. With Artificial Intelligence, machines perform functions such as learning, planning, reasoning and problem-solving. Most noteworthy, Artificial Intelligence is the simulation of human intelligence by Artificial intelligence have a so many included points are there like health care, machines. It is probably the fastest-growing development in the World of technology and innovation. Furthermore, many experts believe AI could solve major challenges and crisis situations.

Types of Artificial Intelligence

1. Reactive machines – These machines can react to situations. A famous example can be Deep Blue, the IBM chess program. Most noteworthy, the chess program won against Garry Kasparov, the popular chess legend. Furthermore, such machines lack memory. These machines certainly cannot use past experiences to inform future ones. It analyses all possible alternatives and chooses the best one.
2. Limited memory – These AI systems are capable of using past experiences to inform future ones. A good example can be self-driving cars. Such cars have decision making systems. The car makes actions like changing lanes. Most noteworthy, these actions come from observations. There is no permanent storage of these observations.
3. Theory of mind – This refers to understand others. Above all, this means to understand that others have their beliefs, intentions, desires, and opinions. However, this type of AI does not exist yet.

Self-awareness – This is the highest and most sophisticated level of Artificial Intelligence. Such systems have a sense of self. Furthermore, they have awareness, consciousness, and emotions. Obviously, such type of technology does not yet exist. This technology would certainly be a revolution transpotation information and communication technology and so on .



government law and polir making ,

Government initiative:

1. MyGov.in which is a platform that has been implemented for citizens to interactively engage within the government. An Aadhaar based biometric attendance system is being implemented in the central government offices in Delhi to begin with.
2. JeevanPramaan Portal: A portal which allows pensioners to submit their life

certificate, which can later be disbursed to the agencies for necessary processing. E-Greetings a portal for government greetings which is an eBook Platform has been developed; this can be used to upload e-books.

3. eSAMPARK which is operational is an IT Platform for Messages to Elected Representatives Digital Locker Revamping of Mission Mode and Other e-Governance Projects like Transport, PDS, e-Prisons, National Scholarship Portal, Payonline, Checkpost online, etc
4. Policies to help departments in speedy implementation of e-governance projects have been developed. There are also hurdles that are needed to be sorted out. To begin with, there is a lack of digital infrastructure. Another prime concern has been broadband penetration. According to a report released by The UN Broadband Commission released India ranked 131 out of 189 countries on fixed-broadband subscriptions in 2014.
5. Then there is a concern about rural connectivity, the government is this with the aim to connect more than 2 lakh village panchayats. The monitoring and evaluation system is also weak and needs to be improved.
6. For e-governance initiatives to be truly successful government support at the highest level is required, next application of Information Technology should be preceded by process re-engineering; then an intellectual and empowered leader with a dedicated team who can conceptualize and implement e-Governance projects with the help of officials at all levels and technological solution providers are needed; Issues of connectivity and electricity supply are of paramount importance; and In case of complex projects, all components need to be identified and analyzed at the outset, followed by meticulous planning and project implementation.

Conclusion

It is hence necessary that proper steps be taken to disseminate information about government policies and their impact to various stakeholders and to establish an active feedback mechanism. Govt initiative like mygov.in and PRAGATi portal are step in the right direction. Social audits and EIA must be promoted. E-governance is the best solution to the problem of slow delivery of services by increasing the efficacy of government offices. It also provides the time-bound delivery of service, transparency in the work, cost effective delivery of service for both government and citizens.

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Unleashing the Power of Digital India: Achieving Inclusion and Equity for All

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Abstract

The Digital India programme has been hailed as a revolutionary force for India with the power to close the digital divide, decrease inequality, and improve access to basic services. This study examines the potential of Digital India to build a just and inclusive society for all people, with a focus on the contribution of the state, business, and civil society. It looks at the advancements made thus far, the problems that still need to be solved, and potential solutions to make sure that all citizens can take advantage of the digital revolution. The article goes on to discuss the need to provide a supportive environment for digital infrastructure, increase the capability of people and organisations to use technology, and aid those who face barriers to utilising and accessing digital services. The essay also explores the significance of legislative and regulatory frameworks that support data privacy and digital inclusion. India has made impressive strides in recent years in harnessing the latent of digital technology to promote societal and economic development. The government has set out on a quest to build an inclusive digital infrastructure that would allow for the equal distribution of resources and services to all of its residents with the launch of Digital India. In order to achieve inclusive growth, equal access to services and resources, and enhanced quality of life for everyone, this article evaluates the possibilities of Digital India. The National Digital Communications Policy, the National e-Governance Plan, the Digital India Initiative, and the Digital India Program are among the different elements of Digital India that are covered in the introduction. The subsequent section looks at the many steps taken to guarantee the effective execution of these components as well as the difficulties encountered. Finally, it investigates how India may use technology to promote more fairness and inclusion for all. In order to ensure long-term sustainability and fully realise the promise of Digital India, the essay suggests that India must continue to invest in its digital infrastructure.

Keywords: 1. India digital Social Inclusion 2. 5. National e-Governance Plan 6. Digital Divide 7. Data Privacy 6. Electronic Infrastructure 7. Regulatory Environments

Introduction

In order to ensure that citizens could access government services online, the Indian government launched the "Digital India" plan in 2015. This was done through enhancing online infrastructure and increasing internet connectivity. The program's objectives include teaching digital literacy to locals and connecting remote areas to broadband networks. The campaign benefits from and supports other key government programmes including BharatNet, Make in India, Start-up India, Standup India, industry corridors, and Sagarmala.[1](Karnati & Sheikh, 2021). The plan aims to strengthen India in the digital arena while bridging the technical gaps between the government and its people, systems and infrastructure, problems and solutions. The tool for Digital India and the determination of India, according to Prime Minister Narendra Modi, is AatmaNirbhar Bharat, a depiction of a powerful Indian emerging in the twenty-first century. The

[1]Karnati, S., & Sheikh, D.N. (2021). Cashless Economy: Epitomizing the Role of Various Institutions in Promoting Digital Literacy. International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences.

effort is empowering the common citizen by bridging the gap among government officials and the populace. The Prime Minister talked with participants in the programme during its sixth anniversary celebration and commended India for its inventive spirit and speedy uptake of new technology. By improving online infrastructure and boosting internet connectivity, the Indian government has started an initiative identified as "Digital India" to strengthen the country in the technological sector and make sure citizens are able to utilise government resources online. The programme aims to bridge the gaps between challenges and solutions, resources and facilities, and between government officials and the general public. The tool for Digital India and the determination of India, according to Prime Minister Narendra Modi, is AatmaNirbhar Bharat, a depiction of a powerful Indian rising in the 21st century[2](Anthony & Padmanabhan, 2010).

India is a big, populous country whose citizens must have online access to government facilities through improved online infrastructure and expanded internet connectivity, hence the need for Digital India. The Government of India's Digital India project seeks to transform India into a technologically enabled knowledge economy and society. In order toward ensure that locals can access government services online, high-speed internet networks will be developed in rural areas as part of the project. The campaign's three key themes consist of digital service delivery, digital infrastructure development, and digital literacy. The major objective of the Digital India Campaign is to close the digital divide between urban and rural regions by giving rural portions of the country access to high-speed internet. The goal of the initiative is to digitally democratise the country and provide rural areas with access to fast internet networks.

The Digital India campaign is a project that includes strategies for providing granting remote sections of the country access to high-speed internet. The Indian government launched the Digital India plan to create an online infrastructure and internet connectivity so that citizens could access government services online. The initiative would guarantee that individuals could access government services online, which provides a beacon of optimism in less developed areas[3](Kedar, 2015). In terms of electronic services, goods, manufacturing, and employment prospects, the campaign envisions inclusive growth. The government is encouraging people to utilise technology as much as possible, and this campaign provides a great chance for the nation's digital economy to expand. The Digital India campaign is a project that includes strategies for providing high-speed internet access to the nation's rural areas. By 2022, India's digital economy may reach $1 trillion, and Digital India will be successful until all Indian citizens can take use of its benefits[4](Kedar, 2015).

Digital India and Achieving Inclusion and Equity for All

A government project called "Digital India" aims to provide all of the nation's residents with digital infrastructure, digital access, digital literacy, and digital empowerment. The project aims to make the nation into a knowledge economy and society that is enabled by technology. Its primary goals are to widely disseminate digital infrastructure and services, to promote digital inclusion, to close the digital divide, to utilise technology to strengthen governance, to spread digital literacy, and to offer safe and quick access to services[5](Kaur, 2017). Digital Infrastructure, Digital Services, and Digital Empowerment are the three main areas of concentration for Digital India. High-speed internet networks, Digital infrastructure includes things like accessibility to digital services then networks, the creation of digital infrastructure in remote and rural areas, the acceptance of e-governance tools, then the promotion of digital literacy. The term "digital services" refers to the availability of services including banking and financial services, healthcare, education, agricultural services, and e-commerce."(*This Will Help in Bridging the Digital Divide by Offering*

[2]Anthony, J., & Padmanabhan, S. (2010). Digital Divide and Equity In Education: A Rawlsian Analysis. Journal of Information Technology Case and Application Research, 12, 37 - 62.

[3]Karnati, S., & Sheikh, D.N. (2021). Cashless Economy: Epitomizing the Role of Various Institutions in Promoting Digital Literacy. International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences.

[4]Kedar, M.S. (2015). Digital India New way of Innovating India Digitally. *International Research Journal of Multidisciplinary Studies*,

[5]Kaur, G. (2017). FINANCIAL INCLUSION AND DIGITAL INDIA. Abhinav-National Monthly Refereed Journal Of Research In Commerce & Management, 6, 60-63.

Governance, Banking, and Health Services Online in the Rural Areas. - Consensus, n.d.).

Access to digital resources, creation of digital material, promotion of digital literacy, and accessibility to online government services are all part of digital empowerment. The goal of Digital India is to achieve fairness and inclusion for all. Inclusivity refers to giving all segments of the population, regardless of their socioeconomic status, access to digital services and infrastructure. In order to guarantee that everyone has an equal chance to profit from the digital revolution, equity entails ensuring that all citizens have equal access to digital services and infrastructure. By giving impoverished, disadvantaged, and marginalised groups of the population access to digital services and infrastructure, Digital India aims to achieve these goals. Additionally, it seeks to advance digital literacy and open up access to online government services(Gelb et al., 2018). Finally, it aims to close the digital divide by giving rural and distant communities access to digital services and infrastructure. The ambitious project known as "Digital India" aims to ensure that everyone has access to the internet and is empowered by it. It aims to close the digital gap by giving all residents access to digital services and infrastructure. It is a critical action for India's inclusive development and progress.

Overview of India's Digital Transformation

The Indian government has launched a significant programme called India's Digital Transformation with the aim of changing India into a knowledge-based society and economy. The goal of the Digital India plan is to improve online infrastructure, increase internet connectivity, and increase use so that citizens of the country may access government services online. The main objectives of the Digital India campaign are to provide on-demand governance and services, ensure that citizens can access government services online, connect rural areas of the country to high-speed internet, and give every citizen access to digital infrastructure for use in a variety of ways(Udupa et al., 2019). The three main pillars of the Digital India programme are the creation of digital infrastructure, the delivery of services online, and digital literacy. The Digital India Mission's three major objectives are to guarantee that every citizen has access to the internet, to provide on-demand government and service options, and to make digital facilities available to all citizens as a useful resource. The three main pillars of the Digital India project are creating digital infrastructure, offering digital goods, and fostering digital literacy. The McKinsey Global Institute claims that if the public and private sectors work together to create new digital ecosystems, digital technologies might be beneficial to the Indian economy by 2025[6](Kedar, 2015).

Challenges and Opportunities of Digital India:

India's digital transformation has presented possibilities as well as obstacles. The requirement for digital infrastructure as a service to every person is one of the major problems. Although the Indian government has been working to transport high-speed internet to the nation's rural areas, there is still a long way to go. Since not all facets of Indian society have embraced digital technologies, there is also a need for digital literacy. Concerns exist around the security and privacy of personal information as well as the digital gap between urban and rural locations. The Digital India programme, however, also offers a lot of options. By bridging the gap between the government and the populace and by offering on-demand governance and services, it seeks to empower citizens(Singh, 2010). Additionally, the campaign encourages inclusive growth in the production of goods, commodities, and jobs. The expansion of the digital economy and the appearance of start-ups are results of the increased acceptance of digital technology. In addition, the Digital India campaign has taken attempts to link rural portions of the country to high-speed internet networks. The Indian government has taken action to link the nation's rural areas to high-speed internet networks under the Digital India Mission. In addition to the many projects that Digital India has done, it has also started the Public Internet Access Programme to make digital resources available to all residents as a useful resource. India's digital transformation overall offers both possibilities and problems. and the government is striving to address these

[6]Kedar, M.S. (2015). Digital India New way of Innovating India Digitally. International Research Journal of Multidisciplinary Studies,

issues while taking advantage of the opportunity to convert the nation into a knowledge economy and society that is empowered by technology.

Inequality in Access to Technology

India has a sizable digital gap that causes disparity in access to and use of technology, especially when it comes to criteria like age, geography, gender, caste, and language, among others. More than 60% of Indian families still lack access to digital technology, and almost 70% of the population has inadequate or no connectivity, according to Oxfam's India Inequality Report 2022[7](Tayo et al., 2016). With 320 million students in India negatively impacted by the COVID-19 epidemic and switching to e-learning, which consists of a network of 1.5 million schools, it has worsened already-existing disparities. In India, where women are reportedly 36% less likely than males to have access to mobile internet, the digital gender gap is also apparent[8](Elumalai et al., 2020).For many individuals in India, marginalisation is being caused by a lack of internet and technological access. Due to the COVID-19 epidemic, which negatively affected 320 million students in India who were switching to e-learning, already existent discrepancies have gotten worse. While technology can assist with some of India's problems, it is not a universal fix1. The underlying issues of meaningful access and rights-based policies should also be addressed by governments.In India, efforts are being undertaken to close the digital gap. The Digital India programme and Aadhaar (the unique identity number) are two examples of initiatives that have significantly advanced digital intervention. However, more regulations are required to guarantee that Indian women participate in and gain from the digital dividends. Through their work for social media networks run by tech companies, women like Nirmala Kumari are assisting other women in India in establishing connections[9](Srinivasan & Johri, 2013).

Security Concerns and Data Protection

A comprehensive national legislative framework that regulates the collection, disclosure, usage, and exploitation of personal data is lacking in India. However, data protection in India is governed by a number of provisions of the IT Act of 2000, as amended to time to time, as well as the Data Innovation (Reasonable Safety Practises and Methods for Sensitive personal information or Data) Rules of 2011[10](Puluhulawa et al., 2020). A proposed statutory data protection framework in India called the Personal Data Protection Bill, 2021, will materially alter the law. The fundamental principles of the law are Individual consent, notification of data breaches, transparency, purpose-based processing, technical security, and the rights of those who supply private information that is sensitive, such a social security number, as well as personal data like a name and email address[11](Chatterjee, 2019).The proposed data protection bill has drawn criticism, meanwhile, for encouraging state monitoring and eroding fundamental freedoms of privacy and security by strengthening the state's surveillance capabilities. The present measure, like the 2019 draught, would provide the government considerable authority to exempt itself from complying with the law's data privacy rules for nebulous and overbroad reasons, going beyond any justifiable exclusions. Additionally, the bill does not adequately address important issues, including inadequate child protections.

Improving Digital Literacy and Inclusion

The largest government-run digital literacy programme in the world is in India, yet there is still potential for development in terms of capability, design, and execution. Tracking varying degrees of online competency and who has access to the cyberspace is necessary to increase digital inclusion and literacy in India. The Digital India programme has proposed an inclusive framework for digital literacy that addresses multiple literacies such as safety for low-literate apprentices in low-resource settings

[7]Tayo, O., Thompson, R.J., & Thompson, E.J. (2016). Impact of the Digital Divide on Computer Use and Internet Access on the Poor in Nigeria. Journal of Education and Learning, 5, 1-6.

[8]Elumalai, K.V., Sankar, J.P., Kalaichelvi, R., John, J.A., Menon, N., Alqahtani, M.S., &Abumelha, M.A. (2020). Factors Affecting the Quality of E-Learning During the COVID-19 Pandemic from the Perspective of Higher Education Students. J. Inf. Technol. Educ. Res., 19, 731-753.

[9]Srinivasan, J., & Johri, A. (2013). Creating machine readable men: legitimizing the 'Aadhaar' mega e-infrastructure project in India. Proceedings of the Sixth International Conference on Information and Communication Technologies and Development: Full Papers - Volume 1.

[10]Puluhulawa, F., Puluhulawa, J., &Katili, M.G. (2020). Legal Weak Protection of Personal Data in the 4.0 Industrial Revolution Era.

[11]Chatterjee, S. (2019). Is data privacy a fundamental right in India? International Journal of Law and Management.

with slow internet bandwidth and health literacy for susceptible populations in rural areas. Through efficient digital training and in-tribe testing, this framework aims to foster motivation, interest, and confidence.Using this innovative model, policymakers can improve the current training and service facilities that provide the conventional model of digital literacy education while extending the reach and efficacy of digital inclusion through the last mile. In India, where e-governance is becoming more and more common, there is an urgent need to increase digital literacy. India can close the digital gap and guarantee that every person has access to the advantages of the digital age through increasing digital inclusion and literacy.(Chowdary, 2002).

How to Improving Digital Literacy and Inclusion?

1. To make sure that pupils are taught the fundamentals of technology, digital literacy programmes should be implemented in schools as soon as feasible. This will assist students in acquiring the abilities needed to efficiently use technology(Kazakoff, 2014).
2. Give everyone access to the internet: Everyone should have access to the internet, especially in rural places where connectivity is scarce. This may be accomplished by offering inexpensive internet connection via open Wi-Fi hotspots and other accessible methods(Zheleva et al., 2013).
3. Provide access to digital gadgets: Those who cannot afford to buy them should be given access to digital devices. Government programmes that give kids access to public computers or laptops or tablets are two examples of how this might be accomplished.
4. Promote digital literacy in local languages: To enable easy access for people from a variety of backgrounds, digital literacy programmes should be created in local languages (Matli & Ngoepe, 2020).
5. Utilise existing networks: To deliver instruction on digital literacy, existing networks like libraries, schools, and NGOs should be used. This can assist in reaching a bigger audience and raising awareness of digital literacy.(Tsaniyah& Juliana, 2019).
6. Train educators: In order for educators to properly teach kids about digital literacy, educators need get training in the fundamentals of the field. This will guarantee that students have access to cutting-edge technology and can take use of it.
7. Raise awareness: Media campaigns and outreach initiatives should be used to raise awareness about digital literacy. People will learn about the value of digital literacy and how it may benefit them in their daily life thanks to this.

Achieving Inclusion and Equity Through Digital India.

If inclusion and fairness are to be accomplished through Digital India, concerns about digital literacy, digital access, and digital financial inclusion must be addressed. Having the right access, skills, motivation, and trust to use the internet confidently is a requirement for digital inclusion. A comprehensive framework for digital literacy has been developed for disadvantaged populations in rural regions as part of the Digital India plan. One of the major issues is addressing different literacies, such as eSafety, health literacy, and financial literacy, for low-literate students in low-resource settings with sluggish internet access(Azzopardi-Muscat & Sørensen, 2019). To enhance digital access, efforts must be made to ensure every person has access to a cheap and practical connection. Over the past ten years, India has made impressive progress towards financial inclusion, progress that the government has supported through initiatives like the Digital India The movement as well as the Pradhan Mantri Jan Dhan Yojana. A society that is welcoming may be achieved through lowering poverty and solving the problems with ensuring sustainable income. Addressing the gaps in financial knowledge and access to financial services is necessary for improving digital financial inclusion. In the end, organisational culture, thought leadership, creativity, and employee engagement that increases the company's relevance will promote digital inclusion and equity(Kaur, 2017).

Promoting Digital Financial Inclusion

India has made considerable steps to promote digital financial inclusion since

20141. One of the country's largest-scale financial inclusion efforts ever has enabled over 330 million individuals to participate in the officially acknowledged banking system. The Indian Stack, a digital infrastructure, is transforming access to finance in an economy where most retail transactions are cash-based. The India Stack is expanding access to banking services by decreasing the cost of verifying identities of individuals through digital ID cards, enabling digital payments among banks, fintech firms, and electronic wallets through open-access programmes norms, and limiting access to private information about individuals via consent. The stack makes it feasible for digital payments to proliferate, which is a major driver of India's economic development(Arner et al., 2018).

Digital financial inclusion refers to the use of efficient digital technologies to reach disadvantaged and financially excluded populations with a variety of official financial services which are morally provided at a cost that is accessible for customers and feasible for providers. Digital financial services may be revolutionary for the 2.5 billion individuals who only use cash because they lack access to legitimate financial services(Fernandes et al., 2021). Increased availability of credit, savings, coverage, and other financial products that can help the financially excluded and disadvantaged manage risks, reduce use, and invest in the future is one of the benefits of digital financial inclusion. The models of financial inclusion via the internet that are emerging in countries all over the world incorporate new market participants and allocate tasks & risks in a different way than traditional methods of providing retail financial services. Therefore, it is essential that all parties involved cooperate and communicate well in order to guarantee that the implementation of the inclusion of digital currencies is done so in an ethical and long-lasting way(*Our Results Confirm the Crucial Role That Digital Financial Services Play in Financial Inclusion, Particularly in Improving Access to and the Use of Services by the under-Served Population. - Consensus*, n.d.).

Addressing Gender and Socio-Economic Disparities:

In India, gender and socioeconomic inequities are serious problems. The socio-economic growth of impoverished women is hampered in India by gender discrimination, and female poverty is exacerbated by socio-economic discrimination there. Even though men and women are given equal rights under the Indian Constitution, there are still significant gender differences in a number of key areas. Gender inequality and their societal causes have an effect on women's health, educational success, and financial circumstances. Inequity in socioeconomic and gender terms is also a result of the digital gap in India(Arora, 2012). The Bharat Net project, which aims to deliver nationwide optic fibre connectivity and ensure affordability for all individuals to reduce accessibility disparities, needs to move forward quickly by the Indian government. In India, the financial repercussions of gender disparity in the workplace and in terms of health are also substantial.In India, there are significant gender discrepancies in employment, health, and education, which emphasises the need to change economic practises to advance gender equality. To lessen gender inequality, women-cantered changes are required, and the government must implement gender-specific laws for the whole Indian population(Poddar & Mukhopadhyay, 2019). In conclusion, resolving gender and socioeconomic gaps in India necessitates a multidimensional strategy that incorporates women-cantered reforms, economic measures that advance gender equality, and bridging the digital divide. In order to reduce gender imbalance, the Indian government must take major action to guarantee that all residents have access to inexpensive and dependable digital infrastructure. Women's health, education, and economic possibilities must also be given top priority.

Developing Infrastructure and Accessibility:

In India, gender and socioeconomic inequities are serious problems. The socio-economic growth of impoverished women is hampered in India by gender discrimination, and female poverty is exacerbated by socio-economic discrimination there. Even though men and women are given equal rights under the Indian Constitution, there are still significant gender differences in a number of key areas. Gender inequality and their societal causes have an effect on women's health, educational success, and financial circumstances(Bhattacharya et al., 2018). Inequity in socioeconomic and gender terms is also a result of the digital gap in India. The

Bharat Net project, which aims to deliver nationwide optic fibre connectivity and ensure affordability for all individuals to reduce accessibility disparities, needs to move forward quickly by the Indian government(Obren& Howell, 2011). In India, the financial repercussions of gender disparity in the workplace and in terms of health are also substantial. In India, there are significant gender discrepancies in employment, health, and education, which emphasises the need to change economic practises to advance gender equality. To lessen gender inequality, women-cantered changes are required, and the government must implement gender-specific laws for the whole Indian population(*The Findings Suggest That besides Labour Law Reforms for Ensuring Gender Neutrality in Workplaces, Focused Government Policies for Promoting Women Entrepreneurship and Skill Development of Women Are Urgently Required for Reducing the Gender Wage Gap in India. - Consensus*, n.d.). In conclusion, resolving gender and socioeconomic gaps in India necessitates a multidimensional strategy that incorporates women-cantered reforms, economic measures that advance gender equality, and bridging the digital divide. In order to reduce gender imbalance, the Indian government must take major action to guarantee that all residents have access to inexpensive and dependable digital infrastructure. Additionally, women's health, economic possibilities, and educational chances must be given top priority.

Conclusion:

In conclusion, the Digital India plan has demonstrated significant promise for establishing a just and inclusive society for all residents. India has taken significant measures to make sure that all of its residents can benefit from the digital revolution through the investments made in digital infrastructure, the expansion of e-governance, and the establishment of protective legislation and regulations. To guarantee that everyone can access and use digital services, regardless of their location, socioeconomic background, or other circumstances, more work still has to be done.India can make sure that its Digital India plan is effective in reaching its aim of social and economic inclusion and fairness by continuing to invest in its digital infrastructure, offering suitable training and education to citizens, and creating a conducive atmosphere for technology. India's digital revolution is well under way and has already started to benefit its people greatly. The promise of digital India is to go much farther and build a more equal and inclusive society for all. India can continue to benefit from digital technology and build a brighter future for all of its population with the correct investments, legislation, infrastructure, and education. With the appropriate strategy, Digital India can promote fairness and inclusion for all.

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Digital Agriculture in India: Opportunities and Challenges

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Abstract:

India is having extremely low income in Agriculture Sector; hence efforts must be taken to increase that income. For this, it's crucial to improve the effectiveness of the entire value chain and agricultural production operations. One method for improving productivity and revenue in agriculture throughout the world is digital agriculture. In this article, the researcher has described digital agriculture in the context of Indian Agriculture.And also identified the opportunities and challenges of the development of digital agriculture in India.

Farmers can remotely operate their fields through technology, which also makes managing agricultural activities more efficient. IoT will soon enable automatic real-time interaction, controlling, and decision-making since, as previously said, agriculture sensors, actuators, and equipment will all be connected. While reducing time and maximizing productivity and profit, this will need the least amount of human labour. The creation of decision support systems and data integration from many sources is the goal of cloud-based farm management platforms like SmartFarm and Agrivi. Growers now have access to information for dynamic management planning that was previously only available to corporate megafarms thanks to all of these.The researcher has found that reduced-cost technology, user-friendly portable gear, pay-per-use rental arrangements, legislative backing, and leveraging the strength of farmer collectives are crucial. Using more advanced agricultural technology is one of the most common strategies to increase farmers' revenue. The research indicates that the key to increasing productivity is the use of better technology.

Keywords: Production, IoT, farmers' revenue,Digital Technology, Farm management.

Introduction:

In recent years, increasing farmer incomes has been the emphasis of Indian agriculture. Following the Indian Prime Minister's pledge for doubling farmer incomes and the ensuing budget announcement1 in support of this, this became official government policy. India is second in the world in the production of wheat, rice, groundnuts, vegetables, fruits, cotton, and sugarcane, but first in the production of milk, jute, and pulses. Fish, cattle, poultry, spices, and plantation crops are among the products it produces in the largest quantities. Therefore, while earnings for farmers are undoubtedly insufficient as a result of their small landholdings, the output is not India's agriculture's main challenge by any means.The use of digital technologies in agriculture to improve the overall effectiveness of the agricultural production processes as well as the complete value chain is one strategy to raise farmer earnings. "Digital is without a doubt the way Sustainable food, and AI (Artificial Intelligence) is the future of digital. AI applications are being implemented across several facets of agriculture, from gene sequencing in seed production to Internet of Things (IoT) networks of implements and sensors that create data and image recognition systems that test and grade crops and commodities.

The potential social and economic advantages that the technology may provide are also a goal of India's National AI Strategy. In addition, the National Strategy on AI lists agriculture as one of the sectors where AI-driven solutions should be implemented first. 2019 (Niti Aayog) Ours is a Columbia University initiative named "A New Indian Model of ICT-led Growth and

Development" in collaboration with The Energy and Resources Institute (TERI). The project looks at the potential for a new ICT-driven model of growth and development in India's agriculture industry and seeks to recommend ways for the country to keep using ICTs to advance development in important industries like agriculture, among others. The Researcher has written this article analyzing the difficulties and opportunities of digital agriculture in India. In this essay, we first examine several definitions of digital agriculture and what it entails. Then we go over some of the uses of digital agriculture, and lastly, we put digital agriculture within its Indian context by listing its opportunities and limitations.

Literature Review:

BeriyaAbhishek: This Study describes the difficulties that digital agriculture faces in India and offers suggestions for its implementation. If we want Digital Agriculture to be scalable and accessible to the majority of Indian farmers, it must be tailored to fit the needs of a typical Indian small farm. According to IBM, a typical farm may produce 500,000 data points every day, which can help farmers improve yields and boost earnings. while the fact that the average farm in India produces millions of data points while being relatively tiny and producing far fewer data points,Researcher has suggested thatthere is still some way to transportable here for Indian farmers because it would take expensive computers, storage, and processing capacity to appropriately combine and evaluate the data.

Soma Tammara and NuckchadyBhooshan:"Communicating the Benefits and Risks of Digital Agriculture Technologies: Perspectives on the Future of Digital Agricultural Education and Training" was the topic of their study. The three primary goals of the paper were as follows: 1) To Investigate how educators and trainers view and address the advantages and dangers of digital agricultural technology in their instruction, training, and communication;2)To determine if social justice and food sovereignty are included in or taken into account by digital agriculture training and or pedagogy; and 3) To identify relevant policies to support an ethical and responsible approach to digital agriculture in education and training.This article concludes that academics, government employees, and private agricultural consultants—three groups of educators—have different, often radically opposing messages about the advantages and disadvantages of digital agriculture. This is especially true for academics or instructors who are more familiar with social equality concerns than those who only view digital agriculture from a technological, environmental, or economic standpoint. While government officials are very supportive and speak more optimistically about the digitalization of British Columbia's agricultural industry, this study indicated that the academics and trainers interviewed had greater worries or skepticism about digital agriculture.

KaayaJanet: His Study highlights the issues related to information technology in agriculture with emphasis on developing countries, especially Africa and Tanzania. This study focuses on current developments in information technology covering various IT devices and their applications in Agriculture development. And summarises the importance of information in generating and disseminating agricultural technologies in Africa and Tanzania.

Rehman Abdul and et,al.:They Conducted a study on "Modern Agricultural Technology Adoption: Its Importance, Role, and Usage for the Improvement of Agriculture." This essay's major goal is to present current technology adoption and discuss its value, applications, and contribution to bettering agriculture. Basic agricultural technology, such as types of machinery, has evolved a little during the past century. Planters and harvesters are improved upon or given a small improvement thanks to contemporary technology. Grain is still chopped, threshed, and separated in the same manner using today's $250,000 combine.However, as computer monitoring systems and self-steer programs enable the most powerful tractors and implement to be more exact and less wasteful in their use of fuel, fertilizer, or seed, contemporary technology is altering the way that humans run machinery. Examples include GPS locators. Future autonomous tractors and other agricultural equipment might be produced in large quantities using GPS and electrical sensors.

Objectives of the Study:

1. To Understand the Concept and Roleof Digital Agriculture in India.
2. To Study the Opportunities of Digital Agriculture in India Context.

3. To Study the Challenges of Digital Agriculture in India.
4. To Suggest the Importance of Digital Agriculture in increasing agricultural Productivity.

Research Methodology:

The Present Study is based on descriptive research methodology. It is gathered information from secondary Sources. The Secondary data is collected from the Government of India's Website, various Journals, Articles, Books, mass media tools, etc…

What is Digital Agriculture?

Digital agriculture has the potential to increase agricultural productivity, consistency, resource, and time usage. This has significant advantages for farmers as well as global societal gains. In order to create new opportunities, it also makes it possible for businesses to communicate information beyond conventional industry borders. Using cutting-edge technology that is integrated into a single system, digital agriculture enables farmers in the agricultural value chain to increase food output.

Using digital technology to manage crops, animals, and other activities involved in growing and maintaining food resources is known as "digital agriculture." The phrase is frequently used to indicate the many applications for the variety of data gathered in this industry. However, it also pertains to how technology functions and is integrated throughout the entire supply chain, from seeds or farm animals to the final consumer.

Role of Digital Agriculture in India:

In the last Fifty years, agricultural development and policy changes have successfully emphasized the use of outside inputs to boost food production. This has caused a rise in the use of pesticides, inorganic fertilizers, animal feed, tractors, and other technology on a global scale. Natural resources and processes have been replaced by these exogenous inputs, which has diminished their effectiveness. Pesticides have taken the place of biological, cultural, and mechanical approaches for weed, disease, and pest management. Composts, nitrogen-fixing plants, and livestock manures have been replaced by inorganic fertilizers. Making greater use of these internal resources is the fundamental problem of sustainable agriculture.These resources can be produced by reducing the amount of external inputs consumed and by more efficiently renewing internal resources. There is growing evidence that regenerative and resource-conserving technologies and practices may benefit farms, communities, and entire countries in terms of both the environment and the economy.

Agriculture may benefit greatly from new or cutting-edge technology, both in terms of output and sustainability. For instance, best management practices are increasingly frequently used to enhance agriculture. Pests and illnesses can be controlled biologically, with less pesticide use, new disease-resistant hybrids, and cultural practices. Instead of using broad-spectrum pesticides, insect-specific chemicals, and biological insect controls are being used since they actually require fewer sprays and are thus more effective. Farmers may use information from GIS, crop models, and remote sensing to implement precision agriculture, which involves coordinating inputs depending on the actual yields of various sections of the field. These instruments are crucial in helping agriculture manage land for both farming and wildlife. The use of contemporary equipment, computerized tools, and information and communication technologies (ICTs) to enhance decision-making and production is altering agriculture as part of the digital revolution. Increased yields, lower costs, and a smaller environmental impact are being brought about by the adoption of a number of cutting-edge technologies in agriculture, including big data, robotics, artificial intelligence, and machine learning. Data-driven approaches are releasing production potential in a resource-saving and sustainable manner.

Applications of Digital Technologies in Agriculture:

Digital technology is applied in agriculture in a wide range of ways. Some Important Applicable examples and possibilities are listed below.

Robotics: People who think of farming as idyllic country living may not be aware that the new generation of farmworkers doesn't want to pick fruit, pick up animals, or perform many of the labor-intensive tasks that are typically involved in farming. Nowadays, processing factories use robots to chop up corpses, and harvest strawberries, and milk cows. Over the next five years, the market for agricultural robotics is predicted to increase to $5 billion globally. **IoT And**

Sensors: This technology has tackled the key concerns of climate change and sustainability, animal welfare, and tracking in the food supply chain, the capacity to track products and live animals, detect health issues, and analyze the environment within the farm or the uptake of moisture from the soil in real-time is of enormous importance.

Artificial intelligence (AI): In many farming and food-related industries, learning via experience is more prevalent than explicit knowledge transfer. This presents serious challenges, such as how to avoid cognitive bias, human error, and misunderstandings.Extension agents, farming specialists, consultants, and professional experts may all perish, but it's more probable that AI will change how these fields operate.

3-D Printers: Farms all across the world will clearly benefit from 3-D printers' capacity to repair equipment, manufacture food, or even create prosthetics for precious animals. It becomes even more obvious at periods when supply chains are interrupted (as during Covid-19) or in areas of the world where there are unique distribution issues (like in Africa). In the food supply chain and on farms, 3-D printing results in real efficiency and cost savings.

KisanDrones: Drones have already surveyed 20 million hectares of China's cotton crop, and their mobility and capacity to identify objects that are difficult to see from the ground provide them valuable information on insect control, the use of fertilizer and herbicides, irrigation, and harvest times.

Virtual Reality (VR): It is a remarkable chance for both students and consumers to connect with farming to use Virtual Reality to teach kids about the internal workings of animals and how plants developed.

Cloud Connectivity: Cloud-based computing services use real-time internet connectivity to offer more flexible resources and economies of scale than traditional server-based or even edge solutions. When many farms are still not connected at all, the need for connectivity—especially 5G—presents a real challenge. Governments are aware that if farming is to be revolutionized, addressing links is essential. The divide between rural and urban regions will increase without it.

Blockchain technology in Food System: Blockchain technology is the most fascinating and misunderstood technology (using the same technology as Bitcoin), and can offer transparency to a market that typically struggles to gain the trust of consumers. The food industry has the potential to regain its position as a leader So we give thanks to blockchain technology.

Unmanned aerial vehicles (UAV): Popularly known as drones, they have had exponential growth aimed at surveillance, messaging, disaster assistance, and entertainment. Drones used in agriculture are able to track visible and infrared light spectrums using a variety of cutting-edge sensor types, generating mosaics that give a fresh "bird's eye view" of crops.

By providing information to better understand these complex systems, supporting individual or group decision-making, and facilitating concrete action, exchange, the reconfiguration of value chains, the development of strategies and policies, etc., digital technology could, in this context, aid in the positive transition towards agroecology in territorialized food systems and the protection of family farming. The approach that puts digital technology at the service of agroecology's transition and the rejuvenation of food systems is precious.

Benefits of Digital Agriculture in India:

1. It raises agricultural productivity while bringing down manufacturing costs.
2. It improves socioeconomic standing and reduces chemical use in agricultural production.
3. It promotes the effective and efficient use of water resources.
4. It reduces environmental and ecological impacts.
5. Farmers may boost productivity and production efficiency with the use of digital agriculture.
6. It can enhance soil fertility and quality, and it can encourage better water management.
7. It can assist farmers in addressing concerns related to food security and lowering their reliance on inputs like pesticides and fertiliser.
8. Smallholders can use digital technology to expand the markets for their products.
9. They can also make it possible to follow crops from seed to sale, giving vital information regarding agricultural yields and possibilities for marketing.

10. Agriculturalists may make better judgments regarding farming practices by using digital technologies to give them current information on weather patterns, input pricing, etc.

Key Challenges of Digital Agriculture in India:

Despite accounting for nearly 65 percent of all employment in India, the agriculture sector only contributes about 18 percent of the country's GDP. The government wants to raise agricultural production as a percentage of GDP, but there are still a number of obstacles to overcome despite major improvements in food grain production.

1. Farmers and rural populations are unaware of the advantages of digital agriculture.
2. Inadequate infrastructure and resources.
3. Unreliable internet connections.
4. Lack of skilled professionals.
5. Technologies and Control Over Labour.
6. Dependency and Working-Class Fragmentation
7. Lack of knowledge in using Digital Technologies.
8. Poor Market discovery mechanisms.
9. Agricultural Skills and Working-Class Fragmentation.
10. Digital Technologies and Labour Dependency.
11. Poor access to credit and information.
12. Lack of crop diversification.

Opportunities of Digital Agriculture in India:

The ecosystem will change as a result of the digitization of agriculture, and new businesses and tech start-ups will be formed as a result. Digital technology has the potential to improve integration into the vertical (upstream-downstream) and horizontal (territorial) ecosystems of agriculture and increase farmers' capacity for action if it is used in the right way to address the challenges of the agroecological transition (AET).

1. Improving Production
2. Social Opportunities
3. Open Innovation System
4. Reaching the Sustainable Development Goals
5. Higher Health Conditions
6. Territorial Resilience
7. Environmental Protection
8. Food Security
9. Improved Market Access
10. Production Model Transformation
11. Reducing the use of Fertilizers and increasing the efficiency of Agriculture production.

Suggestions and Conclusion:

Agriculture is made up of several intricately linked processes. It needs to be set up into effective stages in order to guarantee a decent yield. A specific product's success will be determined by a triangle consisting of the farmer, the technology service, and the consulting idea. Agriculture will eventually become digitalized, much like other sectors of the economy. Government should invest time and money in spreading the word about the advantages of digitalization. The rapid expansion of e-agriculture is hampered by poor connectivity in rural regions, hefty service fees, and a lack of fundamental computer literacy and comprehension. Power, telecommunications, transit, and physical infrastructure all demand large investments.

Rapid technology advancements in robotics, artificial intelligence, and remote sensing have fueled the growth of digital agriculture. These systems give farmers the ability to generate thorough, accurate, and transparent agricultural and livestock products at the national and regional levels, as well as to boost yield and quality while reducing their impact on the environment. The extensive digital transformation of agriculture will require solutions to a number of issues and limits, including accuracy, interoperability, data storage, compute power, and farmers' resistance to adoption.

In India, the outlook for digital agriculture is generally positive. The cost of technology, simplicity of use and maintenance, prompt resolution of complaints, effective governmental backing, and ease of access and operation are the essential criteria that will decide the success of digital agriculture in India. For digital agriculture to truly empower Indian farmers, there is also a need for solid research and development that considers last-mile delivery and local difficulties.

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Digital Literacy and Economic Inclusion Of Women: A Case Study Of Rural India

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Abstract

Digital technology and communication are part of our lives from the start till the end of the day. Technology is reaching every aspect of society and altering it dramatically. But there is one very significant and indispensable part of the society that has also been tapped by new advances and discoveries and that is education with the idea of E-learning. Digital technology was influenced on rural area. So much more could have been done to transport the revolution in learning process in rural areas of India. In this study development through E-learning in rural India is observed. If it planned properly then proper results will be affecting positively. The study found that digital literacy is an effective tool for empowerment of rural women. Digital literacy is learning, utilizing electronic technologies to become self-sustain among rural women in Karnataka.

Key words:Digital Technology, E-Learning, Women Empowerment.

Introduction

In India more than 6,50,000 villages, where more than half of its population live in rural areas and villages. Most are remote and too isolated to benefit from the country's impressive economic progress. Yet there's a growing desire among people in rural India to be part of the modern Digital India. But the last-mile delivery has always been a challenge for India due to low technology literacy among the rural citizens.The need for digital literacy in a country as populous and diverse as India is critical. If it is used for education, health care, citizen services, financial services, or any other basic need, technology and connectivity, it can make a huge difference to the socio-economic levels of a community, and ultimately to the country, since true progress comes from inclusive growth(ICT Academy, 2018). Digital Literacy plays a vital role in e-services like e-commerce, e-governance e-panchayat, e-learning, etc. In current scenario, technology is becoming an inevitable part of our daily life, be it using mobile phones, drawing cash from ATM machines, booking a railway ticket etc. Hence, there is a need that every individual in the country must be equipped with necessary skills so as to use the technology with responsibility. The definition of who is considered a literate or educated has evolved over time and it is not complete without Digital Literacy. Digital Literacy, according to the popular definition is the ability to locate, organize, understand, evaluate, and create information using digital technology (ibid). Making one person in every family digitally literate is one of the integral components of the Prime Minister's vision of "Digital India".Digital India vision promises to transform India into a fully connected knowledge economy, offering world class services at the click of a mouse. This vision aims to change the life in rural India by making every citizen a complete digital literate netizenWith this vision, ICT Academy a pioneer in the field of technology education in many ways, has a noble mission to take technology to the common man, in other words, to improve 'Digital Literacy' in India.digital literacy enhances the abilities of the women in particular and community in general to use digital technologies for meaningful actions within challenging life situations. Digitally literate women can operate computer related devices and help them in the process of nation building. But a key factor that is hindering the growth of a

digital India is the shortage of skilled work force this can be filled by women. Thus an integrated approach between digital India and skill India needs to be constructed to design programmes and impart training The role of private sector is very important. They have to be incentivized to develop infrastructure provide services and promote digital literacy as part of the digital India program. Women empowerment debates revolve around her enriching her ability towards equitable access to decent living(Smitha, 2017). Closing the gender gaps of internet access and technological empowerment is a very important issue in national progress. Women use internet fir very less while the use by men is more thus there is a gender gap in internet usage which is hindering the empowerment strategies. Finding critical information participation in community issue s, participation in local affairs finding income generation etc has been halted and this directly influences the women empowerment

strategies. Government of India need to make the average cost of broadband connectivity globally women earn 25% of the average earn less high internet prices discriminate disproportionately against women. Giving educational on digital skills about women rights women; they need digital literacy training and internet access in public schools. Some time internet content is not women friendly because the native language content is very less. Financial services relating to internet connection and access to mobile services making them Internet crimes are also increasing Cyber regulations have to be made very effective to protect women from cyber crime. 74% of the countries were not doing enough regulations Legislation to protect the privacy of data and communications is also still lacking across many countries(Smitha, 2017). In the final declarations of the United Nations World Summit on the Information Society (2003–2005), heads of countries recognized that the digital gender divide exists and they declared a commitment to women's empowerment and gender equality to solve this divide (WSIS, 2005). Moreover, there isa great need to improve digital media literacy for women and to develop the capacities of girls and women to contribute in society, especially in ICT-related fields (WSIS, 2003). Digital media literacy is very important because it has the ability to assist people to reach digital competency, to critically and confidently use ICT, and to learn and communicate. It is necessary to improve women's digital media literacy, so they can support the potential of the nation (Farida et al., 2011). Women have been excluded from governance for many centuries; the lack of access to ICT could reinforce that marginalization if women do not master the technology and begin speaking about the future of ICT and their place in it (Goulding& Spacey, 2002).

Women Empowerment and Digital Literacy

There are themes from the literature of digital media and women's empowerment, including digital media use, rural women's access to services and enterprises, e-governance, and data (Cummings & O'Neil, 2015). Widyastuti (2014) citing Herawati stated three vital aspects for empowerment. First, meaningful access relates to access digital information and each individual's ability to use technology to enhance social living. Second, motivation does not relate to the ability to use technology but also to what is done with the use of this technology. Third, empowerment involves the social capacity of individuals to actively and confidently use digital media (Widyastuti, 2014).

Government initiation

The government in 2014 had set up a preliminary target of providing digital literacy to 52.5 lakh people in four years, which has already been achieved by the department and have undertaken a registration of more than 84 lakh people currently. The Digital SakshartaAbhiyan (Disha) or National Digital Literacy Mission (NDLM) is a pan-India digital literacy scheme to provide education for free to BPL (below poverty line) households and members of the scheduled caste (SC) and scheduled tribe (ST) communities. The government has partnered with the Nasscom Foundation which is driving the digital literacy initiative with CSR (corporate social responsibility) funds from the multinationals such as Google, Microsoft, and Intel. US-based processor maker Intel has also launched "Unnati Kendra at Common Service Centre" and "EkKadamUnnati Ki Aur" initiatives to accelerate digital literacy and provide access to technology for rural Indians. The government is also encouraging village level entrepreneurs (VLEs) to impart digital programs through locallyspread common service centers (CSCs) in village blocks. The

government is also working with content providers to include local languages to make program citizen friendly and is giving special focus to mobility devices in line with government's strategic shift to m-Governance for various citizen-centric services (Abbas, 2016).

Private Initiation

Many private-sector companies, according to the official, have shown interest in the recent past to partner for the e-literacy initiative which Kumar believes, is a critical aspect for the mega Digital India umbrella program. The scheme is aimed to facilitate people to become digitally literate so that they can be empowered for digital inclusion. To make a person IT literate, NDLM is offering a 40-hour course that includes hands-on training on operating digital devices such as mobile devices, tablets and desktop with Internet browsing and search for basic information, online chat and e-mail communication (Abbas, 2016).

Helping women get online

With an aim to introduce 50 million women to the online world, Google India commenced 'Helping Women Get Online', a crusade to empower women to the online fraternity. The start will aim on conceiving awareness about the advantages of Internet for women, teach women to use the Internet to improve their inhabits and work with partners to enable very simple Internet access points for women in the homeland. Initially, Google will launch a mass newspapers campaign for women to encourage the website conceived for them; www.hwgo.com. This portal will equip owner with rudimentary content 'knowhow' about internet and some added special content for women in both dialects (Hindi & English). Women can call on tollfree helpline number - 18004199977 to get responses for any of their queries considering this crusade and farther on(IndusHealth, 2017).

Challenges of Digital Literacy for Women's Economic Empowerment

At present, 72% of women in India do not have access to mobile phones, according to GSMA's Connected Women report of 2015. Over 1.7 billion women do not own mobile phones in low and middle-income countries, it says, adding that women are on average 14% less likely to own a mobile phone than men, which translates to 200 million fewer women than men owning mobile phones. Data and statistics portal Statista states that as of October 2015 only 38% women have access to the Internet in urban India. This figure drops to 12% in rural India. Girls often hear or read about a certain panchayat or religious group banning the use of mobile phones in their region of influence. Many others do not want girls to learn about computers (Livemint, 2016). There are about 2,50,000panchayats in India encompassing some 6,50,000 villages and almost all of them are not connected to the internet. Neither are majority of 1.4 million government schools, 7-10 million teachers and several millions of children, as per official figures. There are millions of people who are denied of their rights and entitlements because of a corrupt administrative, financial and governance system. Their illiteracy, lack of information and inability to question the authorities become their biggest enemies. In such as a scenario, knowledge of the computers and access to the internet could help them come out of information darkness and access their rights, without the role of a middleman. Another key factor that hinders the growth of a digital India is the shortage of skilled workforce. Only an estimated 2.3% of India workforce has undergone formal skill training, which is significantly lower than the world average of 50% among developed nations. Thus the gender gaps in internet usage can be filled by augmenting basic educational resources for women especially in rural areas. Women have to be motivated to continue their education at least up to secondary level in these areas to match up with male's literacy points. The school dropout ratio needs to be focused with strong education policy. The patriarchal restriction has to ease out with awareness and community support. Women need awareness on equality, social dignity and women rights. Women access to public places including government offices, cooperative societies, banks, schools, public offices, etc are very restricted, and hence her community has to support her towards empowering them with responsiveness on equal rights of women Digital literacy has been hailed as a forceful catalyst for gender equality and promotion of women empowerment these strategies have to become the national development agenda of all the political parties. Gearing up Civic education computer assisted awareness classes, simplifying usage options; digital literacy campaigns enhancing political participation of women help women digitally.

Corporate tie ups need to endeavor towards promotion of women entrepreneurship gender budgeting. As it is a proven fact that digital literacy reduces workplace inequality it is a welcome programs for Indian women as well.

Methodology

The researcher applied case study methods with use of interviews, as in-depth interviews with a semi-structured format are often used in media and communication research. The researcher conducted in-depth interviews with prominent women by digital media. These interviews covered their digital media literacy programs. Investigation wasbased how various organizations can socialize and teach digital media literacy to women and also investigated the development of digital media literacy that has been operated and implemented in India. Both primary and secondary data was used;a range of government official websites and other related books, articles and journals are also used for the study.

Case Studies

SaraniKheda, Rajasthan,

Age 30 Gayatri taught her neighbour Lakshmi how to get online, and since then she's been researching sari blouse and bag designs - finding the inspiration and techniques she needs to push her work as a seamstress to new heights. She now charges much more for her work and uses the extra money she makes to pay for her education, support her mother, and more recently, treat herself to a gold ring.She is training illiterate, uneducated women in her area on how to use voice search to find information that can help them with everything from Sari design to stomach cramps. She helped her neighbour take care of cracked heels by finding tips online. The neighbour was very thankful as she walks large distances everyday and her feet were beginning to bleed. If they want to know how to solve a problem, all they need to do is ask.

MridulaDoddadevarapadu, **Andhra Pradesh**,

Age 33 Mridula studied till the 10th standard. She is married to a farmer and has two children, a son and a daughter. She claims that because her family members are very supportive she has been able to learn about the Internet and reach out to others in the village effectively. Now she is very well recognized in the village by women and children who refer to her as SaathiAkka (Saathi Sister). She's helped students find coaching classes and as well their exam results on the Internet. A number of women in her village have learnt how to make Chicken Pickle and Mysorepek (a speciality sweet). A school headmistress who is Mridula's student and has been a teacher for 30 years has started using the internet to help interest students more deeply in their learning, saying this has helped make lessons more

KomalaDoddaveernahalli,

Tumkur Age:35Komala studied PUC and she dropped it because of death of her father, at present she collaborated with IDF NGO of Tumkur and trained by syndicate bank for mini ATM service. She is the in charge to collect due amount from rural SHG in Bellavihobli through mini ATM service. She feels proud to serve her village. The villagers were very satisfied about her service, she made them access easy to draw money using only by Adhar card.

Discussion

Digital literacy and awareness of how to go beyond the known limited circle of customers and access a wider market would enable women to excel in micro local e-commerceand hyper personalisation which are being made possible with the proliferation of smartphones and analytics. Thus digital literacy has the potential for unleashing the potential of the entrepreneurial spirit of women in rural and semi urban areas which have been hitherto untapped. As Hillary Clinton has stated 'Equal rights for girls and women are the unfinished business of the 21st century', digital literacy is one of the powerful avenues available to get to this goal quickly. While women are being encouraged to become a part of the Digital India Mission and as the first step, become digitally literate, the key questions to be asked include—what needs to be done to help them take advantage of their digital literacy status, what are the expectations we are creating and how are we meeting their expectations? The feasibility to communicate freely and rethink the boundaries of their world is the starting point for the women netizens who have traditionally been made to believe that their worlds begin and end where they physically reside. Women are naturally endowed with interest in communicating and the availability of tools for access of information required and for interactions with the help of

inexpensive 'always on' devices would sustain their interest and engagement with the digital platform

Conclusion

The specially designed digital literacy programmes, the joy of discovering the multitude of opportunities on the digital platform, the possibilities for making them independent in many ways and the potential to rethink their identities, the potential to bring about a powerful transformation in women is emerging. Many things we have now begun to take as given and have accepted the new normal ways of functioning in the context of digitally connected world—for example booking tickets online, finding buyers and sellers for homes or sending birthday greetings to the loved ones—are new discoveries for the neo digital literates and are examples of simple everyday tasks where most often women have had to lean upon someone to get these tasks accomplished. Hence women find the new found independence, flexibility and the decision making process truly exhilarating.

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Awareness and Usage of Courses offered through Digital Learning Platforms initiated by Government of India – A Study

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Abstract

Digital learning platforms are the great initiatives for higher education not just in India but all over the world. Government of India (GOI) has established various digital learning platforms to provide quality and free education to the rural people. Through these platforms, learning shall happen on a click at anytime and anywhere. "Digitalisation can be a game changer"- it helps to empower the common people to attain quality education and enhance the socio-economic status. Further, these courses help in "bridging the digital divine in the country". The present study focuses on post-graduate students'awareness and usage of free digital courses provided by GOI. The aim of the paper is to knowPost-graduate students' awareness and usage of courses offered through digital platform courses initiated by GOI. The primary data required for the study collected through questionnaire which is circulated via WhatsApp using Google forms.The population of the study comprises of the students pursuing post-graduation in the select five universities namelyTumkur University,University of Mysore, Mangalore University, Kuvempu University and Bangalore University during 2021-22. With the use of convenience sampling the researcher selected 200 respondents, 40 from each University. The outcome revealed that many students have less awareness and knowledge about the digital learning courses offered through digital learning platforms and on how to enrol through Digital Learning Platforms. Most of the students are using and getting benefited from digital courseswho are seeking skill based education and online courses. The study suggested that education institutions have to take initiatives to provide required knowledge of digital platforms and assist students to get benefits from the free digital learning opportunities.

Keywords: Awareness, Usage,Digital Learning Platform, higher education, Courses

Awareness and Usage of Courses offered through Digital Learning Platforms initiated by Government of India – A Study

Globally, digital innovation is on the rise. Even from the entertainment to daily needs and for learning people are getting benefited from digital platforms. The government of India has been providing various digital learning platforms with the aim reduce the cost to learn, offer flexibility and content will be taught by excellent teachers in an application manner to attain the certificate from reputed academic institutions like Indian Institute of Management, Bangalore (IIMB), National Programme on Technology Enhanced Learning (NPTEL), All India Council for Technical Education (AICTE), Consortium for Educational Communication (CEC), Indira Gandhi National Open University) IGNOU, University Grant Commission (UGC) etc. The government of India is offering various knowledge and skill-based courses through digital learning platforms, such as SWAYAM, SWAYAM PRABHA, E-Shodha Sindhu, E-Acharya, E-Yantra, E-PG Patashala etc. These platforms will cover a wide range of subjects that may or may not be taught in regular campus studies.

The University Grants Commission (UGC) along with the Ministry of Education (MOE) has launched various digital learning programmes in India for Higher Secondary, Bachelors and Master's Degree students which will be benefited in learning required

and diversified content from reputed Institutions. Also get the Certificate which helps in adding value to the student career settlement. The awareness and usage of these platforms are very important. The present study is attempted to assess students' awareness, usage and experience of digital platform and to know their opinions regarding free digital courses.

Review of Literature

Review of the literature involve referring of existing research work in the respective demine. It provides theoretical framework for the research and enlarge knowledge of the researcher. In this researcher have reviewed various scholarly articles and publications, some of them are as follows. Sharma, A. and Jhamb, D (2017) study has been done on demographic profiles of working professionals across the globe who attaining e-learning platforms to educate themselves. The study used primary and secondary information to do exploratory and descriptive research. It provides insightful information on the demography and psychographic factors among working professionals in India.

Pampouri, A. et.al, (2021). This paper has been presented regarding the emergence and spread of MOOCs. It is bibliographic research based on internet sources and various journal articles. This review's purpose was to highlight the learning opportunities offered to learners by use of internet technologies, through various new learning models. The researchers analyzed a historical review of MOOCs and study concluded that MOOCs increase participation in lifelong learning and provide open, equal and free training for personal development and to meet job requirements as per individual needs.

Gaikwad, N. N (2022) in this paper researcher has reviewed the Pros and Cons of MOOCs in India by referring to various journals and studies. This paper has concluded that MOOC is a platform for improving education in an innovative way of teaching and learning. But it has both advantages and disadvantages. Disadvantages are due to lack of planning, cheating practice and individual attention are harmful to the MOOCs.

Rashmi, W. et.all (2018) study has reviewed 32 studies regarding the usage of Massive Open Online Courses (MOOCs) in Malaysian higher education from 2012 to 2017. This study has systematically analyzed various journals, conference papers, PhD theses and Master's dissertations etc. The study has been done on the use of MOOCs in three fields which are IT/IS, service management and marketing. This study concluded that students' academic performance can be influenced by MOOC which helps students in the learning process by offering materials and enabling them to attain shared information.

Chauhan, J., and Goel, A (2017). The researchers have attempted to overview the MOOCs in India. Their study provided the theoretical and technical background about MOOC platforms with a discussion of the features of the different MOOC platforms. This study has done a comparative analysis of MOOCs by swing web analysis. It concluded that there are some challenges faced in implementing MOOC in India.

Suresh, K., and Srinivasan, P (2020). This paper is undertaken to discuss the various platforms of MOOCs and their merits. The study has given a wider inside regarding MOOCs and selected platforms which anyone can access anywhere at any time. The authors of this paper concluded that massive open online course (MOOC) provides the opportunity to access the content anywhere at any time of this universe.

Research Gap

After the review of existing literature, the researcher has come to know that many studies have been done on E-Education, E-learning platforms and MOOCs. There are very less research were on digital learning platform. The present study focuses on the government initiated digital platforms which are launched to provide open, equal and free learning opportunities.

Statement of the Problem

The growth rate of higher education in India is significantly less when compared to other countries, increases the demand for higher education in India. To cope up the present situation the government has launched various distance and digital education programs which offer flexibility to complete a course, help to gain knowledge and skills regarding various subjects. Success of these digital platforms depends on the awareness and effective usage by students. By using digital free courses students can get professional opportunities to upgrade their skills for future career settlement.

The present research has been done on the awareness, usage and effectiveness of digital courses initiated by GOI to answer various questions.

Are students havingawarenessabout free digital courses offered by the Government? If yes, are they using? If yes, are they using it effectively? If No, are thereany difficulties faced by students in attain the courses in digital mode? What are those challenges? Are they satisfied with the digital mode of learning and study materials? Would they like to suggest other students regarding free digital courses? The study has been undertaken by considering these research issues.

Objectives of the Study

1. To examine the awareness level of digital platforms facilitated by GOI among the post-graduate students from the select five Universities in Karnataka.
2. To know the use of digital courses.
3. To find the issues in attaining digital mode of learning through free platforms.
4. To know the satisfaction level of digital mode of learning.
5. To assess the effectiveness of digital courses and to know the student's opinions about suggesting other students to digital platforms initiated by GOI.

Significance of the study

Digital platforms are the right opportunity to provide open, equal and free learning opportunities. Digital courses are less costly and more flexible to attain in attaining benefits. To attain effectiveness of digital course usage and awareness among students is essential. Digital platforms are the way for providing education in an innovative manner of teaching and learning process.

Scope and Limitations of the study

The study is conducted among PG students pursuing in the year 2021-22 from the select five universities Tumkur University, University of Mysore, Mangalore University, Kuvempu University and Bangalore University. Survey is conducted on Digital Learning Platforms offered by GOI. Therefore, the study excludes other MOOCs and digital platforms and other university students.

Research Design

For executing this study the researcher has made a descriptive research study.

Source of Data

The primary data required for the study were collected through the circulation questionnaire through Google Forms sharing via WhatsApp.

Sample Design

1. The Population of the Study: The population of the study comprises all the post-graduate students who are pursuing their post-graduation in select five Universities - Tumkur University, University of Mysore, Mangalore University, Kuvempu University and Bangalore University during the study period 2021-22.
2. Sample Size:The sample size is 200. The study comprises 40 respondents each fromthe select Universities in Karnataka.
3. Sampling Technique:A convenient sampling technique has been used to select the sample unit.

Data Analysis an7d Discussion

Based on the filled questionnaires received tables were developed and analysed. For data analysis the percentage technique was adopted.

Table 1 Gender and Awareness-wise Classification of Respondents

Gender	Aware		Not Aware		Total
	No. of Respondents	%	No. of Respondents	%	
Female	68	52.31	41	58.57	109
Male	62	47.69	29	41.43	91
Total	130 (65%)	100	70 (35%)	100	200

Table-1, the researcher found 65 per cent of respondents are aware about digital platforms. More than half (52.31%) of the respondents' who are aware are female and the remaining are Male. Only those who are aware and joined the digital classes are filled the remaining questions in questionnaire. Therefore, the number of respondents for the further tables is 130.

Table 2 Source of Awarenessabout to Digital Courses

Source	No. of Respondents	%
Department (university)	79	60.77
Friends& Relatives	30	23.08
Social Network	21	16.15
Total	130	100

From the Table 2, we can note that majority (60.77%) respondents came to know about digital courses through the department where they are studying the PG course, followed by the friends & relatives (23.08%) and social network (16.15%).It shows that the department or institution has put in effort in creating awareness among students.

Table 3Number of Respondents Joined Digital Courses

Joined	No. of Respondents s	%
Yes	**67**	**51.54**
No	63	48.46
Total	130	100

Out of the 130 respondents who are aware about digital platform, 51.54 per cent(Table 3) respondents joined digital learning courses through various digital learning platforms. 48.46 per cent respondents are not aware, indicating that almost 50 per cent of respondents are not aware.

Table 4Factors influenced in Choosing Digital Platform

Factors	No. of Respondents	%
Very Informative	23	34.33
Compulsory	20	29.85
For value addition	16	23.88
Affordable cost	8	11.94
Total	67	100.00

The prime factor that influenced (Table 4) the respondents to join the courses is the information provided by the digital learning platform (43.33%), followed by Compulsion by college (29.85%), value addition (23.88%) and affordable (11.94%). The content of respective courses will be taught by teachers from reputed institutions so the students mainly influenced to digital of very informative.

Table 5Digital Platform from where Course Chosen

Digital Platform	No. of Respondents	%
SWAYAM	32	47.76
SWAYAM PRABHA	11	16.42
E-PG Patashala	10	14.93
E-Acharya	6	8.95
E-Yantra	5	7.46
E-Shodha Sindhu	3	4.48
Total	67	100.00

From the Table 5 we know that majority (47.76%) of the respondents preferred SWAYAM, followed by SWAYAMPRABHA, E-PG Patashala, E-Acharya, E-Yantra and Shodha Sindhu. From this we can say that Swayamplatform is the well-used and most popular digital platforms which are launched by the government.

Table 6 Devices used to Attain Digital Platform

Devices	No. of Respondents	%
Smart Phone	49	73.13
Laptop	14	20.89
Computer/Desktop	4	5.98
Total	67	100.00

Table6depicts that 3/4th (73.13%) of the respondents usedSmartphones for attending digital courses followed by laptops (20.90%) and computer (5.98%) or desktop. It shows that smartphone has become affordable one, which acts a substitute for computers

.

Table 7 Respondents Difficulty Level to Procedures of Enrolling Digital Course

Level of Difficulty	No. of Respondents	%
Moderate	37	55.22
Easy	16	23.88
Very easy	8	11.94
Difficult	4	5.97
Very difficult	2	2.99
Total	67	100.00

More than half of the respondents (55.22 per cent)are opined that is a moderate level of difficulty to enrolling digital courses followed by easy (23.88%) and very easy (11.98%). Only 5.97 per cent students felt difficult and 2.99 per cent said very difficult (Table 7)

Table 8 Issues Faced Respondents while Learning in Digital Mode and Types of Issues

Issues Faced	No. of Respondents	%
Yes	52	77.61
No	15	22.39
Total	67	100.00
Types of Issues (52 Respondents)		
Frequent network issue	28	53.85
One way communication	12	23.08
Technical issue	8	15.38
Lack of Proper information	4	7.69
Total	52	100.00

From the Table 8, we can see that that 77.61 per cent of the respondents faced issues while learning through digital mode and the remaining did not face any issue.Those who have faced issued were having different issues (Table 8). The type of issues are frequent network issues(53.85%), followed by one way communication (23.08%), technical issues (15.38%)and only 7.69 per cent respondents felt lack of proper information.

Table 9 Respondents Satisfactory Level about Digital Mode of Learning

Satisfactory Levels	No. of Respondents	%
Highly satisfied	11	16.42
Satisfied	37	55.22
Neutral	19	28.36
Dissatisfied	0	-
Highly dissatisfied	0	-
Total	67	100

Half (55.22%) Of The Respondents Are Satisfied With Digital Mode Of Learning, 16.42 Per Cent Are Highly Satisfied. In Other Words, 71.64 Per Cent Of Respondents Are Satisfied And 28.36 Per Cent Respondents Are Neutral. None Of The Respondents Felt That They Are Not Satisfied (Table 9).

Table 10 Satisfaction towards Study Material and Security level of Digital Platforms

Satisfaction level	Study Material		Security	
	No. of Respondents	%	No. of Respondents	%
Strongly agree	7	10.45	6	8.96
Agree	36	53.73	32	47.76
Neutral	18	26.86	21	31.34
Disagreed	3	4.48	5	7.46
Strongly Disagree	3	4.48	3	4.48
Total	67	100	67	100

Study material plays a pivotal role in students' satisfaction. 64.18 per cent of respondents are satisfied with the material provided by digital learning platform and around nine percent of respondents are not happy. 26.86 per cent respondents are neutral with E-materialsprovidedby digital courses of GOI (Table 10). With regard to the security 56.72 per cent of the respondents agree with that courses initiated by the

government of India are secured from the information theft by the others and any other cyber-crimes and 31.34 per cent respondents are neutral. Around 12 per cent respondents are disagreeing with the security level (Table 10).

Table 11 Effectiveness Level of Digital Learning Platforms

Level of Effectiveness	No. of Respondents	%
Highly effective	14	20.9
Effective	37	55.22
Neutral	13	19.4
Not effective	3	4.48
Highly not effective	0	-
Total	67	100

The course effectiveness is good with 76.12 per cent (Table 11) and 55.22 per cent with effective and with 20.9 per cent highly effective respectively. Around 20 per cent respondents are neutral in their opinion, and only 4.48 per cent do not agree with the effectiveness of the course.

Table 12Status of Course of Completion and Suggesting Digital Platforms to their Friends

Completion of course	No. of Respondents	%
Discontinued	34	50.75
Still Attending Classes	25	37.31
Certificate Received	8	11.94
Total	67	100.00
Rating for recommendation		
Yes	66	98.51
No	1	1.49
Total	67	100.0

With regard to the status of course completion by the time of collecting data from respondents about 12 per cent received certificates, and 37.31 per cent attending classes. Half of the respondents discontinued the course (Table 12).

Satisfied people always spread the positive word of mouth and suggest the courses to others. Almost all the respondents (99 per cent)respondents opined that they would like to suggest their friends to digital Courses initiated by the government of India (Table 12).

Findings

From the above analysis the following findings were extracted:

1. The study reveals that 65 per cent respondents were aware about of the digital platform course and the remaining respondents were not aware. Out the respondents who are aware, 51. 54 per cent are enrolled.
2. The main source of awareness (60.77 per cent) the department/University where they are studying the PG course.
3. 50 per cent of the respondents who are aware about digital platformjoined digital learning courses through various digital learning platforms.
4. The prime factor that influenced the respondents to join the courses is the information provided by the digital learning platform followed by Compulsion by college, value addition and affordable.
5. The very informative content influenced respondents (34.33 per cent) to choose digital platform courses and taught by reputed institutions such as IIMB, NPTEL, AICTE and CEC etc.
6. It is found that the maximum numbers of respondents (47.76 per cent) are aware of SWAYAM platformthan other digital learning platform indicating that the Swayam is most popular and effective digital platform launched by GOI.
7. Smartphones occupied first place in supporting with 73.13 per centfor attending the digital courses, since they are the affordable devices for poor and rural students.
8. More than half of the respondents are opined that is a moderate level of difficulty to enrolling digital courses.

10. Half of the respondents (55.22 per cent) are opined that is a moderate level of difficulty to enrolling digital courses.
11. The study showed that 1/3rd of the respondents are facing issues while learning in digital mode and frequent network issue is the major issue with 53.85 per cent.
12. It is found that 71.33 per cent respondents are satisfied with the digital mode of learning through platforms launched by government. But it is interesting to know that none of the respondentsis dissatisfied.
13. Study material plays a pivotal role in students' satisfaction. 64.18 per cent of respondents are satisfied with the material provided by digital learning platform.
14. With regard to the security, half of the (56.72 per cent) respondents agree with that courses initiated by the government of India are secured from the information theft by the others and any other cyber-crimes.
15. The course effectiveness is good with 76.12 per cent. With regard to the status of course completion by the time of collecting data from respondents about 12 per cent received certificates, and 37.31 per cent attending classes. Half of the respondents discontinued the course.
16. Satisfied people always spread the positive word of mouth and suggest the courses to others. Almost all the respondents (99 per cent) respondents opined that they would like to suggest their friends to digital Courses initiated by the government of India.

Suggestions

1. The following suggestions have been made based on the findings of the study:
2. The Government of India should mandate the implementation of digital platform courses among all the Universities in India. Further, a few online courses can be made compulsory.
3. The study found that 1/3rdof the respondents donot have idea about the digital courses initiated by the GoI. So, the government should insist the Universities to take an initiative and disseminate information about various digital learning platforms, coursesand the benefits among students in their Universities. During their induction programme fresher's can be given information about digital learning platform. Universities shall motivate students to register courses at Digital Learning platforms as value added courses, either for enhancing knowledge or acquiring new skills. Further, Universities shall guide students regarding the enrolment of any digital courseand the course selection may be depending of the area of interest.
4. Different universities can come together with their best courses and teachers to provide quality education in a single platform through digitalization.
5. The universities should make certificate is compulsory for post-graduate students from any one of the government launched free digital platforms. It helps effective utilisation.

Conclusion

The study found that the purpose of setting of various Digital learning Platform is not achieved due to lack of awareness about the digital platforms and courses offered. Further, there were a few issues faced by users of Digital learning platform courses. Therefore, creation of awareness,identifying the issues and difficulties faced will help in effective utilisation of Digital Learning platform. It will further help in enhancing students' knowledge and skill, there by value of Human resources and economic development.

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Present need of E-GOVERNANCE in India

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Abstract

Developing countries like India need to adopt new technologies like computers and internet.In this article, the governments of India have made the administration more efficient and provided more transparent services to the citizens and beneficiaries.

In this article we have mentioned a list of comprehensive schemes currently being used by India We have presented some suggestions in this article to improve such E-Governance practices.

Key words

1. Central and State government schemes
2. Influence of Globalization
3. Paperless government
4. Public sectors
5. Participation of people
6. Simply business techniques.

Introduction

E -GOVERNANCE is also a part of the administrative concept in modern times E-GOVERNANCE is a form of governance that ditches the old ways of governance and delivers to the beneficiaries through the most transparent and cutting edge schemes and programs involving new types of software. At present most of the countries around the world have adapted E GOVERNANCE and India too has the concept of governance. India today is one of the few countries in the world that is growing economically at fast pace.

What is E GOVERNANCE?

E-Governance is the commoditization of information exchange communication transaction and integrated services by the government to deliver its service to the common people through information and communication technology.The application of information technology and communication is commonly known as E-governance through which information is distributed transparently to the public E-Governance is fundamentally a move towards smart governance which is a very simply ethically, responsive, transparent governance.

Importance of E-Governance

E-Governance is unique concept that envisions connectivity and relationshipbetween government and citizens.

1. It is helpful in understanding the administrative machinery and functioning of the government.
2. Rejects traditional and old ways
3. E-Governance is imperative in implementing public policy
4. Provides quick and transparent administration
5. Gained the trust of citizens
6. Eliminate paper administration and lay the foundation for a paperless administration system
7. Prevents corruption and bias
8. Communicates information to general and beneficiaries
9. It causes a nation to shine internationally
10. It leads growth in a nations economy and growth in science and technology

Objectives Of E-Governance

1. Government is about simplifying governance for citizens and businesses
2. Reducing corruption in government level
3. Ensuring services

4. To make government administration transparent and accountable
5. Enabling digital communication
6. E-Governance provides advantages of convenience ,efficiency and transparency
7. It overcomes the lack of computer literacy
8. Simplifying administration
9. To ensure speedy administration of services and information
10. To reduce difficulties for business
11. Provide immediate information and enable digital communication by e-business .

Types Of E-Governance.

E-Governance there are four types of E-governance based on communication activities

1 Government to Government (G2G)

Documents and information are transmitted from the central government to the state government
and from state government to the local government and also transmitted department to the another department

2 Government to Citizens (G2C)

Everything from the government about the various schemes about the various programs about the way of implementation is also shared by the government to the beneficiaries

3 Government to Businesses (G2B)

Information about various government tenders and their implementation will be shared with businessmen

4 Government to Employees(G2E)

Many government facilities transfer data and information to employees

Growth Of E-Governace Of In India

1. The first step towards E-Governance in India was in 1970 when the government of India established a department called the department of electronics.
2. In 1977 **National information centers** were established at all districts centers across the country
3. E-Governance has been given major emphasis since the launch of **"NIC NET"** Satellite in 1987 .It fulfills the requirement of a national satellite based computer network and society
4. In 2006 the government of India implemented **The National E-Governance plan.**
5. Many areas are covered under the **National E-Governance scheme.**
6. Agricultural, land records, health, education, passport,police department ,courts, municipalities, commercial taxes, treasuries,etc.
7. In 2015 has adopted **SKILL INDIA** and **MAKE IN INDIA.**
8. Invest in the field of **E-COMMERCE** and **E-MARKET.**

Projects Implimented By E-Governance In India

1. Aadhaar is a unique identity card that contains personal details based on biometric data and was implemented by Dr.Manamohan sing UPA government.
2. Digital India was launched by the Narendra modi government in 2015 with the aim of delivering government services to citizen digitally
3. My gov.in.is a dedicated platform for national citizens it is a platform where people share their opinion and ideas
4. Pay.gov online payment to all public and private banks
5. Land records computerization
6. Service centers
7. Gram one plan
8. Nemmadi center
9. Sakala plan
10. PM India website
11. Skill India
12. Smart and Start up India
13. Make in India

Relevance Of E-Governance

In the modern world every country is competing with each other in terms of growth and Development and the concept of the E-Governance has been adapted by the countries of the world and in order to achieve rapid growth in all fields e-governance has increased its presence in today's times.The importance of e-governance is currently high in both public administration and private administration.E-governance is necessary for efficient impartial honest and transparent administration in public administration.E-governance is essential for disseminating the many benefits of economic growth brought about by digitalization to all segments of society government activities would be turbocharged through a combination of technology and citizen centricity to achieve a safer more efficient, sustainable society.

Suggestions for improvement of E-Governance

1. Provide network to all interior villages
2. Provide digital knowledge to every Indian citizens
3. Giving free WIFI facility

4. E-commerce and E-market elaborate
5. Invention the new apps

Conclusion

Governance is comprehensive nowadays e-governance covers its scope in fields like agriculture ,Industry ,Science and technology ,Defense, transport, Banking sector, Hotel management, tourism without e-governance

E-Governance is a new type of concept that is very helpful for the youth of a country to eradicate the paper less administrative system and save the country economically E-Governance has its significance as on advanced new form of governance. It encourages the take up of digital technology that are crucial to economic competitiveness, it allows government to redefine its roll and become more citizen's focused it enables us to join up information and hence govern more effectively and it can reduce the cost while not compromising the quality of public.E-governance is the best solution to the problem of slow delivery of services by increasing the efficacy of government offices. It also provides the time –bound delivery of service transparency in the work cost effective delivery of service for both government and citizens.

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Digital Skills: Need of the Hour in the Context of Global Era

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Abstract:

Technology is at the center of our lives, and as our dependence on the internet and digital communications increases, our workforce must keep up with the evolving skill demand. These days, the digital skills required in the workplace are a bit more advanced, and companies expect the vast majority of their employees to have them, not just a select few. The pandemic catalyzed an already-accelerating rate of digital transformation, where the old ways of doing things — from grocery shopping to work — changed irreversibly. The demand for digital skills was likewise impacted, as companies shifted from physical headquarters to embracing a digital HQ mentality. Now, digital adoption and the respective digital skills needed to embrace the transformation are critical to landing more secure, in-demand tech careers. In fact, those skills are essential to the survival of every field.

Digital skills are broadly defined as the skills needed to "use digital devices, communication applications, and networks to access and manage information," from basic online searching and emailing to specialist programming and development. At their core, these skills help people to communicate and to collaborate, to develop and to share digital content, and problem solve in a work-anywhere world.

Without a firm command of digital skills, there is no way to propel innovation and remain competitive. Employers realize this, so they're prioritizing candidates who can showcase their digital literacy. By developing better digital skills, employees have a chance to contribute to their communities, future-proof their careers, and explore a wide range of professional opportunities.

Some statistics showing the increasing demand for digitally literate professionals:

1. 85% of Americans believe that digital skills will be important to success in today's workplace.
2. According to a study published about digital skills for career progress, "the number of jobs requiring digital skills is predicted to increase 12 percent by 2024.

Key Words: Digital Skills, Digital Transformation, Cognitive Skills, Interpersonal Skills, Self –Leadership Skills, Professional Skills

What are digital skills?

Digital skills are broadly defined as the skills needed to "use digital devices, communication applications, and networks to access and manage information," from basic online searching and emailing to specialist programming and development. At their core, these skills help people to communicate and to collaborate, to develop and to share digital content, and problem solve in a work-anywhere world.

What are examples of digital skills?

Entry-level digital skills can include:

1. Computer literacy
2. Data entry
3. Social media
4. Web-based communications and research
5. Word processing
6. Email and chat
7. Secure information processing

Advanced digital skills can include:

1. Programming, web, and app development
2. Digital business analysis
3. Digital marketing and content creation
4. Digital design and data visualization
5. Digital product management
6. Data science
7. User experience design

Digital skills are defined as the ability to find, evaluate, use, share, and create content using digital devices, such as computers and smartphones.

These days, the digital skills required in the workplace are a bit more advanced, and companies expect the vast majority of their employees to have them, not just a select few. Technology is at the center of our lives, and as our dependence on the internet and digital communications increases, our workforce must keep up with the evolving skill demand.

Why to Learn Digital Skills?

Digital transformation is on the rise and affecting every industry imaginable.

Farmers are no longer merely sowing seeds and harvesting a crop; they're using sensors and information technology to automate, monitor, and regulate their systems to become more profitable, efficient, and sustainable. Food delivery apps now help restaurants provide their menu options to hungry patrons without them having to leave their homes. This adds a complex layer of responsibilities for restaurant workers who now must manage orders through digital devices, as well as any in-person interactions.

Even real estate, a traditionally face-to-face industry, relies on digital skills. Virtual walk-throughs are available to prospects looking to relocate, and signing documents remotely with services like DocuSign is a quick and convenient way to finalize an agreement.

Without a firm command of digital skills, there is no way to propel innovation and remain competitive. Employers realize this, so they're prioritizing candidates who can showcase their digital literacy. By developing better digital skills, employees have a chance to contribute to their communities, future-proof their careers, and explore a wide range of professional opportunities.

Here are some statistics showing the increasing demand for digitally literate professionals:

1. 24% of employers think finding employees with the right skill set will remain their biggest challenge over the next five years.
2. 50% of all employees will need re skilling in the next five years.
3. 85% of Americans believe that digital skills will be important to success in today's workplace.
4. According to a study published about digital skills for career progress, "the number of jobs requiring digital skills is predicted to increase 12 percent by 2024."
5. 94% of business leaders expect employees to acquire new skills on the job.

What Skills Are Necessary for Entry-Level Positions?

When you stand out in the modern workplace, you improve your chances of excelling in your career. Whichever career path you choose, keep in mind that there are always new skills to learn and new technologies to master.

For entry-level positions, the bare minimum digital skills required include the ability to carry out tasks, such as:

1. Communicating via email
2. Researching information online
3. Handling sensitive information in virtual ecosystems
4. Safely using cloud-based collaboration tools like Google Drive, DropBox, and Microsoft Teams
5. Creating and managing spreadsheets and online documents
6. Basic device management like connecting to the internet or installing software updates
7. Screen sharing during a video call
8. Using online calendars and efficiently managing your schedule (and possibly others on the team)

What Are the Critical Digital Skills?

Depending on career trajectory, one may need additional skills that pertain to one's specific role. Digital skills in the workplace can include original content creation, e-commerce, network and information security, UX/UI design, digital marketing, social media marketing, and data analytics. Advanced digital skills range from data visualization and basic programming skills to data engineering. While these may be more advanced, you can obtain them with hands-on training and consistent exposure.

McKinsey research has identified foundational skills that will "help citizens thrive in the future of work," below is a sample of their findings.

[1]Distinct elements of talent.

How to Develop or to Improve Digital Skills

Almost a third of the workforce lacks the foundational digital skills employers are looking for, meaning a large population of professionals need reskilling. According to weforum.org, those who are unemployed have placed a greater emphasis on learning digital skills, including information technology and data science.

Whether you're looking to sharpen your digital skills or you're hoping to enter the workforce with a strong resume, you can benefit from further training. Here are some methods for developing digital skills that don't include attending a traditional four-year program.

Self-Learning: We've talked all about how technology is part of our lives, so we must acknowledge how critical it is in helping us learn. There is a vast amount of information on any topic you can think of online, making basic skills easier to acquire. Connecting with professionals in your field is another

great way to supplement your self-learning and understand which skills need more refining.

Free Online Courses: For a more structured experience, you may want to explore free online courses that let you learn at your own pace at a slightly deeper level than self-learning. You may not get all of the advanced material you need to land your dream job, but it's a step towards gaining basic knowledge and essential digital skills.

Certificate Programs: Universities, like UNLV, offer dedicated certificate programs that deliver intense, in-depth instruction to ensure students are equipped with the digital skills and training to get them hired in today's workforce. Our cyber security bootcamp and software development boot camp offer accelerated courses led by industry experts and help you find the right job for you with professional career coaching. You can even increase your professional visibility with our exclusive hiring partner network.

The need for digital skills will only increase, so if you need to gain skills fast, there's no better time to get started than now! Learn more about the UNLV Digital Skills Boot camps by getting in touch with our admissions advisors. They'll walk you through your options as you discuss your career goals and educational needs. You don't have to commit right away. You can test-drive our program for 30 days to get a feel for our learning environment before making up your mind. The future is here. Let's conquer it together!

Which Digital Skills Do I Need?

According to Investopedia, "many of the highest-paying jobs are positions that require a significant amount of education, professional training and advanced skills." If you want to cover your bases as quickly as possible, here is how you can determine which digital skills you should focus on building.

1. Research the industry or profession you're curious about and read through job descriptions to understand which skills you already have and which you will need to build.
2. Understand how you can add value outside of automated systems and AI. As automation becomes the norm, our roles must adapt to the digital environment.
3. Join LinkedIn groups in your desired industry to keep tabs on trends and what skills professionals are talking about. LinkedIn groups are also a great place to build your network and ask real professionals your burning questions.

It's a digital-first world: Today's kids learn coding before cursive. We call this expertise "digital skills," but to the next generation, they're simply "skills."

But what exactly *are* digital skills? How do people view the rise of digital skills? What can companies do to bridge the gap between current skill level and what the future demands?

To answer questions like these, Sales force spoke to experts and conducted global research on digital skills.

This article gives an overview of digital skills, answering some common questions and sharing related research.

Digital Skills are the Need of Hour in the Context of Global Era:

The pandemic catalyzed an already-accelerating rate of digital transformation, where the old ways of doing things — from grocery shopping to work — changed irreversibly. The demand for digital skills was likewise impacted, as companies shifted from physical headquarters to embracing a digital HQ mentality.

While this trend had been gaining momentum for decades across all industries, today's acceleration is unprecedented. Now, digital adoption and the respective digital skills needed to embrace the transformation are critical to landing more secure, in-demand tech careers. In fact, those skills are essential to the survival of every field.

Digital skills have never been more critical to business and the workforce, as demonstrated by the universal shift to digital-first interactions like remote work, online commerce, and virtual collaboration. While this change has produced many benefits, like greater flexibility for workers and removing geography as a barrier to hiring new talent, it's also resulted in the widening of an already-large skills gap.

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Perception of Msmes towards Goods and Service Tax (GST) in India

(A Case Study of Vijayanagara District, a Semi-Urban area in Karnataka-After 5 Years of GST in India)

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Abstract
The Goods and Services Tax is a common tax used by the majority of countries globally. After independence of India, Goods and Services Tax was the biggest reform in the country's tax structure, came into effect from 1st, July, 2017. The main objective behind incorporating GST was elimination of double taxation, which cascades from the manufacturing level to the consumption level. Before introduction of Goods and Service Tax (GST), too much hope and misconception were prevailing in the mind of people and Government of India regarding GST like it will-reduce tax burden, be simpler than old tax system, bring uniformity in tax rate, prevent black money creation, increase revenue from tax, bring more transparency in business, help lower income group people etc. This paper is an attempt to analyse the perception of MSMEs' owners and managers towards GST relating to their hopes and misconceptions related to GST after 5 years of completion of introduction of GST. The study is based on the primary data collected through questionnaire, using random sampling method, designed on five point likert scale.

Keywords: Goods and Services Tax (GST), Indirect Tax, MSMEs, Chi-Square Test, Fisher's Exact Test.

Introduction

The goods and services tax (GST) is a tax on goods and services which are sold domestically for consumption. The tax is included in the final price and paid by consumers at point of sale and passed to the government by the seller. Goods and services tax is a destination based tax on consumption of goods and services where tax will be levied at all stages from the stage of manufacturing till the final consumption and set off is allowed in the form of input tax credit to the business parties involved in the process. (Ramkumar, 2018) The GST is a common tax used by the majority of countries globally.

Tax payers believe that the implementation of a national goods and services tax (GST) will simplify the tax system as there were multiple taxes, different tax authorities, different rates and different legislation for indirect taxes in India which leads to the complexity. This paper is aimed at analyse the Perception of businessmen towards GST in India nowadays, i.e. approx. after 5 years of completion of introduction of GST. To analyse the perception, different questions were asked from the respondents through questionnaire regarding the above mentioned benefits of GST. Many papers have already been written on this topic before and also after the introduction of GST, but this paper is different from others on the point that it is based on the actual perception of tax payers on different measures of their satisfaction and dis-satisfaction about GST. This paper will help in finding out the different areas where tax payers are not satisfied with the GST through which government comes to know those areas and may make it more convenient for the tax payers.

Objectives of the Study

1. To analyse the various benefits of GST which are expected to be occur after the implementation of GST till date.

2. To compare the perception of different sizes of Small Scale Businesses on each benefit of GST.

Research Methodology

The present study is based on the exploratory research and examines the perception of businessmen of Viajayanagara District of Karnataka towards GST in India. This study is based on the primary data that is collected through questionnaire that has been framed in both English and Hindi language for the purpose of ease in understanding the questions to the respondents. The questionnaire involves the nature of business, size of business i.e. Micro, Small and Medium, and opinion of the businessmen regarding the various benefits which are expected to be occurred after implementation of GST.

These responses were taken on a likert scale of 1 to 5. An attempt has been made to collect data from 100 businessmen using convenience sampling method, by distributing questionnaire to businessmen. The reason for targeting more respondents is to remove those respondents who has given incomplete information or whose information are baseless and considered as outliers for the study. Enumerators have been appointed to distribute the questionnaires to businessmen and help the respondents to fill up the data in case of difficulty in understanding any question. Out of these 100 targeted respondents, 66 respondents have given complete and full information. All the businessmen considered in the study are actual tax-payers. The period of data collection for the present study is ranged from December, 2022 to February, 2023.

Limitations Of The Study

1. The data used in the study is only primary in nature.
2. This study is limited only to the Viajayanagara District of Karnataka therefore it may not reflect the impact of GST on businessmen of other District.
3. The analysis is for a particular period of time and results will change for an analysis made at any other time.
4. The study uses various analysis techniques for analysing the results therefore the limitations of these tools might affect the outcome of the study.

Analysis, Results and Discussion of Primary Data

The respondents in this study are actual tax-payers. Response from the respondents have taken on the scale of 1 to 5, where 5 means Completely agree, 4 means Very much agree, 3 means Moderately Agree, 2 means Slightly agree and 1 means Not at all agree.

Perception of MSMEs regarding various Benefits of GST

a. Reduction in Tax Burden after the Implementation of GST

Under GST the taxation burden will be divided equitably between manufacturing and services, through a lower tax rate by increasing the tax base and minimizing exemptions. (Purohit & Shekhawat, 2020) In GST cascading effect (tax on taxes) is removed as the Input Tax Credit is available for all goods and services at each and every stage of the supply chain. So, now the final price of goods and services was lowered due to the seamless flow of Input Tax Credit between the manufacturer, retailer and service provider. This lead to a systematic reduction in costs as well as final tax liability on consumer also.

Table 1. Opinion of MSMEs on Reduction in Tax Burden after implementing GST

	Agreeability on a Scale of 1 to 5					
Size of Business	Not at all Agree	Slightly Agree	Moderately Agree	Very Much Agree	Completely Agree	Total
Micro	1	2	2	6	3	14
Small	3	10	15	8	2	38
Medium	1	3	3	4	3	14
Total	5	15	20	18	8	66
Total	5	15	20	18	8	66

5, 15, 20, 18 and 8 Respondents are Not At All Agreed, Slightly Agreed, Moderately Agreed, Very much Agreed and Completely Agreed for the Above Statement.

b. GST is Simpler than Old Indirect Tax System

(Barhate, 2017) has found during his study on awareness and perception of respondents towards GST among traders in rural areas that 40% of the respondents strongly agree or agree that Current taxation system (i.e. service tax system) and administration for goods and service at both central and state

levels remain complex whereas only 12% report comfort from such system.

Table 2. Opinion of MSMEs on Simplicity Level of GST

Size of Business	Agreeability on a Scale of 1 to 5					Total
	Not at all Agree	Slightly Agree	Moderately Agree	Very Much Agree	Completely Agree	
Micro	1	2	1	7	4	14
Small	3	5	14	12	3	38
Medium	1	3	3	3	4	14
Total	5	10	18	22	11	66

5, 10, 18, 22 and 11 Respondents are Not At All Agreed, Slightly Agreed, Moderately Agreed, Very much Agreed and Completely Agreed for the Above Statement.

c. Small businesses can easily file GST

(Siddiq & Prasad, 2017) All the compliance procedures under GST — Registration, Payments, Refunds and Returns will now be carried out through online portals only and thus SMEs need not worry about interacting with department officers for carrying out these compliances, which are considered as a headache in the current tax regime.

Table 3. Opinion of MSMEs on Ease in filing GST by Small Businesses

Size of Business	Agreeability on a Scale of 1 to 5					Total
	Not at all Agree	Slightly Agree	Moderately Agree	Very Much Agree	Completely Agree	
Micro	8	5	1	0	0	14
Small	12	10	8	6	2	38
Medium	0	7	4	1	2	14
Total	20	22	13	7	4	66

20, 22, 13, 7 and 4 Respondents are Not At All Agreed, Slightly Agreed, Moderately Agreed, Very much Agreed and Completely Agreed for the Above Statement.

d. GST Brings Uniformity in Indirect Tax Rate throughout the Country

GST will bring in "ONE NATION ONE TAX" by replacing various taxes levied by Central and State government as well as local authorities. (Sindhura, 2018) GST will be an indirect tax at all the stages of production to bring about uniformity in the system. On bringing GST into practice, there would be an amalgamation of Central and State taxes into a single tax payment (Gupta & Sharma, 2019). An existing study.(Barhate, 2017) has notified in their study that 68% of respondents report that GST will bring uniformity with only two tax rates, it results in a good administration of tax structure. GST has almost entirely put an end to the tax-on-tax impact on goods and services. By taking in all the indirect taxes under its wing, GST has managed to bring down the cost of goods and services. Thus uniformity of taxes under GST is one of its crucial benefits.

Table 4. Opinion of MSMEs on Uniformity in Indirect Tax Rate after GST Implementation

Size of Business	Agreeability on a Scale of 1 to 5					Total
	Not at all Agree	Slightly Agree	Moderately Agree	Very Much Agree	Completely Agree	
Micro	2	0	1	5	6	14
Small	3	5	8	10	12	38
Medium	0	0	4	7	3	14
Total	5	5	13	22	21	66

5, 5, 13, 22 and 21 Respondents are Not At All Agreed, Slightly Agreed, Moderately Agreed, Very much Agreed and Completely Agreed for the Above Statement.

e. GST can Check on Black Money Creation

(Jaipuria, 2016) GST is helping in curbing domestic Black money. In previous tax system, there were filers who used to understate incomes by not reporting each and every transaction. By doing this, they save excise, VAT, Octroi etc, and more importantly, are able to furnish under reporting of their incomes. But after implementation of GST, such practices have discouraged. Bringing alcohol, real estate and precious metals such as gold sectors within the ambit of GST will help curb black money generation in these sectors. The dual monitoring structure proposed within GST, involving the Centre and the states will also curb income tax evasions.

Table 5. Opinion of MSMEs regarding GST can Check of Black Money Creation

Size of Business	Agreeability on a Scale of 1 to 5					Total
	Not at all Agree	Slightly Agree	Moderately Agree	Very Much Agree	Completely Agree	
Micro	10	4	0	0	0	14
Small	12	10	8	4	4	38
Medium	5	4	2	1	2	14
Total	27	18	10	5	6	66

27, 18, 10, 5 and 6 Respondents are Not At All Agreed, Slightly Agreed, Moderately Agreed, Very much Agreed and Completely Agreed for the Above Statement.

Conclusion

From the above observation and hypotheses testing analysis, it is clear that different sizes of MSMEs in Vijayanagara district of Karanataka have different level of perception regarding the various favourable aspects of GST mentioned in the study like GST will Reduce the Tax Burden, GST will be Simpler than old tax system, After GST filing of return will be more convenient for small businesses, GST will bring Uniformity in Indirect tax rates, GST will prevent black money creation, GST will increase revenue from tax for government, GST will bring more transparency in business operation, GST will bring many necessary items under 0% tax rate etc. since upon all these benefits mentioned in the questionnaire, maximum MSMEs are Moderately Agree. A mixed response can be observed easily from the tables and the multiple bar diagram and most of the MSMEs are having a moderate level of agreeability on the favourable aspects of GST. These results of the study should be well noted by the government and policy makers that there are also many MSMEs who are completely disagree with the positive phenomenon of GST.

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Digitalisation of Agriculture in India: A Case for Doubling Farmer's Income

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Abstract

COVID-19 pandemic has highlighted the need for more resilient, efficient, productive, remunerative and sustainable agriculture. Accordingly, the Government of India prioritised optimum utilisation of advanced technologies, to ensure uninterrupted food security and empower farmers by doubling their income. This paper explores the digitalisation of Indian agriculture to create value for the farming community and increase the opportunities to double farmers' income. It highlights the application of different digital technologies to increase farm yield, improve farm-level decision-making, maximise resource use efficiency, and ultimately enhance the incomes of smallholder farmers. It is an analytical paper based on a survey of literature that utilises secondary sources such as books, research articles, and policy documents, reports published by various government and non-government organisations, online databases, and discussion papers. The paper suggests that policymakers focus on doubling the farmers' income through different stages of food production and supply chain.
Keywords: COVID-19, agriculture, digitalisation, digital technologies,doubling farmers' income, public policy.

Introduction

Agriculture has been the oldest and the most labour -intensive profession. It has become more vulnerable to disruptions like the COVID-19 pandemic. An estimate projects that there will be a 50 per cent increase in food requirements due to the addition of new 2 billion people on earth by 2050. It is challenging to provide food security to all from the same quantity of agricultural land (12 per cent of global land) (FAO, 2011). The adverse impact of such vulnerabilities will be severe in India, where the majority (86 per cent) of farmers are small and marginal. The Indian food supply chain faces unprecedented shocks at every stage, beginning from pre-production and production to post-production (Department of Agriculture & Farmers Welfare, 2021). Besides, the natural uncertainties due to climate change and risks associated with unsustainable agriculture practices have also increased distress in agriculture. The unfavourable changes in crops or sudden pest attacks due to climate change force farmers to increase the use of pesticides. These chemical fertilisers ultimately lead to environmental degradation and a high cost of production (Khandelwal, 2021) (Table 1). Agriculture has therefore become the policy issue for policymakers to ponder and frame policies to make it more sustainable. There are three critical challenges before the policymakers. One is to make farming a remunerative profession; the second is to ensure food security to citizens, and the third is to increase the resilience of food production and supply chain to withstand the disruptive situation.

Table 1: Impact of COVID-19 on the agriculture sector

Agriculture Value Chain Phase	Key disruptions	Key impacts on actors
inputes	-Increased prices -Shifts in market demand for products led to demand for different inputs -Closure of shops including agri-businesses	-Inability to purchase inputs, in- ability to pay for logistics -Loss of income and liquidity for input dealers
On-form production	Inaccessible equipment rentals	-Inability to hire adequate labour or machinery for harvest, planting, processing leads to crop wastage and seed consumption
Post harvest :storage	-Closing of warehousing	-Loss of income by warehouse actors
Access to markets	-Decreased local and over-seas markets -Shifts in product demand	-Strained customer/buyer relationships

Source: Adapted from (Payne & Willis, 2021, p. 13)

Indian agriculture has minimal use of digital technologies in food production systems despite having a strong IT industry base and advancement in satellite technology. It is argued that comprehensive digital interventions are required for resilience and innovation to increase land productivity and ensure the overall sustainability of agriculture, i.e. economic, environmental and social (Khandelwal, 2021).

2. Materials and methods

2.1 sources

For the purpose of this paper, the researchers used secondary sources including books, journal articles, policy documents, reports from both government and non-government organisations, online databases, and discussion papers. The reports of the World Bank, Food and Agriculture Organisation (FAO), United States Agency for International Development (USAID), Organisation for Economic Cooperation and Development (OECD), and policy documents of various committees appointed by the Government of India (GoI) are among the works cited in the literature. Other works include the Annual Report of the Ministry of Agriculture and Farmers' Welfare, the Confederation of Indian Industry (CII), and the Government of Maharashtra. In order to increase farmers' income in India and digitise the agrifood system, this research reviewed the relevant literature.

2.2 Methodologies

To perform the study, the researchers used a qualitative research approach. The extent of modern digital technology applications in agriculture is examined in this article. Reviewing GOI policy initiatives and identifying policy shortcomings in the process of digitalizing agriculture make up the main contribution of the current article. This essay offers guidelines for using digital technologies into the agri-food system in order to maximise the impact of digitization and raise farmers' incomes.

3. Discussion

The government is being forced to embrace digital platforms, tools, and emerging technologies including artificial intelligence (AI), machine learning, remote sensing, and the Internet of Things (IoT) because to the COVID-19's current disruption. Since there is no better alternative, all parties involved in the food production and supply chain, including farmers, input suppliers, retailers, exporters, and consumers, are implementing digital solutions in their daily operations. To sustain continuity in the unprecedented disruptive environment, they are thus left with no choice but to undergo a digital transformation (Payne & Willis, 2021). The next section describes several digital strategies that can be applied to Indian farmers' incomes to double it.

4. Digital Approaches in Agriculture

There are broadly four categories of digital approaches used in the agriculture

sector: 4.1 Data-Driven Agriculture, 4.2 Precision Agriculture, 4.3 ICT- Enabled Extension, and 4.4 Digital Financial Services (USAID, 2018, p. 10).

4.1 Data-Driven Agriculture

Digitalisation in agriculture begins with data collection from agriculture in- puts and environmental factors. The availability of accurate data is crucial for realising goals of digital agriculture in the country. The data comprises of satellite images, soil health information, land record, season-wise cropping pattern, market-related data, and the farmers' data. Central and state government can collect such data from different sources for data-driven policy intervention in agriculture. There are many advantages of data. Data collected from satellites is applied in land use, land cover classification, and crop characterisation. Similarly, data gathered from instruments implanted on drones/Unmanned Arial Vehicles (UAV) is a cost-effective alternative for high-resolution satellite imagery. It is used for Geographic Information System (GIS), topographic mapping, terrain modelling, and dedicated surveying purpose (Confederation of Indian Industry, 2021, p. 9). Data related to weather is collected through satellite, and after analysis, weather information is disseminated on digital plat forms and smartphones. Farmers can access real-time weather-related data on smartphones, which help them plan agricultural activities (Government of Maharashtra, 2021). According to International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), farmers who followed Sowing App advisories experienced an average yield increase of 30 per cent compared to farmers who delayed their planting due to a lack of information (Manfre & Laytham, 2018).

4.2 Precision Agriculture (PA)

The objective of Precision Agriculture (PA) is to enhance agricultural pro- duction through the optimisation of input resources for achieving economic and environmental dimensions of sustainability. Small farmers' income can be improved by enhancing crop yield, water, and efficient use of resources. More accurate farm-level decision making and harnessing the potential of a data platform linked with drones, satellites, and IoT sensors fixed at the ground would contribute significantly to the doubling of farmers' income. The Internet of Things (IoT) has various applications in the agricultural sector, as this technology uses a network of sensors and other devices to trans- form actions or processes into data. IoT enabled devices can track the stock and flow of water and measure water flow for irrigation (Yadav et al., 2020, p. 11). The studies show that the application of IoT in the USA increased the per hectare crop yield by 2 per cent and reduced water requirement for irrigation by 8 per cent along with the conservation of energy (Government of Maharashtra, 2021) (Sarni et al., 2016).

4.3 Digital Agriculture Extension

many farmers do not have any authentic source for updated information regarding extreme climate occurrence such as droughts, storms, floods, and other natural calamities (Rajkhowa, 2021). Digital agriculture extension employs digital tools and services that are used used to deliver information effectively. Short Message Service (SMS), Interactive Voice Response (IVR), interactive radio, low-cost video are generally used by the extension workers to reach a large number of farmers in a short period for providing extension services like timely reminders and alerts, weather forecasting best practices for enabling farmers to enhance productivity. The traditional way of extension, which includes person-to-person information sharing, is costly and time-consuming, and it may not create value for the farming community. However, with the help of digital technology, the scope of extension can be enhanced (USAID, 2018). It is necessary to provide the correct information to make an informed decision and realise their full potential. At every stage of the cropping cycle, the information provider must be well connected with the farmers. Thus, digital technologies enable the creation of farmers' networks and keep connected with the service/ advisory providers (Yadav et al, 2020, p. 3)

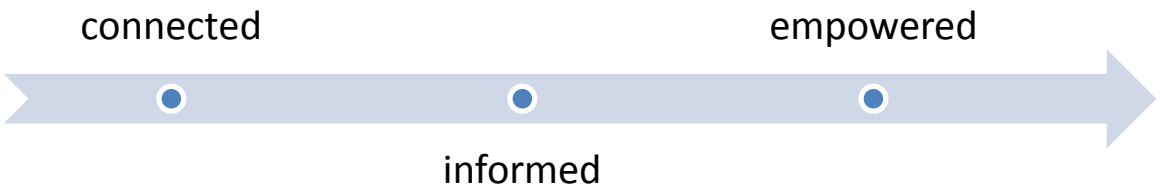

Figure 1: Empowerment of Farmers

Digital extension services are helpful for the following reason,

1. they can be adapted to the local context,
2. Demand-driven and farmer-led,
3. Market-oriented,
4. Pluralistic (involve multiple actors),
5. Accountable,
6. Sustainable, g. Scalable (USAID, 2018).

In India, using technologies in agriculture has resulted in a 34.63 per cent increase in yield (Mittal & Mehar, 2012). A study shows that there are advantages of issuing advisory to the farmers through digital platforms. For instance, it reduces the input use by 15 to 20 per cent; increases crop productivity by 18 per cent and commercialisation by 5 to 7 per cent. In nutshell, it results in an increase in farmers' income by 25 to 29 per cent (Rajkhowa, 2021)

4.4 Digital Financial Services (DFS)

Digital Financial Services (DFS) became a reality after implementing the JAM trinity in India, i.e. Jan Dhan bank accounts, Aadhar card and availability of mobile phones in both urban and rural areas (Economic Survey, 2016). Direct Benefit Transfer (DBT) scheme leverages digital technologies to link the Aadhaar card (the 12 digits unique identity number based on biometrics) with the farmers' bank account and land record. This enables the provision of input credit directly to the small farmers, digital headcount of livestock, monitoring and analysing their health through RFID (Radio Frequency Identification) and micro-chips based ear tags. Similarly, digital barcodes are used to trace fruits and vegetables for their source of origin. In the electronic National Agricultural Market (e-NAM), digital technologies such as digital platforms are used to link farmers with a national level market without any hurdle (Ministry of Agriculture and Farmers' Welfare, 2018). Pradhan Mantri Kisan Saman Nidhi (PM-KISAN) has eased the process of providing input credit to farmers in their Aadhar linked bank accounts directly without any bureaucratic interference and documentation process (Varshney et al, 2020). Many state governments also used the DFS approach to provide input subsidies, post-disaster help and loan waiver to the farmers, which reduced fraud claims and corruption. Through Pradhan Mantri Fasal Bima Yojana (PMFBY), the Government of India has been incorporating the DFS for maximising the impact of insurance service in the agriculture sector. The use of drones has accelerated the agri-insurance claim process. The crop damage is assessed by using drones, increasing accuracy and speed in settling insurance claims (Government of Maharashtra, 2021, p. 6). Drones are used to assess the crop damage, which in turn would increase accuracy in document verification. In Bihar, 98 per cent of the goat rearing is done by women. These women are the poorest of the poor, and they cannot afford half an acre of land. Instead, they graze their goats. They are using mobile phones to up-load photos of their goats on eBay-like sites to increase their potential market, reach buyers who are 800 kilometres away. They fetched 20 to 47 per cent more per head for their goats due to use of mobile phones (Boettiger & Sanghvi, 2019)

5. Food Traceability and Resource Optimization

Food traceability is crucial for consumer satisfaction for "safe and nutritious food". Digital platforms enable it by providing real-time information about where, when, and who cultivate the crop, i.e. journey of food produce from pre-harvest to marketplace. Digital technologies such as IoT and Blockchain transform food supply chains by enabling traceability and consumer satisfaction. Transparency of the food production system can be maintained through digital technologies. This would help gain consumers' trust and reduce wast- age in the food supply chain by decreasing the supply-demand mismatch. It is estimated that integration of the food production and supply chains from farmers to end consumers will require production of food which is 25

per cent less than the current food production (Khandelwal, 2021).

It is noteworthy that the case study of the banana value chain in India highlighted the positive impact created by integrated value chains. A decade ago, India did not have a substantial share in the global market despite being the world's largest producer of bananas. Lack of integrated value chain, in- frastructure, and standard practices increased wastage and low shelf life. After creating infrastructure, end-to-end traceability and packaging innovations enhanced the shelf life by over 50 per cent. The application of technology reduced wastages to below 2 per cent, which is better than any world bench-

mark. Finally, this resulted in the doubling of farmers' income (Khandelwal,2021). The next section discusses the efforts of Government of India in digitalising agriculture to double farmers' income.

6. Digitalisation of Indian Agriculture

The report on doubling farmers' income by 2022 advocates for the adoption of digital technologies in agricultural practices it will help in boosting farm- ers' income. To achieve the vision of the Self-Reliant India Movement and Sustainable Development Goals (SDGs), the transformation of traditional agriculture into digital agriculture is imperative. Government of India's Digital Agriculture Mission (2021-2025) and consultation paper on Digital Agriculture Ecosystem are the essential steps towards the digitalisation of Indian agriculture. Farmers are the main stakeholders in the food production and supply chain as producers. Thus, it will be challenging to achieve and sustain food security without ensuring farmers' well-being and satisfaction. Policymakers have to focus on the empowerment of the farming community by making farming a more remunerative, easy, secure, respectable, attractive, and less risky profession, ultimately generating food security as a by-product.

Digitalisation has the potential to make agriculture policy more effective in minimising the undesired impacts and maximising the benefits of farming. The digital agricultural policy replaces the technologies used in traditional farm policy. It offers newer alternatives for an agricultural policy: real-time data-based or more evidence-based policy interventions for effectively addressing the challenges in the agriculture sector. Thus digitalisation is shifting the agri-culture policy from direct intervention to information-based governance, which will increase the policy outcomes and ultimately secure the trust of farming communities and will maximise their satisfaction (Ehlers et al, 2021).

Digitalization of Indian Food Production and Supply Chain: Policy and Practices

According to the Indian Agricultural Census 2015-16, 86 per cent farmers in India are small and marginal farmers (Department of Agriculture & Farmers Welfare, 2021).

Table 2: Types of Farmers

Sr no	Type of farmers	percentage	landholding
1	Marginal Scale Farmers	68.45	Up to 1 Hectare
2	Small scale farmers	17.62	1<=2 Hectare
3	Semi-medium scale farmers	9.55	2<=4 Hectare
4	Medium scale farmers	3.80	4<=10 Hectare
5	Large scale farmers	0.57	10<=20 Hectare

India has a diverse geographic area that includes 15 Agro-Climatic Regions and 127 Agro-Climatic Zones. The generalised agri-advisories are insufficient to advise farmers in agricultural practices. The requirement of each crop and farmer is different from others. Therefore, the personalised or targeted, timely, Agro- Climatic Zone specific extension service is required to enhance production and mitigate various types of risks in the agricultural sector (Madaswamy, 2020). The Doubling Farmers' Income by 2022 Report (2018), discusses the science and technology-based interventions and advocate for the shifting focus from the "Science of discovery to science of delivery" (Ministry of

Agriculture and Farmers' Welfare, 2018). The Government of India has laid the first stepping stone towards the digitalisation of the agriculture sector in 1987 by launching "District Information System on Agricultural System (Agriculture, Animal husbandry and Fisheries)Agricultural information System (AG-RIS) project with "Village as its basic Unit." This initiative was launched with the help of the National Informatics Centre (NIC) in more than 520 districts of the country. Thus leveraging a mix of available advanced technologies to reduce costs and increase ICT use in the agriculture sector for its development is essential (Rao et al, 2016)

Farmers' Database

The centralised and land record linked database of farmers across the country will benefit from better planning, monitoring, policy-making, strategy formulation and smooth implementation of different central and state-level agriculture-related schemes for the empowerment of farmers (Ministry of Agriculture & Farmers Welfare, 2021). The Committee for Doubling Farmers Income Report by 2022 (2018) has suggested policy measures for increasing the farmers' income. The volumes (3, 4, 11 and 12) of this report highlighted the application of digital technologies in different stages of food production and supply chain in India. The volumes that are relevant to the integration of digital technologies in agriculture are as follows:

1. Volume 3: "Post-production Agri-logistics: maximising gains for farmer"
2. Volume 4: "Post-production interventions: Agricultural Marketing"
3. Volume 11: "Empowering the Farmers through Extension & Knowledge
4. Dissemination"
   iv. Volume 12: "Science for Doubling Farmers' Income- Digital Technology
5. in Agriculture" (Ministry of Agriculture and Farmers' Welfare, 2018).

The Ministry of Agriculture and Farmers' Welfare signed 5 Memo-randum of Understanding (MOU) with private companies (CISCO, Nin-jacart, JioPlatforms Limited, ITC Limited and NCDEX e-markets Limited (NeML)) in 2021 for promoting digital agriculture in India. The Ministry also launched Digital Agriculture Mission (DAM 2021-25) for initiating projects which involve digital technologies such as Artificial Intelligence (AI), Block Chain, Remote Sensing (RS) and GIS, Drones/UAV and Robot-ics. The purpose of these new initiatives is to provide inputs to farmers and stakeholders of food production and supply chain for making informed decisions on the selection of crops for cultivation, improved variety of seeds,available best practices for maximising output, procurement, transportation and storage (Ministry of Agriculture & Farmers Welfare, 2021).

In 2017, The Department of Agriculture & Farmers Welfare had merged different space technology initiatives related to agriculture (such as Crop Assessment & Monitoring, Agricultural Resources Management, Disaster Monitoring and Mitigation and Satellite Communication and Navi-gation Applications) under one programme, named as "National Programme on use of Space Technology for Agriculture (NPSTA)" (Ministry of Agri- culture & Farmers Welfare, 2017).

9. Conclusion

Through its projects and policies, India has digitally influenced the agriculture industry. However, due to the fact that the majority of initiatives are restricted to governance needs and farmer education, India lags behind other countries in the world in the adoption of digital technologies at the farm level (Confederation of Indian Industry, 2021). The report on doubling farmers' take-home pay by 2021 placed a focus on the adoption of cutting-edge digital technologies in agriculture. But when the public participates as much as possible, any government-led initiative will be a success.

To digitalize Indian agriculture, an ecosystem must be established. For digital technologies to reach their full potential, it is crucial to encourage digital literacy among young people in rural areas. The assimilation of new technology into society is mostly a function of institutions. It is essential to promote digital literacy among youth in rural areas for unleashing the full potential of digital technologies. Institutions play a significant role in as-simulating new technologies into society. It is required to upgrade the existing agriculture extension system. Agricultural institutions like State Agricultural Universities or Krishi Vigyan Kendra's (KVKs) are essential to disseminate information related to Digital Agriculture technologies.

Data acts as a fuel for digital agriculture practices as it is the life source

of digital technologies (such as AI, Satellite Image processing). Accurate and updated data on weather conditions, soil type, market, crop variety, crop yield is required to develop and implement innovations and interventions. There is a need to create a trusted and centralised digital data repository to enable efficient data access to different stakeholders, which will help reduce time and cost for digital intervention. Further there is a need for data sharing, data validation and interoperability and data privacy mechanisms. It is essential to create data-driven solid policies and regulatory agencies for facilitating standardisation and interoperability. Finally, digital infrastructure such as internet connectivity, mobile phone network, and the cost of internet and digital devices are crucial for the farming community's extensive adoption and continuous use of digital technologies. People in rural areas still do not have access to basic facilities like all-season roads, regular electricity and clean drinking water. Thus, creating digital in- frastructure in a rural area may take time, which may delay the digitalisation of the agriculture sector. Policymakers must prioritise the rapid creation of digital infrastructure in rural areas and promote the development of AgriTech startups in each Gram Panchayat (GP) to get benefits of new technologies to farmers and increase their income. The existing COVID-19 pandemic offers an opportunity to accelerate digital technologies' adoption in agriculture.

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A Study on Implications of Cashless Transactions on Indian Economy

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Abstract:
The cashless economy which requires great transformation as to change the existing cash based economy most of us are made it as our lifestyle a sudden change in cash related transaction creates so many troubles, A termination of paper money would facilitate governments to implement a full control over the banking system. This paper focuses on the methods and Implications of cashless transactions on Indian Economy. The research methodology used in this paper is descriptive statistics and the data collected is from secondary sources. The research reveals that the usage and value of digital transactions in India has increased. The result also states that the there is lack of awareness about digital payments especially for rural people.

Keywords- Cashless, e-banking, card swipe, digital money, plastic money, transparency and digital transaction, economy.

Introduction:

Cashless economy is an economy where transaction can be done without necessarily carrying physical cash as a means of exchange of transaction but rather with the use of credit or debit card payment for goods and services. Cashless Economy is when the flow of cash within a financial system is non-existent and all transactions have to be through electronic channels such as direct debit, credit and debit cards, electronic clearing, and payment systems such as Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT) and Real Time Gross Settlement (RTGS) in India.

Strongly debated shift of digital payments among authorities, central banks and experts of finance to increase and promote the electronic media based payments internet as a default have to be there to make it all possible new technology changes also coping up with these changes such as mobiles and its related apps are already taking boom nonetheless, a variety of factors have to be taken into account as a global shift to cashless could establish more complex than believed.

To justify a removal of paper money, governments argue in favor of their move is that a fully digitalized structure would eliminate tax evasion and money laundering, reduce transaction costs and enable financial authorities to encourage economic growth. A cashless system would allow governments to track and record every transaction, leaving no loopholes for fraudsters to abuse.

Review of Literature

1. **Donal O.Mahony, Michael Peirce, Hitesh Tewari(2001)** The idea of paying for goods and services electronically is not a new one. All around us we see evidence of transactions taking place where at least part of the process is carried on electronically. Since the late 1970s and early 1980s, a variety of schemes have been proposed to allow payment to be effected across a computer network. The arrival of the Internet has removed this obstacle to progress. This network of networks has grown dramatically from its inception
2. **David B. Humphrey, Lawrence B. Pulley, and Jukka M. Vesala (November 1996):** E-payments can be

widely defined as payments that are initiated, processed and received electronically. The scope is on e-payment services that support e-commerce transactions (business to consumer, B2C) or electronic payments between consumers (person to person, P2P) and that constitute new concepts, beyond the basic traditional payment instruments provided by the banking industry. In order to monitor the development of e-payment services within the euro area and across Europe.

3. **Odlyzko (2003):**In his article he stated that E payment is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or services offered through the Internet. Generally, we think of electronic payments as referring to online transactions on the internet, there are actually many forms of electronic payments. As technology is developing, the range of devices and processes to transact electronically continues to increase. A payment is the payer's transfer of a monetary claim on a party acceptable to the payee, a monetary claim that is accepted by the payee will be referred to as the means of payment, payment instruments are tools and procedures to initiate the transfer of the means of payment.
4. Electronic cash (or digital cash) was invented early on in the development of e-commerce. However, the reality of e-cash business has proved less than exciting. Within the first few years, the issuers of e-cash either went bankrupt (Digi cash), dropped the product (Cybercash), or moved into another business (First Virtual). Observing the failure of the above e-cash mechanisms and the extensive adoption of the credit card on the Interne. The authors**(Chou, Yuntsai , Lee, Chiwei, Chung, Jianru (2004)** probe the question of what payment schemes are adequate for the e-business environment and considered the impact in technological considerations, economic and social factors in the popularity of online payments.
5. **Zheng Huang, KeFei Chen (2002):**In their study they States that ever since the Internet got popular in the mid-nineties, the explosion of on-line commerce has been prophesized. Electronic payment will grow rapidly because of the potential operational efficiencies; Electronic payment is discussed as a means to replace traditional cash in the physical world, and as a means of payment in the virtual world. This is because of that electronic cash might be easier and cheaper to use than conventional cash and electronic payment cannot be counterfeited assuming that the scheme is thoroughly thought out. Additionally, electronic payment could be used over telecommunications and data networks for e-commerce without losing the privacy of the customer.

Research Gap:

The previous research is based on the usage of electronic payments used in different countries and different method of cashless transactions used in Indian economy. This research is mainly focuses on implications and benefits of cashless transactions in Indian economy.

Need of the study:

India's burgeoning cashless society is a peak of various factors such as the introduction of the United Payment Interface(UPI) .Digital payments are universal in the everyday life of Indians and have dramatically changed consumer behavior in the country. Although cash remains the king, as clear in high currency in circulation, the digital payment ecosystem grew exponentially in the previous years. Hence, the study has been undertaken to know the various methods adopted in Cashless Transaction and its impact on the Indian Economy.

Objectives:

1. To study the difference methods adopted under cashless economy in India.
2. To study the growth and impact of cashless economy in India.
3. To provide suitable suggestions and conclusions for the improvement of performance.

Scope of the study:

To study the various methods adopted under cashless economy, the researcher has used different payment methods adopted by the consumers in India. And to study the growth, the researcher has collected the data from

2017-18 to 2022-23. To study the number and value of digital transaction, the transaction considered are BHIM UPI, IMPS, NACH, AePS, NETC, debit cards, credit cards, NEFT,RTGS,PI and others.

Research Methodology:

The study is based on conceptual in nature. The data has been collected from different books, journals, newspapers, RBI website and other relevant websites have been consulted in order to make the study an effective one.

Analysis and Inference:

Objective 1: To study the different methods adopted under cashless economy in India.

Methods of Cashless Payments:

The Digital India programme is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. "Faceless, Paperless, Cashless" is one of professed role of Digital India.As part of promoting cashless transactions and converting India into less-cash society, various modes of digital payments are available.

Credit Card or Debit Card

Credit card or debit card is another cashless payment method. The usage of credit card and debit card was limited in India. However, usage of credit card and debit card is increasing now. The limitation of this payment method is an availability of swipe card facility at merchant end. The percentage of people who have debit card is 27.07% with latest value from 2021(www.theglobaleconomy.com)

NEFT or RTGS

The third simplest method for the cashless transaction is online transfer using NEFT or RTGS. In order to do online money transfer, you need internet banking facility. Online transfer using NEFT or RTGS is comparatively faster than cheque or DD. Online transfer can be done from anywhere using internet facility.

Point of Sale

A point of sale (PoS) is the place where sales are made. On a macro level, a PoS may be a mall, a market or a city. On a micro level, retailers consider a PoS to be the area where a customer completes a transaction, such as a checkout counter. It is also known as a point of purchase.

E-Wallets

E-wallet is another cashless payment option. E-wallet can be used to purchase products starting from grocery to airline tickets. In order to use E-wallets customer and merchant, both require a smart phone with active internet connection. The most popular example of E-wallet is PayPal. Apart from PayPal, you can also use Payoneer, Transferwise, Skrill, and PayZa. After registering for E-wallet you need to link your credit card or debit card with your E-wallet id. You can use e-wallet for fund transfer or online shopping. It is a simplest cashless method.

Mobile Wallets

The next cashless payment method is a mobile wallet. You do not need a debit card, credit card or internet banking password for making payment using a mobile wallet. Just transfer money in your wallet via IMPS and use it on the move. You can download mobile wallet app from play store. Few examples of mobile wallets are Paytm, PayUmoney, Oxigen, Lime, MobiKwik etc.

UPI Apps

UPI is a mobile payment system which allows you to do various financial transactions on your smart phone. UPI allows you to send or receive money using virtual payment address without entering bank information. Merchants can enroll with banks to accept payments using UPI. Like in the case of a PoS machine, the merchant would require a current account with a bank to accept UPI payments. The examples of few UPI Apps are SBI Pay, ICICI Pocket, Axis Pay UPI App, Union Bank UPI App, PNB UPI, PhonePe, TranZapp etc.

Aadhar Enabled Payment System

Aadhar Enabled Payment System (AEPS) is one of the best cashless payment methods. AEPS is like Micro ATM it uses smart phone and a finger-print scanner for the transaction. In order to use this facility, it is mandatory to link your Aadhar card to your bank account. You can use AEPS in order to perform transaction like Aadhar to Aadhar fund transfer, Cash withdrawal, Cash deposit etc.

Unstructured Supplementary Service Data

You can use USSD cashless option if you don't have a smart phone or internet connection. Unstructured Supplementary Service Data is mobile banking service. From any mobile phone, you can dial *99# and use this service. You can do all these things

which are available to a person with smart phone and internet connection. Almost all banks including SBI, ICICI, BOB, Axis Bank and PNB supports USSD payment option.

Micro ATMs

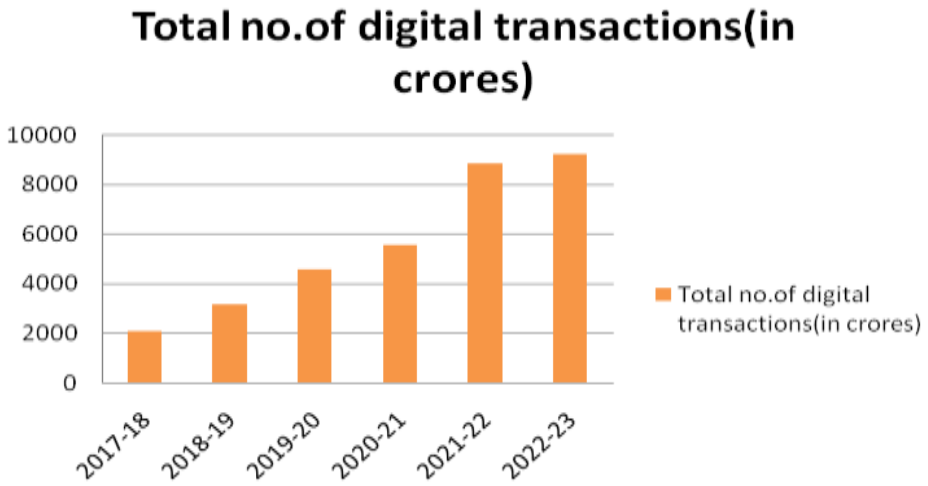
Micro ATM meant to be a device that is used by a million Business Correspondents (BC) to deliver basic banking services. The platform will enable Business Correspondents (who could be a local kirana shop owner and will act as 'micro ATM') to conduct instant transactions. This device will be based on a mobile phone connection and would be made available at every BC. The basic transaction types, to be supported by micro ATM, are Deposit, Withdrawal, Fund transfer and Balance enquiry.

Objective 2: To study the growth and impact of cashless economy in India.

Table 1.1 showing the total number of digital payment transactions undertaken during the last five financial years.

Financial Year	Total number of digital transactions (in crores)	% of Growth (Base year 2017)	YOY Growth (in crores)
2017-18	2071	-	-
2018-19	3134	51.32	1063
2019-20	4572	120.76	1438
2020-21	5554	168.17	982
2021-22	8840	326.84	3286
2022-23	9192 (As on 31st December 2022)	343.84	352

Source: RBI, NPCI and banks

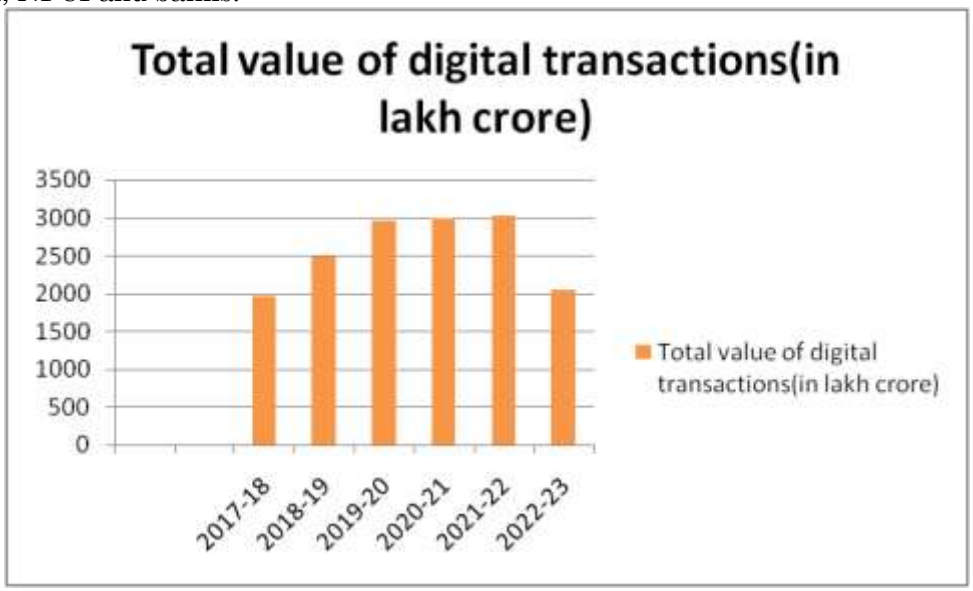


Interpretation: As compare to 2017-2018 during the year 2018-19, there is a growth in the percentage of number of transactions made by the people that is 51.32%, like that in the year 2019-2020, there is a growth of number of transactions made by the people that is 120.76%, also in the year 2020-21 is 168.17% , in the year 2021-22, there is 326.84% and in the year 2022-23 is 343.84%.From the above analysis ,it is clears that the usage of cashless transaction increased drastically year by year. Hence we can say the irrespective of rural and urban there is a exponential growth among the users of cashless transactions.

Table 1.2 showing that total value of digital payments during the last five financial year.

Financial Year	Total Value of digital transactions(inlakhcrore)	% of Growth (Base year 2017)	YOY Growth (in crores)
2017-18	1962	-	-
2018-19	2482	26.50	520
2019-20	2953	50.50	471
2020-21	3000	52.90	47
2021-22	3021	54.48	21
2022-23	2050 (As on 31st December 2022)	49.49	971

Source: RBI, NPCI and banks.



Interpretation: As compare to 2017-2018 during the year 2018-19, there is a growth in the percentage of value of cashless transactions is 26.50%, like that in the year 2019-2020, there is a growth of value is 50.50%, also in the year 2020-21 is 52.90 % , in the year 2021-22, there is 54.48% and during the year 2022-23 is 49.49%.From the above analysis ,it is clears that the value of cashless transaction increased significantly year by year. Hence we can say the irrespective of rural and urban there is a exponential growth in the value of cashless transactions.

The Benefits Of Using Cashless Transactions:

Growth of Digital Payments in India and availability of various easy and convenient digital payment solutions have facilitated ease of living for citizens, financial inclusion, and growth of business and economy. During the Pandemic, availability of contactless digital payment solutions such as BHIM-UPI facilitated social distancing and continuity of businesses, including small merchants(Source: RBI, NPCI and banks).The benefits of using cashless transactions are as follows.

1. **Instant and convenient mode of payment:** Unlike cash, money can be instantaneously transferred to the beneficiary account using digital modes like BHIM-UPI and IMPS. Moreover, using the BHIM-UPI mode, one can effect a digital transaction via mobile phone using mobile number or easy-to-remember virtual payment address (email-like address). BHIM-UPI has enabled access to multiple Bank accounts in a single mobile app, facilitating ease of payments.
2. **Enhanced financial inclusion:** Digital payments offer anytime, anywhere access to accounts, thus making it easy for citizens to receive payments in their accounts and to also make payments using their phone. People who may have been deterred by the time, and travelling cost involved in physically accessing a bank outlet for transactions can now conveniently access the bank account digitally and get various benefits of being part of the formal banking system and becoming financially included. Recently launched UPI 123PAYenables feature phone users to make digital transactions through UPI in assisted voice mode, facilitating digital transactions and financial inclusion in rural areas.
3. **Increased transparency in government system:** Earlier cash payments were subject to payments that do not reach the recipient in full and fake recipients, particularly in the context of social security benefits by government transfers. Now, benefits are directly transferred to target beneficiary (direct benefit transfer) account through digital modes of payments.
4. **Improved speed and timely delivery:** In contrast to a cash payment that travels at the speed of its carrier, digital payments can be virtually instantaneous, regardless of whether the sender and receiver are in the same town, district or country.

5. **National Electronic Toll Collection (NETC) system:** NETC system enables the customer to make electronic payments at NETC-enabled toll plazas on the highway without stopping at the toll, using Radio Frequency Identification technology.
6. **Bharat Bill Payment System:** Bharat Bill Payment System (BBPS) provides an interoperable and easily accessible bill payment service to consumers via multiple channels like Internet banking, mobile banking, mobile apps, BHIM-UPI etc. Citizens can make easy bill payments anytime, anywhere through BBPS.
7. **Enhanced Credit Access:** Unlike cash payments, digital payments automatically establish a user's financial footprint, thereby increasing access to formal financial services, including credit. Banks and other lending institutions can utilize digital transaction histories to take cash flow-based lending decisions for both retail lending and lending to businesses, including small businesses who may face difficulty in getting credit in the absence of verifiable cash flows.
8. **Safe and secure:** Recipients of cash payments not only often have to travel considerable distances to receive their payments but are also particularly vulnerable to theft. Digital payments across India are secure as multiple levels of authentication are required for making transactions.

Impact of Cashless Economy In India:

1. Digital transactions will bring the transparency and accountability to the monetary system.
2. Digitizing monetary transactions helps banks recognize customers and track money flow. This helps to reduce financial fraud and crimes such as tax evasion and counterfeit money in the economy.
3. Cashless economy reduces the chance of black money entering the system and completely decrease nefarious activities.
4. Cash-based economy usually facilitates easy abatement of criminal activities such as money laundering, terrorism, extortion etc.
5. All the Fake currency notes can be curbed. In a cashless society, paying tax cannot be avoided, and this violation can be greatly reduced.
6. This increased tax value causes increased revenue for the state, which can be further used for welfare programmes.
7. It helps reduces the risk of carrying and transporting huge amounts of cash.
8. The data transfers happening through cashless transactions can help the government plan for future expenses such as housing, energy management etc., from the pattern of data transmission.
9. Cashless Economy also reduces the cost of banking services. It also improves monetary policy in managing inflation and increases economic growth in our country.

Findings:

1. Different methods of cashless transactions are used by people i.e. Debit/Credit card, Mobile Wallet,E-wallet,Point of Sale,UPI apps, AIEP,NEFT/RTGS,Micro ATMetc.
2. Total Number of cashless transactions users in Indian economy.
3. Total Value of cashless transactions in Indian economy.
4. Found the benefits: Increased transparency in government system and Enhanced financial inclusion.
5. Found the digital transactions will bring the transparency and accountability to the monetary system.
6. Found that all the Fake currency notes can be curbed. In a cashless society, paying tax cannot be avoided, and this violation can be greatly reduced.
7. **Conclusion:**

The cashless economy which is the major step taken by the government is a large stock for Indian economy. A cashless economy is a very good system which can be implemented but with proper planning and preparation. The cashless transaction will obviously lead to electronic transactions. But to make it used by everyone some necessary steps should be taken like making aware the people aware of its advantages. Even the government should take care about the cyber crimes so that the people feel safe to make cashless transactions and get motivated to carry on the same. A cashless society, for

now, seems like a out-of-the-way dream but a less cash society can be appreciated.

Suggestions:

1. People should be educated adequately. The use of cards in the ATM should be described to the people so that they can easily use the card.Proper communications should be developed in the remote areas so that this facility should be taken to the rural and remote India.
2. People should be made aware so that they can utilize their money effectively through cashless means. Buyers and sellers both should be made aware about the benefits of the cashless transactions.
3. The government schemes should communicate with people about the security and safety of using cashless transactions.

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Impact of Digitalization on Indian Consumer Buying Behavior With Respect to Apparel Stores

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Abstract

The introduction of digital technologies into the retail sector and, consequently, the possibility of meeting consumers' changing tastes and preferences face a number of obstacles due to the rapid changes in business, the turmoil in the economy, and the effects of the COVID19 crisis.The dynamic and continuous improvement of information and communication technologies is driving the rapid development of new digital tools which attracts user's attentions and make them feel special. In addition, today's consumers spend more and more time in online and the increasing influence of digital marketing to build long term relationship with customers is leading to some changes in retail stores. In today's digital world, consumer needs, desires, teste and preferences are changing rapidly. Hence, we need to analyse the buying behavior of consumers. Digitalization has had a direct impact on consumer behaviour because of how quickly it has changed the economic landscape and society as a whole in recent years. Technology and globalisation are the main causes of these developments because they define a number of corporate operations while also modelling the contemporary consumer reality.

The main purpose of this study is to know the impact of digitalization on buying behavior of consumer as well as to examine the impact of digitalization on consumer buying behaviour towards apparel stores. And also find out how digitalization will lead to change in the buying pattern of consumers. This study isusing conceptual method based on secondary data. The results of this study may helpful for the researcher and practitioner for conducting future studies in similar area.

Key words: Digitalization, consumer buying behavior, apparel stores, digital marketing, online purchase

Introduction

One of the largest and fastest-growing markets for digital consumers has been India. with nearly half a billion Internet subscribers;however, adoption of the same still stands uneven in differentbusiness segments (Anusha Thakur,2021). Modern technologies of the 21st century is making significant changes in the way people live and as a result pose a challenge for business management the free exchange and access to information, including social media, the internet, e-and virtual stores, and artificial intelligence etc. have led to the development of many technologies that are changing the way we think and behave as a consumer. After the COVID-19 epidemic, mask use and maintaining social distance become the new norms that people must rigidly abide by to protect themselves.In such circumstances, the apparel sector must develop new business imperatives to keep up with their operations and bring them back to normal.Customers have moved to digital platform and safe clothes purchasing as a result of the post-COVID-19 commercial imperatives.digital network that allows for efficient business communication and a secure work environment.

Customers' actions are referred to as their behaviour when they search for, purchase, use, evaluate, and discard a service or a product that they had once assumed would suit their needs.Customer behaviour is

an essential component of marketing because it reveals how consumers decide how to allocate their available resources, such as money, time, and effort, on goods connected to consumption(Ferreira et al. 2017).The ultimate determinant of the product that consumers intend to acquire and what they want, why they need it, when they need it, and how frequently they would buy and use it is their behaviour.A consumer's inner consciousness is where the decision-making or purchasing behaviour of the consumers takes place. The impact of both internal and external stimuli is taken into account while making the final decision regarding a purchase. In this situation, a product's or service's marketer is crucial. Through the use of external marketing strategies like pricing, product, positioning, and promotion, the marketer actually influences the consumer to make a purchase (Tate et al. 2017). Digital marketing is the technique of promoting goods or services via online search engines like Google, Yahoo, Bing, and others. To do this, we connect potential customers via social media platforms including Facebook, Instagram, Twitter, LinkedIn, email, and mobile phone application capabilities.

Literature review

The digitalization of business and the resulting transformation of businesses is a topic that has received a lot of attention in the business world over the past few years. Its effects can be seen in customer behavior, such as loyalty and satisfaction. As a result, a brief discussion of the terms "digitalization," "consumer buying behavior" is addressed in this section of the paper.

1. **(Dr.Nadezhda Dimova,2021)** Digitalisation has had a major impact on consumer behaviour, with technology and globalisation defining business processes and modelling the modern consumer reality. This article aims to present the impact of digitalisation on consumer behaviour in retail. This study concludes that Retailers must comprehend technological developments and assess their effects on their businesses and consumers in order to keep up with the digital transformation that is changing retail and consumer behaviour. The interaction between customers, businesses, and society is advantageous since virtual stores are the way of the future.
2. **Vesna Sesar, AnicaHunjet et al(2021)**. The research analysed the literature on digitization and how it affects consumer loyalty and happiness,due to the worldwide epidemic.This study examined the issue some businesses confront with turning digital and its impact on customer satisfaction and loyalty by analysing two databases (WOS and Scopus). According to this study of the research, good business reputation, app security, and word of mouth all contribute to consumer loyalty and trust. Today, businesses must discover innovative, digital ways to retain customers, raise customer satisfaction levels, and win their loyalty.
3. **Muhammad Hasan Tariq**, **Raziur Rahman Chowdhury, (2020)** This article examines the use of social media as a marketing strategy, looking at how it connects brands with their target market and influences consumer decision-making. It also looks at the impact of social media on brands' profitability, sales margin and Brand recognition. This study concludes that it is crucial to take into account how customers will be involved in the redesign of shop spaces, the usage of cutting-edge technologies like artificial intelligence, and the impact of social media on the clothes retail sector. Social media may be effectively used to channel a new wave of global demand.
4. **Anusha Thakur (2021)** The current situation of internet buying in India is examined in this study, with a particular emphasis on customer preferences and online purchasing activity patterns. It focuses on several issues encountered by retailers and consumers, as well as the potential for development in online purchasing techniques or websites, and was performed using a questionnaire with close to 100 customers of various ages. The study also focuses on the many difficulties that merchants and customers encounter, as well as the potential for developing websites or procedures for online buying.
5. **J.M. Subashin et al** (2020). Digitalization has become a new normal in apparelretail, and manufacturing sectors due to the post-COVID-19 pandemic. This paper discusses the

challenges, norms, and strategies of these sectors. This paper concludes that the postCOVID-19 business imperatives have created a safer environment for the apparel business, with customers moving to a digital platform and the supply chain to a digital network.

Research Gap

Form the above review of literature, we found that, all the research papers have been conducted on impact of technology, social media and online purchasing on consumer buying behavior throughout the India. So, in this paper throwing the light on the deep study about buying behaviour of the consumersand also, we are going to study about how digitalization impact on buying behavior of consumers towards apparel storeswhile purchasing apparel products.

Need for the study

From the above literature review, we found that there is a need to study the impact of digitalization on consumer buying behavior towards apparel stores. At the same time, it is crucial to understand how consumers behave while making purchases in the apparel stores. Their perceptions towards the digital technologies used by the retail stores, and what type of digital technology will lead to change the buying behavior of consumer. And how the digitalization will help the customer as well as apparel retail stores? All these questions need to be answered.

Objectives of the study:

1. To study the consumer Buying behavior.
2. To analyse impact of digitalization on consumer buying behavior.
3. To examine the impact of digitalization on Indian consumer buying behavior towards apparel stores.

Scope of the study:

1. Facebook
2. Instagram
3. LinkedIn
4. snapchat
5. twitter
6. Reddit
7. Messenger
8. You tube
9. E-Mail
10. WhatsApp
11. Mobile Phone app
12. Pin interest. etc

This study is focusing on how the digitalization will impact the buying behavior of the Indian consumers while purchasing the apparel products. This study will be done based on secondary data.

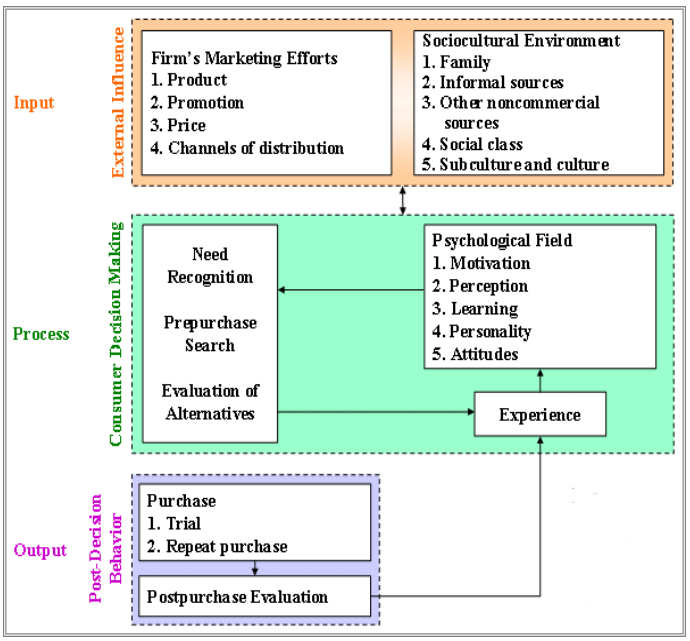
Research Methodology:

This study is conducted using conceptual method. This entire research had thus followed on secondary data gathered and analysis method. This study gathered previous scholarly papers on the concern topic. The previous journals, articles, text book, had been collected from both offline and online sources.

Results and Discussion:

The daily lives of billions of people now include using the internet, social media, smartphone apps, and other digital communication technology. In the consumer-focused economy of today, customer purchasing habits are changing quite quickly. In order to attract potential customers, new technologies are being developed. In order to adapt to the shifting dynamics of the market and society at large, smart phones have become essential. Everyone may now easily access the internet to the reasonable pricing offered by the numerous cellular operators. Today, every company is applying the digital marketing tool to attract the potential customers. It is the goal of every marketer to establish a direct channel of communication with their customers, and this is only achievable when using an internet strategy that allows users to access information immediately.With the advent of digital marketing, a variety of communication platforms have emerged, and businesses use these platforms to advertise their goods and services to consumers.

Social media network to use by the marketer to influence the buying behavior of the customers are:



It is obvious that people are becoming more and more accustomed to social and digital media. This serves a variety of functions, including assisting customers in their duties as they research items, buy and use them, and share their experiences with others.Therefore, consumer market in the future will primarily take place online, notably on social media and smartphones. Therefore, it is crucial for consumer research to look into and comprehend how consumers behave in digital scenarios.

With the help of technology, the traditional process of making purchasing decisions has undergone a complete transformation and been digitalized. The illustration demonstrates how the internet has digitised how consumers make decisions. They can contrast pricing and quality. Customers can conduct constant product research by perusing a variety of websites and online retail stores. The use of the internet has evolved quickly since it began, and it is now regarded as a decision-making facility.Because of the availability of information during the past ten years, consumers have become more informed. Consumers can now make the best purchase through the evaluation of information because facts and details are easily accessible. In today's corporate scene, there are several important aspects, including the availability of an extensive amount of information and the presence of customers on online platforms.

Source: A Model of Consumer Decision Making [Schiffman & Kanuk, 2004] Figure :2

As a result of informational and technological advancement, various features have been adopted by consumers. The illustration shows some of the characteristics in action. Before making a purchase, customers may negotiate and do some investigating.

In a broader sense, the undeniable benefits of digital marketing drive its ongoing development, as well as a number of additional significant retail trends that have a significant impact on consumer product and service selection. Retailers need to completely rethink their operations from the perspective of the customer and capitalize on the successes of digital marketing as a whole. Even though they have physical stores, businesses must also focus on offering their products online because the real competition includes consumers shopping online. Companies face the serious challenge of competing with online retailers. They, thusly, as of now appreciate predictable, crosschannel multichannel shopping, which incorporates on the web and disconnected offers and core interestson a positive customer experience.

Retailers must evaluate the most significant trends and incorporate them into their growth in order to make a real transition, specifically:

1. Customers' commitment and loyalty to the business and brand are both boosted by mobile applications. They give a chance to rehash a buyalso, change a request.
2. The use of mobile applications speeds up retail.
3. The use of mobile applications extends beyond retail transactions. Modern technologies and mobile apps make it possible to shop more quickly at any time. The versatile applicationsthemselves are involved by many organizations as reliability programs.
4. Users of mobile applications are able to follow all company promotions and advertisements in real time while also assisting them in making educated purchasing decisions.
5. Online payment is made possible by mobile applications. Customers who shop online using their smartphones can also take advantage of mobile payments for a hassle-free experience.

Virtual reality (VR) and Augmented reality (AR) technologies are increasing in digital marketing, influencing consumer choice through virtual showrooms, showcases, and dressing rooms.

The digital revolution is having a major impact on consumer behaviour and retail, and retailers must respond quickly to ensure they survive in a competitive climate. Future events will determine how beneficial this connection is for both consumers and businesses.

Emerging technologies in Apparel retail stores like:

In-Store Customer Analytics

Analysing in-store data involves compiling data on how customers behave inside a physical store. Analytics includes keeping track of factors like the frequency of visits during specific hours of the day, the number of new and returning consumers, and the impact of various advertisements on visitor numbers.

No-cashier check-out

Using as many touch-free procedures as feasible considerably helps Retailes when human contact is kept to a minimum. Amazon has started offering cashierless checkout technologies to other Retailers as a result.This particular system scans each item that a buyer picks up using an app and sensors. After finishing their purchasing, the consumer may leave the business certain that their credit card will be immediately charged. A quicker and more pleasant shopping experience is ensured since there is no need to stand in a long queue or have a cashier handle any of the items owned by customers.

Livestreaming

There are several benefits from in-person shopping. However, it is not always possible to purchase goods from brick-and-mortar storefronts due to recent social distancing regulations and stay-at-home orders. Live streaming excelled in this area in 2020.Digital buyers enjoy connecting with brands just as much as they value buying high-quality products. Livestreaming enables them to participate without being there in person by using another host to experience the product. Live streams are used by businesses to show customers how a product works, respond to consumer inquiries, and introduce new goods immediately.

Technology without Touch

Although the use of touch-free technology increased dramatically in 2020 due to the need for maximum safety and cleanliness, this trend seems to be here to stay.For instance, multi-brand shop Shawfield created the Magic Wand app, which enables users to interact with any area of the store without touching anything.

QR codes

Retailers may use QR codes for a variety of things, such as giving customers directions or product information or linking directly to the company website. Since customers no longer need to input any information, there is very little room for error. The digital barcode will always send customers to the designated landing page, eliminating any possibility of them putting in the wrong URL or arriving on a rival website. Just make sure any links a QR code sends people to are optimised for mobile so users will find the functionality useful.

Virtual Fitting Rooms

Retailers may construct custom-sized charts using virtual fitting software, allowing customers to select the sizes and style profiles that best suit their needs. Since customers can "try on" and buy clothing without leaving the comfort of their own residences, this technology is especially helpful for the apparel industry.Big retailers like Macy's and Adidas are benefiting from it

with good results. Zeekit, a virtual fitting room software provider, asserts that its services have successfully decreased merchants' return rates by 36%.

Comprehensive Customer Data

Customer data integration (CDI) maintains an up-to-date record of client data across all platforms and channels used by a firm. Since employees can use the data to better understand a customer's specific concerns, an integrated customer view has been shown to increase sales and customer service.

Integrated omni-channel Interaction

Omnichannel customer engagement is essential for businesses to create personalized experiences with customers across multiple channels.

Findings and suggestions:

In today's digital world, every aspect of public life has begun to be simulated by digitalization, particularly consumer behaviour. As consumers' needs, goals, and lifestyles change, so do their preferences for various goods and services. Throughout this study, I found that digitalization will impacts more on consumer buying behaviour. Nowadays digital technologies are the part of every human being. Customers want a better shopping experience, the finest items at the best prices, friendly interactions, and an extensive range of goods and services. The knowledge provided by consumer buying behaviour regarding the process is invaluable and is thus helpful for company decision-making.Customers' requirements and wants must be met, thus it is important to have a knowledge regarding how the digital technologies are helping them, what type of technologies are implementin order to satisfy those needs and desires.

Technologies are emerging in upcoming days in apparel retail stores like: In-Store Customer Analytics,No-cashiercheck-out, Livestreaming, Technology without Touch, QR codes, Virtual Fitting Rooms, Comprehensive Customer Data,Integrated omni-channel Interaction. These are playing vital roles in consumer buying behavior with respect to apparel stores.The process of adapting digitalization and new technologies by the apparel retail stores it will be useful.

These strategies can retailer will include in the apparel stores:

Give priorities to digital even while in-store

1. Virtualization employing digital tools may improve the consumer experience in-store and when they are unable to be in-store, additionally to a website and an app.
2. Livestreaming shopping activities, assistance for consumers at home, and real-time order taking app.
3. Keep refining the contact-free, frictionless payment option.
4. Use an online product description page with virtual reality to create an engaging shopping experience.

Update the ultimate objectives of the store.

1. Make use of the shop as a demonstrate.
2. Modify the back-of-store to front-of-store ratio to accommodate growing online fulfilment demands.
3. Utilize retail space to provide customers with support services; build up a contact centre on the sales floor so that staff members can answer calls and conduct real-time virtual shopping for customers.

Offer various products in a variety of ways.

1. Offer a well-chosen subscription service for a monthly charge.
2. Offered personal shopping services as a convenient or premium experience.
3. Permit shop employees to conduct virtual transactions via digital channels (such as mobile and e-commerce orders)
4. Use 3D digital software to create a virtual, true-to-life representation to test the product concept prior to manufacturing. Sell a service together with the product.

Conclusions:

One of the most effective and budget-friendly marketing techniques is digital marketing. A business may grow to new heights if digital marketing is used effectively. A business needs to understand its customer's purchasing patterns for successful implementation.The buying patterns of consumers are influenced by the availability of e-commerce platforms, digital channels, social media, etc. The study indicates that e-commerce platforms and social media have a significant influence on customer buying decisions. During specials, promotions, and holiday seasons, customers typically do more of their shopping using

internet portals. Through this study, it was discovered that consumers check out the product information that is accessible online and perceive it to be reliable before making a purchase.

In conclusion, the incredibly dynamic digital revolution is having a big impact on consumer behaviour as well as retail. The quickness with which traders adapt to change is another factor in determining successful and sufficient sales and profitability. For both customers and businesses, the point where online and physical purchasing meet is particularly crucial. Retailers themselves must comprehend technological advancements and assess how they will affect their operations and customers. And also knowing about Technologies are emerging in upcoming days in apparel retail stores like: In-Store Customer Analytics,No-cashiercheck-out, Livestreaming, Technology without Touch, QR codes, Virtual Fitting Rooms, Comprehensive Customer Data,Integrated omni-channel Interaction. Virtual stores definitely have the future, which means that retailers have the serious operations of responding right away to make sure they will survive in a highly-competitive climate with constantly evolving behaviour among consumers.

The evolution of digitalization itself will change consumer behaviour. Future events will determine how beneficial this connection is to both consumers and businesses.

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An Overview of Digital Marketing and Its Future Prospects

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Abstract

Digital marketing is the marketing of products or service using digital technologies, mainly on the internet, but also including mobile phones, display advertising, and the any other digital medium. Digital marketing's development since the 1990s and 2000s has changed the increasingly incorporated into marketing plans and everyday life, and as people use digital devices instead of visiting physical shops, digital India marketing campaigns are becoming more prevalent and efficient. This paper mainly focuses on conceptual understanding of digital marketing, how digital marketing help today's business, the digital marketing environment, has remarkably increased. However, despite these advances, relevant evidence on the measures to improve the management of Data Sciences in digital marketing remains scarce. To bridge this gap in the literature, the present study aims to reviewTo this end, a comprehensive literature review of major scientific contributions made so far in this research area is undertaken. The results present a holistic overview of the main applications of Data Sciences to digital marketing and generate insights related to the creation of innovative Data Mining and knowledge discovery techniques. Important theoretical implications are discussed, and a list of topics is offered for further research in this field. The review concludes with formulating recommendations on the development of digital marketing strategies for businesses, marketers, and non-technical researchers and with an outline of directions of further research on innovative Data Mining and knowledge discovery applications. The primary challenge for any business, no matter how large or small, is quite simple, how to get its product or service into the hands of the customer. How the company achieves this is informed by market research, gut instinct, polls, surveys, and research about existing habits and activities. The Internet enables to learn from market reality by looking at what they actually do online. By accessing this market reality, the product is better targeted and the chances of a successful go-to-market strategy are greater.

Key words: Digital India, Future, Prospects, Global Digital, Marketing

1.1 Introduction:

Digital marketing encompasses all marketing efforts that use the as search engines, social media, email and their websites to connect with current and the digital marketing prospective customer. This can also be referred as online marketing' is a internet marketing or 'web marketing' Digital marketing is defined by use of numerous digital tactics and channels to connect with customers where they spend much of their time; online. from website to business's online branding assets –digital advertising, email marketing, online brochures, and beyond –there's spectrum of tactics falling the umbrella of. digital marketing

Digital marketing, also called online marketing, is the promotion of brands to connect with potential customers using the internet and other formers of digital communication. This includes not only email, social media, and web –based advertising, but also text and multimedia messages as a marketing channel it very useful to all customers buyers and sellers.

1.2. Search Engine Marketing, or SEM,

Search Engine Marketing, or SEM is designed to increase a website's visibility in search engine results pages (SERPs). Search engines provide sponsored results and organic (non-sponsored) results based on a web searcher's query. Search engines often employ visual cues to differentiate sponsored results from

organic results. Search engine marketing includes all of an advertiser'sactions to make a website's listing more prominent for topical keyword

Web Banner Adverting

Web banners or banner ads typically are graphical ads displayed within a web page. Many banner ads are delivered by a central ad server. Banner ads can use rich media to incorporate video, audio, animations, buttons, forms, or other interactive elements using Java applets, HTML5, Adobe Flash, and others.

1.3 Importance of digital marketing:

Digital marketing is extremely important in today's day and age. It helps focus on targeted audiences with a global reach, unlike traditional marketing, bringing in high revenue with little investment. It is conversion-led and can easily be monitored. Damage control is also easy with digital marketing.

This research derives its importance from the importance of the topic dealt with in dealing with the phenomena of digital marketing, which are characteristics of the information economy. One of the most important contributions of technology and the information revolution to today's economy. Many thinkers and businessmen posed this question, and many studies and discussions about it are still ongoing, especially at the level of regional and international bodies and organizations. This is due to its general importance, as it is one of the most important pathways for economic growth. Digital marketing plays an important role in developing countries economic development, increasing their international trade and promoting multiple local industries. Qualifying institutions to enter the world of globalization and ensuring their survival and ability to compete, as well as opening the doors for individuals to integrate into the new economy and test the online shopping process.

Three keys to digital marketing success

What does it take to do digital marketing right? Here are three keys to digital marketing success:

1. Manage complex customer relationships across a variety of channels – both digital and traditional.
2. Respond to and initiate dynamic customer interactions.
3. Extract value from big data to make better decisions faster

1.4 Review of Literature:

1. MadhuBala, D. Verma (2018). A Critical Review of Digital Marketing. In this study, we acknowledged that businesses can really benefit from Digital Marketing such as search engine optimization search engine marketing (SEM), content marketing, influencer marketing, content automation, e-commerce marketing, campaign marketing, and social media marketing, social media optimization, e-mail direct marketing, display advertising, e–books, optical disks and games and are becoming more and more common in our advancing technology. It is demonstrated that we all are connected through WhatsApp and Facebook and the increasing use of social media is creating new opportunities for digital marketers to attract the customers through digital platform. Awareness of consumer's motives is important because it provides a deeper understanding of what influences users to create content about a brand or store.

2.Uma Anurag (2021).digital marketing in*India;* and 2000's. 'Online Marketing,' 'Internet Marketing,' and 'Web Marketing' are all terms used to describe Digital Marketing. The use of electronic media to promote items and services into the market is known as digital marketing. The goal of digital marketing is to attract customers and allow them to interact with the Digital Marketing has emerged since 1990's companies they're interested in via digital media. Through a variety of digital marketing strategies, the main goal is to promote businesses, shape preferences, and increase sales.

3.Tembi M. Tichaawa(2021).Tourism Digital Marketing Tools and Views on Future Trends. Owing to the unprecedented advancements in digital technologies adopted for use in marketing tourism, their use in tourism is expected only to gain momentum. The purpose of this paper is to systematically review literature published in tourism-related journals on digital marketing tools in tourism from 2016-2020, and to discuss future trends. The analysis reveals that the increased adoption of digital marketing tools has disrupted the status quo of the tourism industry. Findings also highlight a growing and broad digital marketing tools terrain that is thematically

diverse. Tourism marketers have to ensure that they understand the trends in the digital marketing domain and be able to adapt to the changes in order to remain competitive. Based on literature synthesis, the study provides insights into practical managerial implications and provides the groundwork for future studies.

1.5 Objective of the study:

The main objectives of the digital marketing.

1. To study the various elements of Digital Marketing
2. To examine the relationship of digital marketing elements with sales.
3. To find out the most important element for increase in sales among those which are
   Taken for the study

Research methodology:

Secondary Sources:

Secondary source is a source from where we collect data that has already been collected by someone. We have collected secondary data from the published reports, media reports statements of the firms, newspaper and articles. For the purpose of this study, seventy firms/companies were selected randomly which are using digital marketing system to sell their products to customers from NCR

Conclusion:

Digital channel in marketing has become essential part of for promotion of their brands. Now-a-days, even for small businesses it has become a very cheap and efficient way to market their products or services. Digital marketing has no boundaries as the contentcan be shared with anybody anywhere . Digital marketing can be done through various devices such as smartphones, tablets, laptops, televisions and media such as social media, SEO (search engine optimization), videos, content, e-mail and lot more to promote company itself and its products and services. From the study we can also conclude that all the elements of the digital marketing are having a positive correlation with sales and leads to the increase in sales of the various firms. Companies should create innovative customer experiences and specific strategies for media to identify the best path for driving up digital marketing performance

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Stand - UPS Growth in India Opportunity and Challenges

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Abstract
The Government of India launched the StandUp India scheme on April 5, 2016, as part of The Stand-Up India Scheme's objective is to promote entrepreneurship among women or scheduled caste and scheduled tribes by facilitating bank loans. The scheme is similar to, but different from, Start-up India, as both are enablers and beneficiaries of other key government schemes such as Make in India, Industrial Corridor, Dedicated Freight Corridor, Sagarmala, Bharatmala, Digital India, Bharat Net and UMAN.

Keywords: Stand up india, enterprinuers, challenges, opportunities, Government initiatives, achievements and Economic growth.

The scheme was introduced with the motto of encouraging SC/ST caste and women all over the country to enter into entrepreneurship by sanctioning them a loan to start their business. The scheme offers bank loans of between ₹10 lakh (US$13,000) and ₹1 crore (US$130,000) for scheduled castes and scheduled tribes and women setting up new enterprises outside of the farm sector. The scheme helps them out by facilitating loans, providing refinancing options, support and knowledge, substantial reach for maximum benefit; connect centers near home for non-farm sector entrepreneurship. A nation is said to truly progressive only when it has an equitable society; hence stand up India scheme has renounced a revolutionary among the weaker section of the society.

Objectives of the study:
The main objectives of the study are as follows:

1. Studying about the need of the scheme.
2. Studying about the Futures initiatives taken by govt. in this respect.
3. Studying about the Opportunities and challenges and achievements in stand up India.
4. Promote entrepreneurship amongst women, SC & ST category.

Methodology:
The study relied on secondary sources and data was collected from Directorate of Economics and Statistics, Government of Karnataka, Even unpublished documents were also used for the research study. Secondary sources where to address the general framework of the study by drawing on sources of secondary data, which is in books, India and foreign-related references and so on.

Need for the scheme:
The Stand-Up India scheme is based on recognition of the challenges faced by SC, ST and women entrepreneurs in setting up enterprises, obtaining loans and other support needed from time to time for succeeding in business. The scheme therefore endeavors to create an eco system which facilitates and continues to provide a supportive environment for doing business. The scheme seeks to give access to loans from bank branches to borrowers to help them set up their own enterprise. The scheme, which covers all branches of Scheduled Commercial Banks, can be accessed in three potential ways:

1. Directly at the branch
2. Through Stand-Up India Portal (www.standupmitra.in)
3. Through the Lead District Manager (LDM)

Features of the Standup India:

Given below are the key features of the StandUp India scheme:

1. The scheme is part of an initiative by the Department of Financial Services (DFS), Ministry of Finance to promote entrepreneurial projects.
2. An amount ranging from Rs 10 lakhs to Rs.1 crore to be provided as a loan, inclusive of working capital for setting up a new enterprise.
3. The scheme states that each bank branch needs to facilitate two entrepreneurial projects on an average. One for SC/ST and one for a woman entrepreneur.
4. A RuPay debit card would be provided for the withdrawal of credit.
5. Credit history of the borrower would be maintained by the bank so that the money is not used for any personal use.
6. Refinance window through Small Industries Development Bank of India (SIDBI) with an initial amount of Rs.10,000 crore.
7. Under this scheme, through NCGTC, creation of a corpus of Rs.5000 crore for credit guarantee.
8. Supporting the borrowers by providing comprehensive support for pre-loan training like facilitating the loan, factoring, marketing, etc.
9. A web portal has been created to assist people for online registration and support services.
10. The main purpose of this scheme is to benefit the institutional credit structure by reaching out to the minority sections of the population by initiating bank loans in the non-farm sector.
11. The scheme will also be an advantage for the ongoing schemes of other Departments.
12. The Stand Up India scheme will be led by Small Industries Development Bank of India (SIDBI) along with the involvement of the Dalit Indian Chamber of Commerce and Industry (DICCI). Along with DICCI, there will also be involvement of other sector-specific institutions.
13. The designation of Stand Up Connect Centers (SUCC) will be provided to SIDBI and National Bank of Agriculture and Rural Development (NABARD)
14. An initial amount of Rs.10,000 crore will be allotted to the Small Industries Development Bank of India (SIDBI) to provide financial aid.
15. There will be a pre-loan and an operational phase for this scheme and the system and Officials tend to help people throughout these phases.
16. To help the credit system reach out to the entrepreneurs, the margin money for the composite loan will be up to 25 per cent.
17. The people who apply for this scheme will be familiarized with the online platforms and other resources of e-marketing, web-entrepreneurship, factoring services and registration.

Stand Up India Scheme Challenges:

Every scheme or program launched comes up with its set of advantages and disadvantages. The Stand Up India Scheme is also the same. The various challenges with the Stand Up India scheme are as given below:

1. The education of the people about the socio-economic dimensions of Dalit entrepreneurship and women entrepreneurship has not been paid much attention. If this is not done, the Stand Up India scheme may not be very effective.
2. The criteria for this scheme say that the company needs to be innovative. Judging whether a product is innovative or not is

left to the discretion of the DIPP. This may lead to delays and also potentially good entrepreneurial ventures may be lost in the process

3. The company is required to have a turnover of 25 crores. There are very few women-led entrepreneurs and SC/ST led firm which fit this criterion
4. The self-help group's which have indeed provided some impetus to women entrepreneurs, especially in rural areas have been subject to elite capture and have been overwhelmed by locally dominant interests. The Stand Up India scheme does not make mention of any institutional measures to address these challenges
5. Further, the banking sector has not yet penetrated to the hinterlands in a meaningful manner. Therefore, the challenges of lack of institutional bank linkages, awareness among the people, digital divide and many other technical challenges can be obstacles to bank account linkages despite the success of Pradhan Mantri Jan Dhan Yojana. (PMJDY)
6. The funding support of about 10 lakhs to 1 crore is inadequate for the manufacturing sector
7. The SC/ST's and women have not been fully and meaningfully empowered in terms of tech-know how, access to skilled labour, knowledge about the sectors and so on.
8. **Opportunities of Stand-Up India:**
9. Either females and/or belong to the SC/ST category and need monetary fund's to start their Greenfield business ventures. These individuals are provided special loans that can range anywhere from Rs.10 lakhs to Rs. 1 crore at a minimal interest rate.
10. In this aspect, Stand-Up India and Startup India schemes differ greatly since Stand-Up India scheme recipients are given funds directly instead of allowing them better conditions of establishing ventures. There are several Stand-Up India and Startup India differences like these and their motives differ vastly.
11. These loans cover up to 3/4th of the project costs of the business ventures as long as the borrower is willing to fund 10% of the costs by themselves. The loan is composite in nature and has a sufficiently long repayment period of 7 years with a moratorium of 18 months. What's better is that the repayments don't leave a massive dent in your income because of the minimal interest rate offered by the ban.

Government Incentives in Stand Up India:

1. The applicants will get 80% rebate after filing the patent application form. This can only be filled by startups and the benefits are also more for them as compared to other companies.
2. There is also an inclusion of Credit Guarantee Fund and the entrepreneurs enjoy relaxation in Income tax at least for the first three years.
3. There will be complete relaxation for the entrepreneurs for the Capital Gain Tax.
4. Moreover, for the entities who qualify the program will further enjoy benefits like the redemption of tax on the profits earned.
5. This is to ease the entities during the initial startup phase and that there is no burden of paying heavy costs for taxes.
6. The basic aim of the initiative is to provide encourage and motivate new entrepreneurs so as to minimize unemployment.
7. If you are an investor then Stand Up India gives you the right platform where you get professional advice, time, and knowledge about laws. Another benefit is that they would assist you in the start-up for the initial two years of your work.
8. They also provide post set up aid to the consultants.
9. Moreover, another benefit for entrepreneurs is that they do not have to worry much about how to pay back the amount that they have taken for the loan as they need to pay back the loan in a span of seven years, which reduces the stress of repayment for the borrowers. However, a certain amount needs to be paid back each year as per the borrower's choice.
10. This scheme will help to eradicate legal, operational and other institutional obstacles for entrepreneurs as well.
11. It can be a very positive boost in terms of job creation, leading to socio-economic empowerment of Dalits, tribals and women.

12. It may also act as the driving force for other Government schemes like 'Skill India' and 'Make in India'.
13. It will help protect the demographic dividend in India.
14. With access to bank accounts .
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22. It will help protect the demographic dividend in India
23. With access to bank accounts

Achievements under stand up India scheme:

1. As on March 21, 2022 , Rs 30160 crore has been sanctioned under stand up India scheme to 133,995 accounts .
2. More than 1 Lakh women promoters (81%) have benefited from this scheme during its six years of operation .
3. Rs.40,710 crore has been sanctioned under Stand-Up India Scheme to 180,636 accounts in the last 7 years. More than 80% of loans given under this scheme have been provided to women
4. Total number of sc / st and women borrowers benefited under stand up India scheme are mentioned below (as on 21.03.2022)

(Amount. in Rs . Crore)

SC		ST		Women		Total	
No of A/Cs	Sanctioned Amount	No of A/Cs	Sanctioned Amount	No of A/Cs	Sanctioned Amount	**No of A/Cs**	**Sanctioned Amount**
19310	3976.84	6435	1373.71	108250	24809.89	**133995**	**30160.45**

Looking at the above table, the SC community has 19310 accounts and 3976.84% of the money has been released, 6435 accounts have been opened for the ST community and 1373.71% of the money has been released and 108250 accounts have been opened and 24809.89% of the money has been released. Now 1,33,995 accounts have been opened and funds have been released to the extent of 30160.45

Conclusion:

India is ranked 132nd out of 185 economies in Doing Business 2013 by the World Bank. India's restrictions on foreign equity ownership are greater than the average of the Countries covered by the Investing across Sectors indicators in the South Asia region and of the BRIC (Brazil, Russian Federation, India, and China) countries. Indian imposes restrictions on foreign equity ownership in many sectors, and in particular in the service industries. Sectors such as railway freight transportation and forestry are dominated by public monopolies and are closed to foreign equity participation. With the exception of certain activities specified by law, foreign ownership in the agriculture sector is also not allowed.

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Revolutionizing the Game: How Artificial Intelligence is Shaping the Future of Sports

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Abstract

Artificial intelligence (AI) is rapidly transforming the world of sports, providing players, coaches, and fans with new tools and insights to enhance performance, improve decision- making, and enrich the fan experience. From computer vision and natural language processing to machine learning and predictive analytics, AI is being used in a variety of ways to analyze data, optimize training, and enhance game-day strategies. This article explores the ways in which AI is currently being used in sports, including examples from soccer, basketball, football, and other popular sports, as well as the potential impact that AI could have on the future of sports. It also discusses the ethical considerations associated with the use of AI in sports, such as data privacy and fairness, and provides a glimpse into what the future of sports might look like as AI continues to revolutionize the game.

Keywords: Artificial intelligence, Sports, Games, Optimize training, machine learning, predictive analytics.

Introduction

Sports have always been an arena for human achievement, where individuals and teams push the boundaries of physical and mental capabilities to achieve their goals. However, in recent years, a new player has emerged on the field: artificial intelligence (AI). AI is revolutionizing the way we approach sports, from improving player performance and training to enhancing game-day strategies and transforming the fan experience.

At its core, AI refers to the use of computers and algorithms to simulate human intelligence and decision-making. In the context of sports, AI is being used in a variety of ways to analyze data, identify patterns, and provide insights that can help players and coaches make better decisions. From computer vision and natural language processing to machine learning and predictive analytics, AI is being applied across a range of sports, including soccer, basketball, football, and many others.

In this topic, we will explore the ways in which AI is currently being used in sports, as well as the potential impact that it could have on the future of sports. We will also discuss some of the ethical considerations associated with the use of AI in sports, such as data privacy and fairness, and examine how responsible use can help ensure that AI remains a positive force for innovation and progress in the sports industry. Overall, our aim is to provide readers with a comprehensive understanding of how AI is shaping the future of sports and to inspire further research and collaboration between AI experts and sports professionals to continue advancing this exciting field.

Methodology

Artificial intelligence (AI) is being used in various ways in present sports, and its implementation involves a range of methods and techniques. Here are some examples of how AI is being used in sports today:

Performance Analysis: AI algorithms are used to analyze large volumes of data collected from sensors and cameras to evaluate player performance. This data can be used to identify areas of weakness, track progress, and improve training programs.

Game Strategy: AI models can predict outcomes based on historical data, and these

models can be used to inform game strategy. This may involve making decisions about player selection, game tactics, and substitutions.

Injury Prevention: AI can be used to monitor players' physical condition and identify potential risks of injury. This data can then be used to develop customized training programs to reduce the risk of injury.

Fan Experience: AI is being used to enhance the fan experience by providing real-time data and insights during games. This may involve providing personalized recommendations, highlighting key moments, and generating automated highlights.

To implement AI in sports, various techniques and methods are used, including:

Machine Learning: This involves training algorithms to identify patterns and make predictions based on historical data.

Computer Vision: This involves analyzing images and videos to extract information about player movement, ball trajectories, and other relevant data.

Natural Language Processing: This involves analyzing spoken or written language to generate insights and predictions about player performance.

Predictive Analytics: This involves using statistical models to predict future outcomes based on historical data.

Implementation of AI in sports involves collaboration between AI experts and sports professionals, including coaches, trainers, and players. It also requires careful consideration of ethical considerations such as data privacy, fairness, and accountability. AI should be used responsibly to ensure that it remains a positive force for innovation and progress in the sports industry.

Artificial intelligence (AI) has been increasingly used in the world of sports to improve performance, enhance training, and analyze data. Here are some real use examples of AI applications in sports:

Player performance analysis: AI algorithms can analyze player performance data, such as speed, distance covered, heart rate, and more, to provide insights into individual and team performance. AI is used to analyze a player's performance by tracking their movements, speed, and other metrics. This information can be used to provide feedback to the player and the coach. This information can be used to make strategic decisions, optimize training regimes, and improve overall performance.

Athlete tracking: AI-powered sensors and cameras can track athletes' movements and provide detailed analysis of their performance. For example, the NBA uses cameras and sensors to track player movement during games, which helps coaches and trainers to analyze player performance and make more informed decisions.

Game strategy and decision-making: AI can analyze large amounts of data on players, teams, and games to provide insights into game strategy and decision-making. This information can be used by coaches and players to improve their performance and make better decisions on the field.

Predictive analytics: AI algorithms can analyze large amounts of data and make predictions about future events. In sports, predictive analytics can help coaches to make game-time decisions based on data-driven insights. For example, the German national soccer team used AI-powered analytics to analyze data on their opponents during the 2014 World Cup, which

helped them to make strategic decisions during the tournament. AI can be used to analyze large amounts of data related to players, teams, and competitions. This information can be used to identify patterns, trends, and insights that can help teams make better decisions

Injury prevention: AI can be used to analyze biomechanics and detect patterns in player movements that could lead to injuries. By identifying these patterns, coaches and trainers can take preventative measures to reduce the risk of injury. AI can be used to monitor athletes' health and detect potential injuries before they occur. AI can help to prevent injuries by monitoring player's movements and identifying potential areas of concern. This information can be used to adjust training programs to reduce the risk of injury. For example, the English Premier League uses AI-powered wearable's to monitor players' physical activity and provide early warning signs of potential injuries.

Performance optimization: AI can analyze data on athletes' training and performance to identify areas for improvement. For example, the Golden State Warriors use an AI-powered training tool called Home Court to analyze

players' shooting form and provide feedback to help them improve their technique.

Athlete Scouting: AI can be used to identify potential talent by analyzing data related to an athlete's performance, skills, and physical attributes.

Referee assistance: AI can be used to assist referees with decision-making during games, such as detecting offside's and determining if the ball has crossed the goal line. This can help to reduce human error and improve the accuracy of decisions. AI can be used to assist referees in making decisions by analyzing video footage and providing real-time feedback.

Equipment Optimization: AI can be used to optimize equipment and gear to improve performance and reduce the risk of injury.

Fan engagement: AI-powered platforms can provide personalized experiences for sports fans. AI can be used to personalize the fan experience, by analyzing data on individual preferences and behaviours, and tailoring content and promotions accordingly. This can help to increase fan engagement and loyalty. For example, the NBA uses an AI-powered chatbots called NBA Assistant to provide fans with personalized game highlights and other content based on their interests. AI can be used to enhance the fan experience by providing real-time updates, personalized recommendations, and interactive content.

Conclusion

Without human assistance, AI gathers the data and makes decisions. Mass quantities of data can be analyzed by technology for improved learning and experience. At the most complicated level, we're speaking about drones and self-driving cars, but in our everyday lives as athletes, it comes down to screen monitors, chatbots powered by artificial intelligence in smart phone applications, and a whole lot more.

Recent advancements in competitive sports statistics have increased the prominence of the use of artificial intelligence and statistical analysis in sports. This is probably due to the sports audience's increased appetite for novel uses and tactics brought on by the applicability of machine learning algorithms and computer computing power. Overall, AI is becoming increasingly important in the world of sports, and we can expect to see more applications of this technology in the years to come.

AI is redefining how we approach sports, from enhancing game-day tactics to enhancing player performance and training, as well as the fan experience. AI is being used in many different ways to evaluate data, spot trends, and offer insights that can assist players and coaches in making wiser choices. This discussion will examine the present applications of AI in sports as well as any possible effects this technology may have in the future. The ethical issues surrounding the use of AI in sports, including data privacy and fairness, will also be covered, as well as how responsible use can help guarantee that AI stays a beneficial driver for growth and development in the sports sector.

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Impact of Digital Literacy on Rural Women in Karnataka : An Overview

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Abstract

The Digital literacy is an individual's ability to find, evaluate, and communicate information by utilizing typing or digital media platforms. The digital literacy initially focused on systematic digital skills and computers, the focus has moved from stand-alone to network devices including the World Wide Web and social media. Digital literacy is the set of competencies required for full participation in a knowledge society. It includes knowledge, skills, and behaviour involving the effective use of digital devices such as Smartphone's, tablets, laptops and desktop PCs for purposes of communication, expression, collaboration and advocacy. Digital competence and digital literacy are concepts that are increasingly used in public discourse. However, how the concepts are used and how they are defined remains unclear. To be 'digitally literate' in this way encompasses issues of cognitive authority, safety and privacy, creative, ethical, and responsible use and reuse of digital media, among other topics. In today's modern world Digital Literacy has become cardinal and pivotal part of life in this era of information technology. Karnataka state is regarded as geographer's workshop due to its diversified geographical features and location. Karnataka has vibrant automobile, agro, aerospace, textile and garment, biotech and heavy engineering industries. The state has sector specific Special Economic Zone for key industries such as Information Technology, Bio-Technology, Engineering, Food Processing and Aerospace Karnataka is IT(Information Technology) hub of India and home to the fourth largest technology cluster in the world. But still there is a gap or digital literacy among rural women compared to urban women of the Karnataka state. The purpose of this paper is trying attempt to understand performance and challenges of digital literacy among rural women in Karnataka.

Key words: Digital literacy, Rural Women, IT(Information Technology), E-learning, Digital competency and Digital Skill.

1.1 Introduction

In today's modern world Digital Literacy has become cardinal and pivotal part of life in this era of information technology. Digital literacy is the set of competencies required for full participation in a knowledge society. In early days, when computer was just introduced or in stage of beginning, masses were interested in keeping their information secret but nowadays they like to share and disseminate information through social media. Today, everything is recorded, evaluated and measured in the terms of database or public data and information.Digital literacy is an important life skill, maybe the most important since the world is quickly transitioning into an Artificial Intelligence (AI) world. These digital skills allow you to find, use & create information online in a productive and useful manner.Digital access helps rural women refine vocational skills (by taking online classes in agriculture, textile design, beautician training, and more), improve financial literacy, keep up with government programs that benefit their families, and learn about nutrition.'Beyond calling and messaging': India project boosts digital literacy skills of rural women. According to the National survey only 6% of rural women have a computer, implying that a large number of them are digitally illiterate.The gender divide and urban-rural divide are

among the most striking. In rural India, only 3 out of every 10 internet users are women.

1.2 Present Status of Digital literacy in India

To enhance digital adoption, MeitY is focusing on providing digital literacy to the citizens across the country especially in the rural areas. In line with this, the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) was approved by Union Cabinet in February 2017 to usher in digital literacy in rural India with a target to cover 6 crore rural households (1 person per household) across the country.

The Centre is planning to give digital literacy training to six crore rural households over the next three years so that more people make digital payments and benefit from internet-based services. The government will also train 14 lakh anganwadi workers and computerise 65,000 rural cooperative banks, Information Technology Minister Ravi Shankar Prasad said. Besides, digital literacy training will also be given to gram panchayat members and rural health workers, he said.The government will involve common service centres in the digital literacy programme. Apart from the existing 2.05 lakh centres, another 50,000 will be opened soon. The Union cabinet has already approved the Pradhan Mantri Gramin Digital Saksharta Abhiyan, under which Rs 2,351.38 crore will be spent in the next three years.Digitally literate people would be able to operate computers and digital access devices like tablets and smartphones, send and receive emails, undertake cashless transactions and browse the net to access government services and search for information.The scheme will be implemented under the supervision of the Ministry of Electronics and IT in collaboration with the states and Union Territories through their designated state-implementing agencies and district e-governance societies. According to the National survey only 6% of rural households have a computer, implying that a large number of them are digitally illiterate.

1.3 Statement of the Problem

Today, from the Internet and mobile phones to TV and broadcast radio, the rise of information and communications technologies (ICTs) has created a 'global village'. With the issue of impact of digital literacy among rural women, it throws light on the significance of digital literacy in engaging women in different fields. We as a nation have taken initiatives to enhance this, still this much innovations the digital literacy in rural areas of Karnataka has been envisaged as a panacea to tackle all the existing issues that come in the way of adopting digital learning in rural area. There has been a shared belief that access to digital literacy can overcome the problems of access to quality education, lack of innovative methods and techniques in teaching-learning proces, high drop-out rate and paucity of quality learning material. But the biggest limitation lies in the fact that the majority of India's rural people is digitally illiterate. This is a huge setback in India's quest to lay claim to being a global power.This highlights that the digital literacy in the rural regions of Karnataka remains a challenging feat to achieve and we still have a long way to go.

1.4 Review of Literature:

Audrey Y. (2019): Describes critical digital literacy studies has multiplied in recent years as an outcome of the improved cultural consumption of digital media as well as the go to the creation of digital media forms. It extends existing digital literacy studies by concentrating on its sub field of digital nationality. Offering that digital nationality is not another dimension or axis of nationality, but a practice through which local events in the numerous scopes of nationality are showed, this article critically studies how the perceptions of digital nationality can provide more vision into the quality of online local involvement those outcomes in rights to and performances of nationality.

Ojinga G. O. (2019): Reported the regulating result of e-literacy and business information approach on the association between ICT variation and presentation of women- possessed SMEs in Southwestern Nigeria. The theories of information technology trilogy by (Strategy Inf Syst 10:77-99, 2001) coupled with the ICT literacy of (Media Smarts, Digital Literacy Fundamentals, Canada's Center for Digital and Media Literacy Media Smarts, 2017) which in this study is intellectualized as e-literacy-adoption model for improved SMEs presentation. The study implemented the correlational survey research design and contains of women-owned SMEs in Southwestern, Nigeria.

Smitha, H. S. (2021): Investigated the plans towards authorization of women through digital literacy structures. This paper discovers the essential based policy design towards all comprehensive digital policy. It is the digital literacy rebellion. Technology today is expressively diverse from what it was yesterday. Digital literacy is wanted for women to empower them to have right access to education, right access to employment and right access to impartial resources.

Saravana K., Shivalingappa B. P. and Lokesha M. U. (2018): Describes the Digital technology and communication are part of our lives from the start till the end of the day. Technology is accomplishment every feature of society and changing it intensely. But there is one very important and essential part of the humanity that has also been appointed by new developments and findings and that is education with the awareness of E-learning. Digital technology was prejudiced on rural area. In this study expansion through E-learning in rural India is experiential. If it deliberates appropriately then correct then outcomes will be affecting positively. The study originates that digital literacy is an actual tool for authorization of rural women. Digital literacy is learning, using electronic technologies to become self-sustain among rural women in Karnataka.

1.5 Research Gap

In the Very few women have access to the internet in India, especially women living in rural areas. With over 500 million internet users, India has the world's second largest online population. However, only 30 percent of India's online users are women considerably less than other developing countries such as China and Indonesia, which have greater than40 percent female internet users.In India's rural areas, the proportion of female internet users drops to 12 percent.The purpose of this paper is trying attempt to understand performance and challenges of digital literacy among rural women in Karnataka. To enumerate the major obstacles being faced by the rural women while adopting Digital literacy.

1.6 Objectives:

1. To study the concept of digital literacy in Rural Areas in Karnataka.
2. To discuss the schemes launched by the Government regarding Digital literacy.
3. To know the extent to which rural women has been uplifted from this digital literacy.
4. To enumerate the major obstacles being faced by the rural women while adopting Digital literacy.

1.7 Share of persons able to operate computer and use the internet in India

Only 8.5% of women in rural India are able to use the internet as compared to their malecounterparts (17.1%). For urban areas, the percentage of users is significantly higher, but the gender gap remains. Karnataka's total literate population was 4, 06, and 47,322. Similarly, the overall literacy rate in rural Karnataka was 68.73 per cent. Male literacy rates were 77.61 per cent and female literacy rates were 59.71 per cent, respectively. The literacy rate among females living in rural areas in Karnataka was around 60 percent in 2011. The literacy rate among males was higher than females in the state.

1.8 Suggestions

1.To support digital literary across rural India, the National Digital Literacy Mission (NDLMP) programme was set up as a dynamic platform to facilitate digital awareness through capacity and education programmes.

2. However, in this context, the rural areas of Karnataka is advancing in digital literacy in comparison to other rural areas of India but due to the IT hub inKarnataka, government and private communication companies, Tele-communication companies could not provide speedy Internet connections to the rural people, and poor people are still deprived of big facilities of communication devices like computer, laptop and smart mobile phones. So government of Karnataka and Government of India should eradicate digital-divide and impart equal internet facilities and communication devices to backward rural people.With nearly 40 per cent of the population of 1.2 billion falling below the poverty line, and more than 30 per cent of the population being illiterate.

3. That nearly 90 per cent of the population is not digitally literate is a startling statistic that needs immediate rectification if India is to empower its rural youth with adequate job opportunities, and move towards becoming an economic powerhouse.

4. While India is the second largest growing mobile market in the world, it lags behind severely in Internet connectivity and digital literacy. Connecting communities in rural areas to the rest of the world is unheard of — and yet it remains a vital component for communities in the remotest parts of India. Some following suggestions that how we can improve digital literacy among rural areas.

1. **Introducing a strong programme.**
   A strong digital literacy programme will encourage rural people to acquire more skills, which will eventually lead to an increase in job opportunities. Training institutions and private organizations must take advantage of Smartphone penetration in rural areas.
2. **What hampers Internet growth?**
   Poor infrastructure, low bandwidth and undependable electricity have largely contributed to the lack of Internet growth. Poor Internet penetration has led to drastic consequences that could have been avoided.
3. **Progress through digital literacy.**
4. Bringing the Internet to rural India is a catalyst for growth, because of the opportunities it creates in business. The government, NGOs, private enterprises and other stakeholders must appreciate the potential of a digitally literate rural economy and take steps to achieving this.

Others:

To increase the literacy rate in rural areas we should:

1. Boost free education.
2. Organize awareness programs.
3. More schools should be built.
4. Infrastructure improvement at rural areas.
5. Bring in new teaching techniques.
6. Computer literacy should be promoted.

India's state-run digital literacy programme is one of the largest in the world. Still, there is room for improvement in terms of design, capacity, and implementation. Digital literacy initiatives need to track different levels of online proficiency, as well as who has access to the Internet. When assessing the influence and effectiveness of such initiatives, factors like age, gender, education, and technology experience should all be taken into account.

1.9 Conclusion

The present study concluded that majority of the rural masses of Karnataka utilizing benefits of digital literacy by accessing information through e-learning and different web sites. Most of the rural women working through digital mode, use social media, online business/online purchasing, use e-applications, use Google payment, e-payment of electricity payment and e-bank transaction and apply for job through online mode and involve in online study and playing games for chatting purpose, accessing social sites, accessing study material, accessing audio-videos for boost knowledge, sending and receiving messages, access employment opportunities provided on social sites and government sites. To support digital literary across rural India, the National Digital Literacy Mission (NDLMP) programme was set up as a dynamic platform to facilitate digital awareness through capacity and education programmes. These programmes will help rural communities remain competitive, while shaping the development of a technologically powerful nation.

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Digital Technology in Teaching and Learning of Education in India: A Review

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Abstract

Digital education is the innovative incorporation of modern technology and digital tools to assist the progress of teaching and learning. It is also known as Technology Enhanced Learning (TEL), digital learning, or e-learning. Digital education is the way forward to seeking education through the means of technology and digital devices. Digital technology has affected almost every aspect of life today, and teaching-learning is no exception.

The digital technologies such as ICT based (e.g., mobile phone, tablet, notebook, computer, laptop, smart TV, etc.), social media (e.g., Facebook, YouTube, Blogs, Twitter, LinkedIn, Telegram, WhatsApp web etc.), and Programmed Learning (online courses, e.g., Swayam, Swayam Prabha, MOOC, etc.) have become increasingly popular in recent years.

Therefore, a new and modern way of education is required to handle such transformation arising as a result of creation of huge amount of information in a systematic manner. Thus, to resolve the shortcomings of the traditional education system, the world is moving towards digital education which addresses all the issues and challenges of traditional education. The online platform is available 24 × 7, so students can participate at their convenient time, as they are not bound by a specific and strict time schedule. This online education is easily accessible on various devices which are easily known to all the students and they are also eco-friendly. The government is also taking a positive attitude towards technology-based education and taking various initiatives, as a result of which this education is reaching even the remote villages today. Online education is a growing face of India's education system. Since the new Education Policy (NEP) in 2020, many changes have been made in the education system, including online education.

Keywords: Digital Education, Digital Technology, Eco-friendly, Online Courses, Teaching-Learning,

Introduction:

"Digital education is the innovative use of digital tools and technologies during teaching and learning, and is often referred to as Technology Enhanced Learning (TEL) or e-learning". digital technologies, including the Internet, mobile apps, sensors and others have the potential to perk up the learning process.d these skills offer look forward to fill space in improving teaching and learning process. The fast pace of technological and economic developments have needs of learning systems. With the globalization of Indian economy in 1991 and the revolution of Information Technology, the teaching and learning method changed from black board to smart board connecting with the LCD projectors. Now students are not taught by chalk and talk, they are taught by PPT and talk, along with audio recording and video clippings. With the pandemic of COVID-19, we are exemplary moving towards digitization of our education system. We are replacing the tradition books with the e-books. In the same manner assignment is being converted into the e-assignment etc. During the pandemic of COVID-19 teacher taught relations has also been changed, there are being taught via websites and with the help of various applications. Really the digitization of education has make it very easy to search of the various information within second with the help of a click. It make the end user I.e. student to fulfill their thrust of knowledge.

Recently digital education has emerged as major tool to enhance the education process with speedy diffusion of ICT. Digital Education is measured as a major innovation that will improve education process by allowing learners and faculty to participated in remote learning communities to improve quality education by the help of collaborative learning process (Appana,2008:Cruthers,2008 Watson,Winograd, & Kalmon, 2004). due to COVID-19 the school schedules are interrupted and school are now totally dependent on digital education for learning and teaching process. The absence of students due to COVID-19 alarms the educational reformers that there must education reform to enhance the learning process. Digital Education or e-Learning has become a necessity rather than a luxury to improve access to quality education for all students. It will only possible when there will be help and cooperation from all government organization, substantial investment and considerable efforts.

Objectives of the study:

1. To know the conceptualization of the Digital Education
2. To understand the benefits of Digital Education
3. To understand the digital education initiatives and bridging the Digital Divide.

Research Methodology:

As per the requirements of the study descriptive nature is being adopted in research design. Secondary source and published articles were extensively used for the collection of data. Distinctively used sources were various web articles.

Data Collection:

The research paper depends upon the secondary source of information. To prepare the research paper, the required date is extensively used, as it is descriptive in nature. The research paper depends upon the secondary source of information. To prepare the research

Discussions:

Objective no.I: To know the conceptualization of the Digital Education

Meaning: Digital education is also known as technology- enhanced learning or e-learning. In simple terms, digital education is the use of technology and digital tools to each and learn.

What is digital education: Digital education is the innovative use of digital tools and technologies during teaching and learning, and is often referred to as Technology Enhanced Learning (TEL) or e-Learning. Exploring the use of digital technologies gives educators the opportunity to design engaging learning opportunities is the courses they teach and these can take the form of blended or fully online courses and programmes.

1. A rather new term describing the use of digital technologies in education.
2. Education that uses digital technologies to engage in the learning process including computers, software, phones and cameras.
3. Innovative use of digital tools and technologies during teaching and learning
4. It refers to the use of innovative technologies to teach students of all ages.
5. Digital Education is the process of using digital technologies to assist the modern education system.

Objective no .II: To understand the benefits of Digital Education

Benefit Of Digital Education

Benefits to Academic Institution: Academic institution can easily manage their activities with help of digital education. Some of the important benefits are:

1. Time and money of the Institution will be saved.
2. They can easily plan to conduct online exam and publish the exam results quickly.
3. It makes knowledge to transfer easily and equally from teacher to each and every student with the help of effective and advanced technology based teaching tools.
4. It helps in creating interest among students which will help them in learning many concepts through interactive- audio-visual teaching contents.
5. Advantages over other schools ad colleges which cannot provide such integrated feature-based learning and management system.
6. Easy communication between institution and parents for student related academic activities.

1. **Benefits to Students:** As all the study contents will be taught in the classroom through multimedia sides, it creates interest ad enthusiasm among the students. Learning will be fun for them. They

are able to memorize many concepts through interactive audio-visual teaching contents. Some other benefits to them are:

1. They can easily view their daily time-table, class assignment, any events planned in school etc., from home.
2. They are able to prepared projects and presentation online.
3. They can give online exam and view their results.
4. They can easily collect teaching contents of missed lecture online.
5. The can access library online.

3. Benefits to Parents: In today's world, it is difficult for parents to visit the school or colleges because of their busy work schedule. Digital education helps the parents to view all the information of their ward from comfort of their home or office. Some of the other benefits are:

1. The web facility of digital education helps the parents to view their child's attendance record, progress in syllabus and time table etc,.
2. They can easily check the subject taught in school, homework given to their ward, any future assignments and projects and guide the ward accordingly to participate and practice.
3. Easily view internal and semester exam schedule and results
4. They can easily pay the school fees and other activity charges.\
5. They can get information on various school events, notices, holidays and can track the presence of ward in the classroom/outside the class.

2. **Benefits to Teachers:** Digital in education also creates interest among teachers. It helps them to make teaching interaction among students very effectively. Some other benefits are:

1. It helps the teacher to manage their class time and teaching content effectively.
2. They can easily avail the school as well as class related information through web.
3. They can check daily time-table, assignments, teaching history, events and holiday list, self as well as students attendance etc.
4. It will helps in explaining the difficult content easily and in effectively.
5. Benefits to Principals: Some of the important benefits to principle are:

1. Easy to manage all the school/college activities.
2. In case if the he or she on leave, he/she will be able to access all the school information only and manage the school easily.
3. He/She can view teachers' teaching progress and students' performance.
4. it will helps in allocation of class and subject to a teacher according to his/her interest and experience.
5. He/She can assign tasks to other staff members and give remarks for their works.

Objective no. III: To understand the digital education initiatives and bridging the Digital Divide.

The digital divide in India is challenging the nation's current educational methods across its entire student body. Digital connectivity is more necessary than ever before in guaranteeing that students can sustain their studies while schools remain physically closed. Following are the key initiatives or ways take by the Government of India to enhance and facilitate digital technology education activities. Some of the digital divides mentioned as bellow:

1. **National Digital Library (NDL) in May 2016:** The National Digital Library of India is a project under Ministry of Education, Government of India. The target is to gather and collate metadata and supply full text index from several national and international digital libraries, further more as other relevant sources. It's a digital repository containing textbooks, articles, videos, audio books, lectures, simulations, fiction and every one different kinds of learning media. The NDLI provides freed from cost access to several books within the Indian languages and English.

2. E PG Pathashala in 2015: E-PG Pathashala is an initiative of the MHRD under its National Mission on Education through ICT (NME-ICT) being executed by the UGC. The content and its quality being the key component of education system, top quality, curriculum-based, interactive e-contents in 70 subjects across all disciplines of social science, arts, fine arts and and humanities, natural and mathematical sciences, linguistics and languages are developed by the topic experts working in Indian universities and other research and development institutes across the country. Every subject has a team of man of science, paper coordinators, content writers, content reviewers, Language editors and multimedia team.

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a. e-Adhyayan e-Adhyayan could be a repository of e-Books for the Under-Graduate & Post-Graduate Courses. The eBooks are being derived from the e-text of e-PG Pathshala. The project is initiated by the University Grants Commission and Ministry of Human resource Development, Government of India. The author / course coordinator of books is Indian experts. Currently, e-Adhyayan has 50 e-Books in Sociology, Library & informatics, engineering Science & IT. It's available in open access under Creative Common platform. The platform of e-Books is pressbook which is open source. It's been deployed and customised by the INFLIBNET Centre. It also facilitates e-book publishing off-line, where author can write and publish his/her own book. b. UGC-MOOC UGC MOOCs- A vertical of Study Webs of Active–Learning for Young Aspiring Minds (SWAYAM) portal, UGC has launched MOOC initiated by the govt. of India with an aim to enable access, equity and quality within the domain of education for the aspirants. c. e-Pathya e-Pathya (Offline Access) is another vertical of e-Pathshala which is a software driven course/content package which helps students pursuing education (PG level) through distance learning yet as campus learning mode. This vertical also allows offline access to course content

3. Shodhganga platform in June 2009, The Shodhganga@INFLIBNET Centre provides a platform for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. The repository has the power to capture, index, store, disseminate and preserve ETDs submitted by the researchers.

4. e-Shodh Sindhu platform e-Shodh Sindhu was formed with merger of three consortia, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium in December 2015. The most objective of the eShodh Sindhu: Consortia for instruction E-Resources is to supply access to qualitative electronic resources including full-text, bibliographic and factual databases to academic institutions at a lower rate of subscription.

5. e-yantra The genesis of e-Yantra was within the teaching of the Embedded Systems course at IIT Bombay through the space Education Program of IIT Bombay from 2003 to 2006. The goal is to harness the talent of young engineers to resolve problems using technology across a spread of domains such as: agriculture, manufacturing, defence, home, smart-city maintenance and repair industries. Within the context of e-Yantra there are such a large number of initiatives, such as- e-Yantra Robotics Competition, e-Yantra Summer Internship Program, e-Yantra Lab Setup Initiative, e-Yantra Ideas Competition, e-Yantra Symposium, Task Based Training, etc.

6. FOSSEE In 2013, FOSSEE (Free/Libre and Open-Source Software for Education) project promotes the use of FLOSS tools in academia and research. The FOSSEE project is a component of the National Mission on Education through Information and Communication Technology (ICT), Ministry of Education (Moe), Government of India. This project is completed by the subsequent medium- i. Scilab, ii. Python, iii. eSim, iv. Osdag, v. DWSIM, vi. Open FOAM, vii. Open Modelica, viii. Open PLC, ix. FLOOS-Arduino, x. SBHS, xi. R, xii. QGIS, xiii. FOCAL, xiv. SOUL

7. Spoken Tutorial portal The Spoken Tutorial Project is launched under the National Mission on Education through Information and Communication Technology (ICT), by the Ministry of Human Resources and Development, Government of India. The objective of spoken tutorials is to popularize online learning. Spoken Tutorial is a multiaward-winning educational content portal. Here one can learn various Free and online courses all by oneself. Self-paced, multi-lingual courses ensure that anybody with a computer and a desire for learning can learn from any place, at any time and in any language of their choice.

8. Virtual Labs The Government of India introduced a pilot virtual lab in 2009 and the main one in 2010 to enable undergraduate and post-graduate students (pursuing science and engineering courses) remotely access the labs and enhance their study experience. The virtual labs off er students a Learning Management System and various study aides such as video lectures, web resources, self-evaluate on and animated demonstrate ones.
9. Vidwan portal In the year 1999, VIDWAN is the premier database of profiles of scientists / researchers and other faculty members working at leading academic institutions and other R & D organisation involved in teaching and research in India. It provides important information about expert's background, contact address, skills and accomplishments.
10. National Digital Educational Architecture (NDEAR) In the Union Budget 2021-22, the Indian government established the National Digital Educational Architecture (NDEAR). National Digital Education Architecture (NDEAR) is federated, unbundled, interoperable, inclusive, accessible, evolving which aims to create and deliver diverse, relevant, contextual, innovative solutions that benefit students, teachers, parents, communities, administrators and result in timely implementation of policy. 11. PM eVIDYA Programme The e-Vidya program begun in May 2020 in response to the COVID-19 pandemic. The Pradhan Mantri eVidya is an initiative by the Ministry of Education that will help in facilitating access to digital/online learning as well as teaching materials of various types among students and teachers.
12. DIKSHA In September 2017, the government introduced DIKSHA. DIKSHA is an initiative of the National Council of Educational Research and Training (NCERT) under the aegis of the Ministry of Education, Government of India. DIKSHA is a unique initiative which leverages existing highly scalable and flexible digital infrastructures, while keeping teachers at the centre. It is built considering the whole teacher's life cycle - from the time student teachers enrol in Teacher Education Institutes (TEIs) to after they retire as teachers. DIKSHA can be accessed free of cost by anyone. It also offers more than 100 microservices as building blocks for the development of platforms and solutions. It is designed to support multiple languages and solutions. At present, it supports 18+ languages and various curricula of NCERT, CBSE and SCERT pan India.
13. SWAYAM WAYAM is a programme initiated by Government of India on 2017 and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.
14. SWAYAM PRABHA In 2017, The SWAYAM PRABHA is a group of 22 DTH channels devoted to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 satellite.
15. NISHTHA The Department of School Education and Literacy has launched a National Mission to improve learning outcomes at the elementary level through an Integrated Teacher Training Programme called NISHTHA under the Centrally Sponsored Scheme of Samagra Shiksha in 2019-20. NISHTHA is a capacity building programme for "Improving Quality of School Education through Integrated Teacher Training". It aims to build competencies among all the teachers and school principals at the elementary stage. NISHTHA is the world's largest teachers' training programme of its kind. The basic objective of this massive training programme is to motivate and equip teachers to encourage and foster critical thinking in students. The initiative is first of its kind wherein standardized training modules are developed at national level for all States and UTs.
16. OLabs To off er student's lab learning experience via the internet, the government introduced OLabs in November 2014 for those who do not have access to physical labs.
17. On Air Shiksha Vani On Air Shiksha Vani, DAISY by NIOS for differently-abled, e-Path Shala- Radio broadcasting is being used for children in remote areas who are not online (especially for grades 1 to 5). 18. Gyandoot Gyandoot is an Intranet-based Government to Citizen (G2C) service delivery initiative started in the Dhar district of Madhya Pradesh in January 2000 with the twin objective of providing relevant information to the rural population and

acting as an interface between the district administration and the people.

19. Internet Saathi Program Internet Saathi Program – The Internet Saathi Program was launched in 2015 by Google India and Tata Trusts. The aim of this project is to facilitate digital literacy among rural Indian women.

20. National Education Policy (NEP- 2020) National Education Policy, 2020 aims at making "India a global knowledge superpower" by introducing several changes from the school to college level in the Indian education system with special emphasis on digital education. Know more on New Education Policy at the linked page. All these initiatives are very much helpful to our students, society and also help to bridging the gap of digital divide. The shift to online education also brings forward the conversations around digital divide and digital readiness of every stakeholder and institution.

Conclusion:

Today society is constantly changing. This variability is the law of nature. Due to the change in the flow of this rule, people have adopted this technology today. Technology has taken place in every corner of the society today. Today technology is giving a chance to the backward students to move forward today. The positive steps taken by the Government of India have made the education system of students easier. This study will be very informative to the readers. Analysis of secondary information will influence the reader's mind towards technology-based learning. The progress of society is not a mere measure. Proper use of technology symbolizes the progress of society

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Working Women Safety in India: Challenges and Measures

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Abstract

There was a time when women would have to fight for their right to employment. Fortunately, today this fact stands as our past. Unfortunately, our present isn't any better either. The deplorable figures of crime against women in our country confirm the challenging and insecure lives women live even today. Violence against women in the work place takes place in all countries throughout the world and takes many forms, including sexual harassment and bullying. It affects all professions and sectors and particularly women living in poverty as they are more likely to be exposed to exploitation.

Objectives: To understand the challenges faced by the working women at their workplace and to know the safety measures to improve the security for working women..

Methodology: The present study is adopted descriptive research design. The present study is primarily based upon the secondary data. The research for this paper conduct through literature review, without any empirical will not conducted. A large resource of written material will used, which included books magazine articles, academic journals, as well as the websites.

Key Words: Working Women, Violence, Harassment and Safety Measures

Introduction:

India emerging out as one of the most developing nations of the world, it still lacks to take measures regarding women's safety. India is considered to be one of the most dangerous countries for women. Indian women are constantly live in a state of fear when they are alone on the streets or at work, or in the markets.

According to the latest NCRB report, 2021 saw that, Crimes against women increased by 15.3 percent in 2021 as compared to the year 2020 (3,71,503 cases were registered in the year 2020 whereas in the year 2021 4,28,278 cases were registered. The number of registered rape cases has increased from 28,046 in the year 2020 to 31,677 in the years of 2021. Kidnapping cases have increased from 84,805 in the year 2020 to 1,01,707 in the year 2021. Overall crime rate (number of crimes per 1 lakh) has fallen down from 487.8 in the year 2020 to 445.9 in the year 2021. However, we see this decrease because in the year 2020, there were more cased of violation of COVID-19 rules, which decreased in the year 2021. In the year 2021, the rate of violent crimes was highest in Assam (76.6 crimes per 1 lakh population). It was followed by Delhi (57) and West Bengal (48.7). Whereas in Gujarat, Andra Pradesh and Tamil Nadu this rate was minimum. The highest increase in violent crimes was observed in Odisha.

A workplace is a location at or from which an employee ordinarily performs the duties of his of her position and, in the case of an employee whose duties are of an itinerant nature, the actual building to which the employee returns to prepare and / or submit reports, etc., and where other administrative matters pertaining to the employee's employment are conducted the workplace is located in a variety of setting including offices, manufacturing facilities or factories, stores, farms, out of doors and in any location where work is performed

Workplace Safety:

those conditions related to physical health

Workplace safety is a major concern for all employees; therefore, employees must refrain from acts of violence and seek assistance to resolve personal issues which may lead to

acts of violence in the workplace. Workplace safety is about preventing injury and illness to employees and volunteers in the workplace. Therefore, it's about protecting the non profit's most valuable asset: its workers. Safety in the workplace also means having an environment free from injury and hazards. Instituting proper procedures and ensuring a safe environment will allow employees to work without worrying about their safety.

Women Safety:

Women's safety involves strategies, practices and policies which aim to reduce gender-based violence (or violence against women), including women's fear of crime.

Women's safety involves strategies and policies that take place before violence has occurred to prevent perpetration or victimization. This can happen by improving knowledge and attitudes that correspond to the origins of domestic or sexual violence, such as adherence to societal norms supportive of violence, male superiority and male sexual entitlement. Furthermore, women's and girls' full participation in community life must be promoted, partnerships between local community organizations and local governments must be pursued, and including a full diversity of women and girls in local decision-making processes must be promoted. Prevention efforts involve strategic, long-term, comprehensive initiatives that address the risk and protective factors related to perpetration, victimization and bystander behavior.

Required Measures for Women Safety

At a very young age in many families, girls are treated lesser than boys. A lot of families believe that women should not have an opinion and that they are inferior to men. In this case, the condition for the non-working class of women is worse, as they have to depend on the male family members for survival.

This patriarchal culture is the root cause of violence against women, which needs to stop. Change in the mindset of people is the step towards bringing a better future for women in India. It is saddening to know that even now, the victim is often blamed after a rape.

Repeated rape cases have angered many Indians. Some are now demanding capital punishment for rapists. And there have also been calls for authorities to publicly hang the culprits. Analysts are of the view that a low conviction rate and the flaws in the country's judicial system are giving way to vigilante justice. This shows that we are in severe need of fast courts to hear cases in a time-bound manner.

Installation of streetlights, night drop vans, better awareness at school and college level are some of the basic steps towards women safety. They were just forming laws that are not enough.

Proper implementation of these laws should be the main focus. Both print and electronic media should raise voice against the crime, but at the same time, the privacy of any victim should not be compromised.

There is an urgent need to understand and solve this problem of women's safety for women to live with dignity. Women cannot feel empowered until they are safe. As many women wait for Justice to be delivered and India awaits to be a better place for women. Women's Safety is a right that no women should be deprived of. With women feeling safer, we can build a more empowered country.

Conclusion:

Women and Girls are vulnerable to violence both within and outside the home. Past efforts have focused mainly on domestic violence and sexual harassment at the workplace, sexual assault and rape. The present situation focuses primarily on violence in the public domain, including sexual harassment, staring, touching, sexual assault, attempted rape, stalking, lewd comments, etc. These forms of violence demand different responses and strategies precisely because of their location in the public space. In many ways, the present initiatives are pioneering one, which aspire to formulate a strategic framework to make the cities safe for women

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Digitalization of Un-Organised Retail Marketing In India

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Abstract

With the invention of automatic vending machine (AVM) structure of retail marketing has been changing. Globalisation has brought many changes in trade and commerce in India. Then why we should not digitalise our un-organised retail marketing in India. What are challenges and issues? With the emergence of Digital India concept, Science and technology, Information tools and technique have been developing unimaginably. Consumer's perception regarding shopping has been changed with the introduction of internet media. Retail industry has witnessed major revolution in the changing technology oriented business scenario of 21st century in India. Internet has shrunk the entire World. The rules of the game in retailing are fast changing with the introduction of Information Technology. The digital Retailing is the front door of the online store that interacts between the e-retailer and consumers. The electronic retailing (e-Tailing, e-Retailing, internet retailing etc.) is the model of selling of retail goods using electronic media, in particular, the internet. E-Retailing is a subset of e-Commerce (Electronic Commerce). E-Retailing accounts for about 10% of the overall growth of e-Commerce market. The growth in the digital market is driven by the need to save time by urban India. It is estimated that 2.5 billion internet users, access to internet has played a significant role in growing the business markets. The Internet gives retailers an instrument for: broadening target markets, enhancing consumer relationships, extending product lines, improving cost efficiency, improving consumer communications, and delivering customized offers. Changing demographics (youthful India), changing lifestyles and exposure to the developed markets give a fillip to e-Retailing industry. One can buy anything from stereos to iPod's without stepping out through internet media. Digital -Retailers serve 24 hours x 7 days in a hassle free manner to consumers.

Keywords: e-retailing-commerce, IT, LPG, digital marketing, unorganised market.

Introduction

Globalisation has brought many changes in business. The LPG opened door of technology to access businessmen. Modern concept of shopping is internet retailing or e-Retailing or digital retailing. Information Technology revolution is the incredible speed at which information is transmitted and at which technology bears down on society, constantly providing new ways of communicating, of preserving and accessing knowledge, and of tracking persons and objects. These changes have brought with them tremendous opportunities to enhance older ways of doing business. —When a main street store builds a website, they open up opportunities to expand their market beyond geographical boundaries. The chances of losing sales from the physical shop are slight, but the potential to increase sales through their website could be enormous…..(Tiernan, B.,2000.). E-Retailers have developed many innovative promotions to lure customers and thereby growing the market. As one of the market trends, e-Retailing has been widely used in retail industry and growth is increasing day by day in today's scenario. According to Turban (2006), e-Retailing is defined as retailing conducted online, over the internet. The vocabulary electronic

retailing that used in internet discussions as early as 1995, the term look like an almost in evitable addition to e-mail, e-business and e-Commerce, etc. It started out way back in 1997 when Dell Computer got multimillion dollars orders on the website. E-Retailing is synonymous with business- to- consumer (B2C) transaction model of e-Commerce. E-Commerce is the master field defining the e-Retailing operation. E-Commerce is a huge domain on conducting business over internet and e- Retailing is a part of it.

Meaning of Digitalization in Retailing

Digital marketing is the marketing of products or services using digital technologies mainly on the internet but also including mobile phones display advertising and any other medium. Digital marketing channels are systems based on the internet that can create, accelerate and transmit product value from producer to terminal consumer by digital network. Digitalization of retailing is the sale of goods and services through the internet-retailing can include use of electronic and mechanical tools and techniques to the final consumer.

Objective Of The Study Digitalization of Retailing Marketing

1. To explore the factors that amount to the growth of e- Retailing in India.
2. To study the benefits and challenges associated with the e-Retailing business seen brief.
3. To suggests positive recommendations for futuristic growth of e-Retailing in India.

Essentials for Digitalization of Retailing

There are certain essential components for an e-Retailing business to be successful. Before setting up an electronic storefront, one must consider these components well in advance. The important essentials of e-Retailing are as:

1. E-Catalogue 2.Search Engine3.Shopping Cart 4.Distribution of Digital Goods 5.On line Customer sale person 6.Anorder status Checking Facility 7. Create Consumer Community.

Growth Factors of Digital Retailing

As estimated by Euro-monitor report, Electronic retail growth of Indian market has already touched Rs. 2700 cores in the year 2010 from Rs. 400 crores in 2005. (http://indianecommercestory.blogspot.com/2010/01/etailing-market-in-india.html). E-Retailing, which includes purchases of durable products such as electronic items, home and kitchen appliances, as well as personal items like apparels and jeweller, constitutes 8 per cent of the overall e-commerce market in India. The broadband and mobile penetration, 3G rollout, cash on delivery, internet banking has led to rise in online transactions. Indian e-Retail market is also expected to be more than INR 10,000 crores by 2015. India has seen some dramatic changes in the way internet has affected the lives of the people.

Essential factors for significant growth of Digital Retailing in India

(a) Best Price with Better Bargains: e-Retailing eliminates the need to maintain expensive and fancy showrooms.

(b) Rising trend of cyber cities: The rising trend of internet shopping has taken off more noticeably in metropolitans such as Delhi and Mumbai where both consumers and merchants have become equally net savvy.

(c) Mobile Governance: Moreover the growth of the mobile communication i.e. mobile governance has led to the growth of the online retailing as people are more accessible to internet 24 x 7.

(d) Increased use of Net banking/credit cards/ debit cards: The banks (RBI and others) are bringing out new guidelines (like one time passwords, security questions) so that the online transactions can be made safe for the consumer.

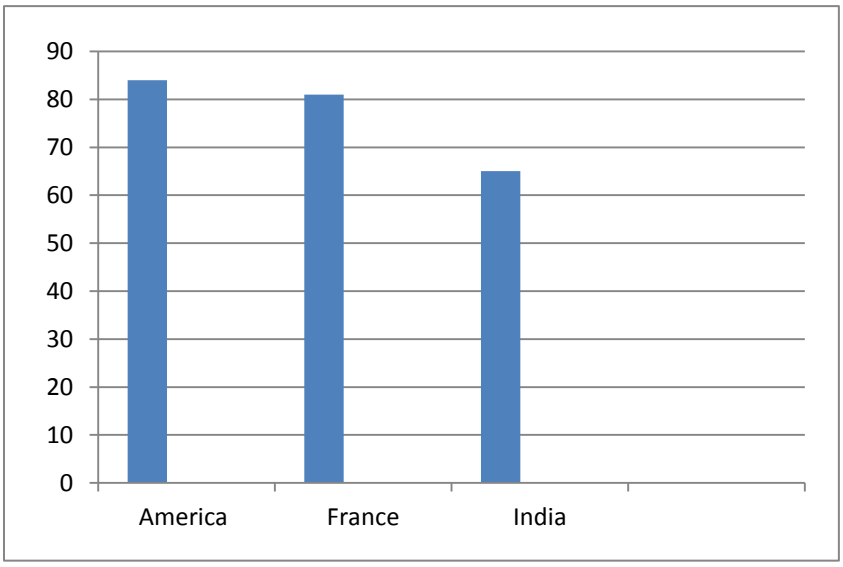
(f) E-Retailing attraction for NRI's: Online shopping is a big attraction for the NRIs (non-resident Indian), the apparel and gifting business online has maximum NRI consumers.

(g) Emerging Rural India: If farmers have to purchase any such thing they have to come all the way to a nearby city. The online stores can offer them these products and many good deals in a convenient way.

(i) Government –Online Initiatives: A series of initiatives from the government, public sector banks and Indian Railways embracing the net, have helped to boost the confidence of users to trade online in this sector as well.

Penetration of digital-Retailing

% of digital-retailers (2017-18)



Largest e-commerce companies in India
Flip cart, Amazon, Myntra, Pay tm, and Snap deal.

Benefits of Digitalization of Retailing
1.Consumer Convenience. 2. Desirable Price and Selection.3.Market Research On-line interactive customer service.4. Promotional tool for business.5. Virtual Showrooms bearing less cost.6. Better Information for Customers.7. 24X7X365, anytime- Anywhere services.

Major Challenges of Digitalization of Retailing
Unavailability of Internet Access* Absence of _touch-feel-try' experience *Consumer Favouritism for Brands. * Untimely Delivery of products * Loophole of Seasonal Fluctuations *Lack of trust between buyer and Seller * Language Barrier * Cyber Crimes

Suggestions:
1. Consumer has to be served. A best 24x7x365 customer service through email, chat and toll free number facility. 2. The industry/company should ensure that customer has the right information – a potent transparency weapon, right mechanism &feels safe and secure while transacting online. 3. Objective of website should be to increase public awareness and cognizance of company's name, brand, or identity and make product information available to customers and/or distributor. 4. The best method to reach out to people is to create medium through blogs and discussion forums for them so that they have the freedom to rate the quality of service delivery and leave behind suggestions for improvement. 5. According to consumer expectations and business needs, Managers can control the degree of freshness of web site content by making design choices, such as use of dynamic pages and the more frequent updating of content. 6. Certifying and authentication authorities that have to come up as a sequel to the Information Technology (IT) Act need to be fully operational early.

Conclusions
In modern scenario, Digitalization of Retailing or online shopping has become part and parcel of the people in India . The new wave of consumerism coupled with urbanization with paradigm shifts in the demographic and psychographic dynamics have driven consumers frequently to use retail website to search for product information and make a purchase of products. And e-Retailing in India can be a success if the e-Retailers change their business models and understand their consumer more because consumer are On this website, find quality Manufacturers, Suppliers, Exporters, Importers, Buyers, Wholesalers, Products and Trade Leads from our award-winning International Trade Site.

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Digital Finance as a tool for financial inclusion in Dakshina Kannada District

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Abstract

In order to reduce poverty, promote economic growth, and assist the secondary sectors, financial inclusion is emerging as a critical, essential facilitator. The emphasis now is on increasing financial inclusion through digital finance because of how well it works to increase financial inclusion in developing nations. As a result, in the wake of digital finance, digital financial inclusion has become increasingly important. It is crucial to pinpoint the components that encourage digital financial inclusion as a result. This study attempts to examine societal behaviour regarding digital financial inclusion and assists in identifying the factors that support it. With the help of this study, the banking industry and policymakers will be better able to comprehend how perception and perceived risk can be used to advance digital financial inclusion in Dakshina Kannada District. This research reveals that digital banking access, usage, and quality significantly influence digital financial inclusion achieved by digital banking. Among the three factors, 'Quality,' 'Usage,' and 'Access' have the most impact on digital financial inclusion. The current study found that there was a very strong positive link between ADB, UDB and QDA. It is also discovered in the present study, that the rate of voluntary exclusion was quite high in the regions of in Dakshina Kannada District. while the prospects of shifting to the use of QDA were also very high.

Keywords: Financial Inclusion, Digital financial inclusion, Digital Finance in Dakshina Kannada District

1. Introduction

When all economic activity and societal segments have simple, affordable access to financial services, financial inclusion is increased. In Dakshina Kannada District, a significant segment of the population is still not a part of the formal financial system, despite recurrent emphasis on the need for financial inclusion by bringing more and more of the excluded population into the formal financial system in the nation's policy framework. Financial inclusion is developing as a crucial critical enabler of reducing poverty, ending hunger, fostering economic growth, and helping the secondary sectors, among other things. ADB, UDB, and QDA were found to have a very strong positive association in the current study (digital financial inclusion achieved through digital banking). This study also reveals a wide variation in how users in Dakshina Kannada District evaluate the usage, usability, and benefits of different DFS for digital financial inclusion. This can be accomplished by raising public knowledge of the use of DB and informing them of its resulting advantages. Reducing complexities in the technicalities of using DB & making it more consumer-friendly can also help to reduce such differences. A slightly strong negative relationship exists between digital financial inclusion achieved through digital banking. Such a dilemma in the minds of the people can hamper the growth of the use of digital finance in Dakshina Kannada District. Thus, it becomes necessary to understand the perception of people before targeting them with various DB, this can be done at unit levels of the banks through one-to-one contact. This study also found no significant difference in terms of privacy risk, but substantial disparities in terms of performance risk and financial risk. To mitigate the impact of perceived risk on

digital financial inclusion, steps must be implemented to lessen the large disparity between performance risk and financial risk. This can be done by building a robust & secured digital financial transnational platform, where the fear of conducting a financial transaction online is the least. It is because people have concerns over the current security systems used for conducting financial transactions online. Usage of the DB was found satisfactory among the users of the DB. Thus, measures must be taken to bring the un banked & non-DBS users with a bank account under the ambit of the digital financial services, this will further enhance the status of digital financial inclusion in Dakshina Kannada District.

2. Literature Review

The relevant literature has been reviewed to explore the theoretical foundation behind digital finance, financial inclusion and digital financial inclusion. CGAP (2011), defined financial inclusion as "A state in which all working-age adults, including those currently excluded by the financial system, have effective access to the following financial services provided by formal institutions: credit, savings (defined broadly to include current accounts), payments, and insurance". According to Usha Thorat(2007), the use of IT solutions for. Mandira Sarma (2008) followed a multidimensional approach to develop an Index of Financial Inclusion(IFI).The approach is similar to the computation of development indexes such as HDI, the HPI, and the GDI and soon. Firstly, the dimension index for each dimension of financial inclusion is calculated, and this dimension index has a direct relationship with the country's achievement in that dimension. Laxmi Mehar (2014) it was observed that the use of mobile banking had accelerated financial inclusion in India. Nonetheless, it is far from sufficient, covering only 2.5% of the overall population. In India, poor people have mobile phones as well, but many are unaware of mobile banking. As a result, steps must be taken to raise awareness of mobile banking. According to Roy & Sahoo (2016), the electronic payment system of any country faces several risks like bank failures, frauds, counter-party failures, etc. These risks can trigger disruptions in the electronic payment system. RTGS is a widely accepted mean of electronic payment system amongst the banks and business firms but it requires a push on the retail side. Report of McKinsey & Company (September, 2016) defined digital finance as "as financial services delivered over digital infrastructure—including mobile and internet—with low use of cash and traditional bank branches". Their definition of digital finance is used by them in a wider sense. According to Rajiv Anand (2017), mobile phones especially smartphones have created many opportunities; mobile banking and mobile wallets are the two fastest-growing segments in the economy. It is an enabler for faster and secure banking transactions for the clients while it is cost-efficient for the banks as well. Prasanna Lohar (2017) identified three driving factors of Digital Banking. First is, adoption. Second is, Agility, The last factor is, arrival of players, New players have entered into the market like payment banks and Fintech, These players aregivingcompletiontothetraditionalbanks.

Kosta Peric (2015), stated that if emerging digital payment technologies are combined with mobile phone technology than it will enable the re-engineering of financial services which can bring down 90% cut in the cost of the transaction. The author called this as Digital Financial Inclusion. If this thing happens then it can immensely help in including poor and the rural people under the umbrella of financial inclusion. According to Soren Heitmann (2018), Sub-Saharan Africa exemplifies mobile money's potential to drive financial inclusion. Evidence of Digital Financial Inclusion from neighbors developing countries of Dakshina Kannada District, India is also in the list of technology-driven financial inclusion. In 2006, RBI called on banks to provide basic financial services in all the financially excluded villages, by adopting a technology-driven banking correspondent model.This was done in two phases. In the first phase, villages with a population of more than 2000 were covered, while in the second phase, villages with a population of less than 2000 were covered. To fulfil this goal, banks have deployed a combination of new branches, fixed site business correspondent outlets, and mobile technology-based banking correspondents. As of March 2012, the initiative had established 96,828 new customer service stations. In 2011, only approximately 35% of India's adult population had a bank account, according to Findex data and China established one of the

largest agent banking networks in the world, to provide basic financial services in remote and rural areas in a cost-effective manner. China provided subsidies and social transfers through bank cards, by using the agent banking networks. By the end of the year 2016, 983,400 agent-based services points were established covering over than 90% of the administrative villages in China. The regulatory space provided for innovations in digital finance is one of the key factors behind the success of digital finance in China.(World Bank,2018).

3. Research Methodology

This section outlines the aim and objectives and specifies the hypothesis for the research.It also provides the steps involved in the design of the questionnaire. Objectives of the study are as follows:

1. To study the relationship between demography and the use of Digital Financials.
2. To identify the critical factors responsible for promoting financial inclusion through Digital Financials.

Research Hypothesis: Based on the review; three indicators; namely; Access, Usage, and Quality were considered & tested, as an indicator of digital financial inclusion, and the following hypothesis was formulated:

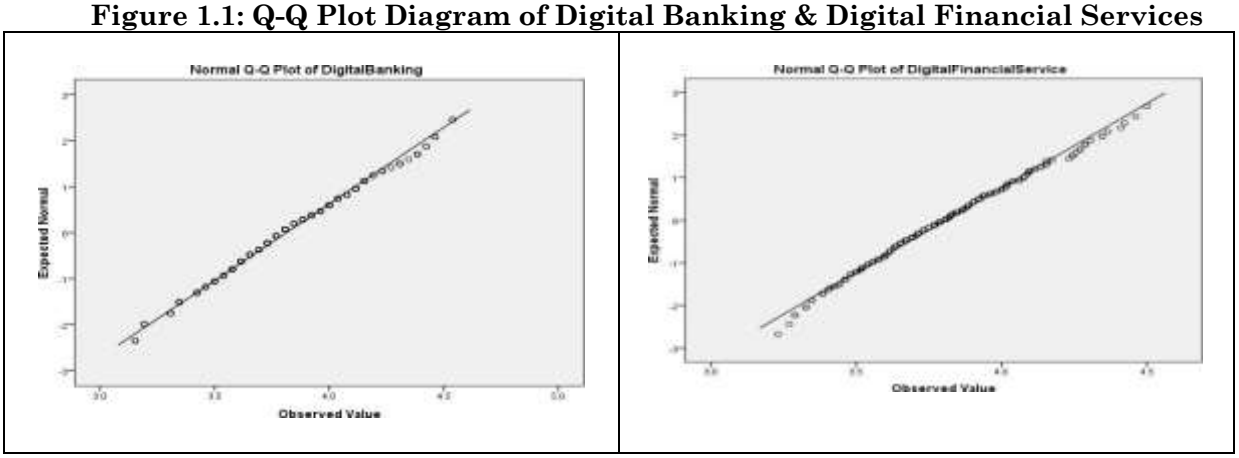
Hypothesis H1: Access significantly predicts the Digital Financial Inclusion.

Hypothesis H2: Usage significantly predicts the Digital Financial Inclusion.

Hypothesis H3: QualitysignificantlypredictstheDigitalFinancialInclusion.

In this study Analysis of Normality of the Data Checking Normality through Q-Q PLOT.

Figure 1.1: Q-Q Plot Diagram of Digital Banking & Digital Financial Services



Source: Survey

Q-Q Plot (Quantile-Quantile plot) helps in determining the normality of the data. In the Q- Q plot, if the data is normally distributed then the data point follows a diagonal straight line and if it is not normally distributed then the data falls away from the diagonal straight line (Field, 2009). The normality of the data using the Q-Q plot can be observed from figures 1.1

Sampling Technique and Sample Size: This study uses convenience sampling as a sampling technique. While the sample size required for the study was found to be 381, taking the confidence level to 95% with a 5% margin of error. Pre-testing of the questionnaire, results showed α >0.70 in 11 constructs, while it was less than 0.70 in only one case that is UsageDB.Thoughvaluesofα>0.60 or 0.70 are also acceptable(Griethuijsen, et al.,2014).

4. Discussion and Results

Multi collinearity Analysis- To check the multi collinearity between the latent constructs, two collinearity diagnostics are used: tolerance and variance inflation factor (VIF). critical values for tolerance and VIF are >0. 10 and <10 respectively. It can be observed that the value of tolerance for debit cards varies between 0.494 to0.788 and VIF varies between 1.268 to 2.023, thus multicollinearity is not a problem in the case of debit card. Tolerance and VIF for credit cards vary between 0.290 to 0.683 and 1.464to 3.454. For digital banking they vary between 0.340 to 0.756 and 1.323 to 2.944. For digital financial services, they vary between 0.359 to 0.745 and 1.342 to 2.787 respectively. Thus, based on the values of tolerance and VIF, it can be said that multi collinearity is not an issue for the debit card, credit card, digital banking, and digital

financial services. Confirmatory Factor Analysis (CFA)- In total there are 10 latent constructs, namely: Access DB, Usage DB, Quality DB. Access, Usage, and Quality are used as an indicator of Digital Financial Inclusion (DFI).

Table1.1 Descriptives&SRWoftheItemsofDigitalBanking

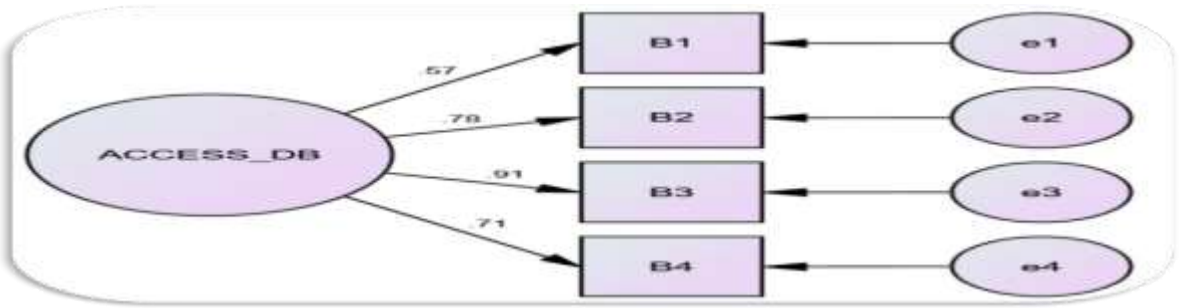
Variables	$\bar{x}$	S. D	Sk.	Kur.	SRW
Access DB(ADB)	3.718	.7262	-.487	-.025	
B1: Information provided by the bank regarding digital banking is relevant forms.	3.86	.789	-1.186	2.511	0.571
B2: The bank provides me with timely information regarding digital banking.	3.79	.894	-.838	.409	0.777
B3: The Bank provides me with complete information regarding digital banking.	3.65	.955	-.725	.023	0.913
B4: Bank provided me with the complete guide to using digital banking.	3.58	.920	-.529	-.328	0.713
Usage DB(UDB)	4.211	.5301	-.532	.879	
B5: I frequently use digital banking.	4.10	.743	-.860	1.116	0.548
B6: I found digital banking to a better option than cash.	4.15	.767	-1.019	1.695	0.758
B7: Digital banking provides me with the convenience to use it 24x7.	4.31	.663	-.925	1.675	0.721
B8: I think that I can enjoy the service of digital banking 24 hours.	4.29	.649	-.670	.829	0.567
Quality DB (QDB)	3.861	.6900	-.688	1.384	
B9: I believe that I am completely aware of of digital banking.	4.00	.790	-1.103	2.347	0.620
B10: I am satisfied with the process of digital banking.	3.98	.738	-1.104	2.643	0.845
B11: I am fully satisfied with digital banking.	3.91	.799	-.720	.715	0.910
B12: I believe that digital banking will assure me of an error-free transaction.	3.55	.995	-.619	.146	0.707

Source:Survey.Note:$\bar{x}$:Mean;S.D:StandardDeviation;Sk.:Skewness;Kur.:Kurtosis;SRW:StandardizedRegressionWeights

CFA model for Access Digital Banking

CFA (Figure 1.2) is conducted on the latent construct i.e., access DB, which consists of four items: B1: Information provided by the bank regarding the DB is relevant for me; B2: The Bank provides me with timely information regarding the DB; B3: The Bank provides me with complete information regarding the DB; B4: Bank provided me the complete guide to use DB.

Figure 1.2: CFA Model for Access-Digital Banking



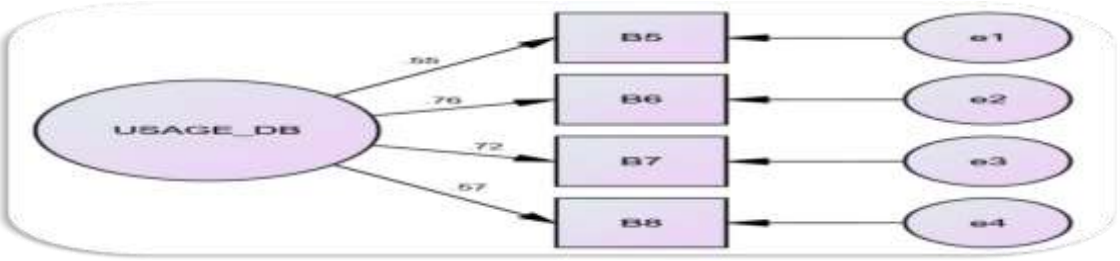
Source: Survey. Note: DB: Digital Banking; B1: Information provided by the bank regarding the DB is relevant for me; B2: The bank provides me with timely information regarding the DB; B3: The Bank provides me with complete information regarding the DB; B4: The Bank provides me the complete guide to use DB. Of these items were 0.571,

0.777, 0.913 & 0.713 respectively, which are greater than 0.50. This helps in establishing the convergent validity of the latent construct. While Composite/Construct Reliability (CR) (=0.837) & Cronbach's alpha (=0.831) were above 0.70 (table 1.1), which helps in establishing the reliability of the construct. Thus, this construct is both reliable and valid.

CFA modelforUsageDB

CFA (Figure 1.3) is conducted on the latent construct i.e., Usage DB, which consists of four items: B5: I frequently use DB; B6: I find DB a better option than cash; B7: DB provides me with the convenience to use it 24x7; B8:

Figure1.3: CFA Model for Usage- Digital Banking

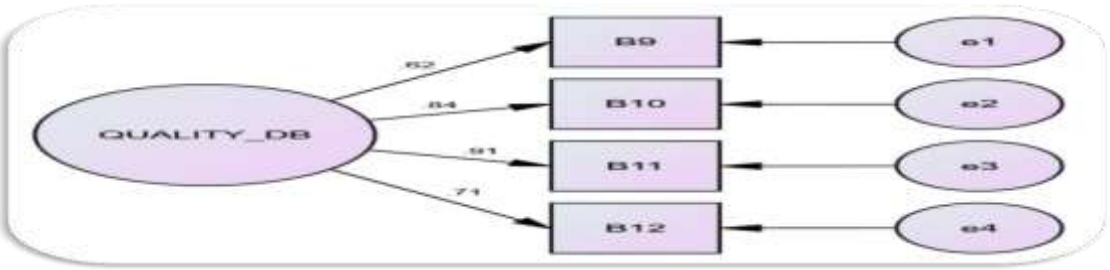


Source: Survey. Note: DB: Digital Banking; B5: I frequently use DB; B6: I find DB a better option than cash; B7: DB provides me with the convenience to use it 24x7; B8: I think that I can enjoy the service of DB 24 hours.

It is easy for me to see if I could benefit from the services offered by DB 24 hours. Items were 0.548, 0.758, 0.721 & 0.567 respectively, which are greater than 0.50. This helps establish the convergent validity of the latent construct. While Composite/Construct Reliability (CR) (=0.747) & Cronbach's alpha (=0.740) were above 0.70 (table 1.1), which helps in establishing the construct's reliability. This construct is both reliable and valid.

CFA model for Quality DB CFA (Figure1.4) is conducted on the latent construct i.e., QualityDB, which consists of four items: B9: I believe that I am completely aware of DB; B10: I am satisfied with the process of DB; B11: I am fully satisfied with DB; B12: I believe that DB will assure me of an error free transaction. items were 0.620, 0.845, 0.910 & 0.707 respectively, which are greater than 0.50. This helps in establishing the convergent validity of the latent construct. While Composite/Construct Reliability (CR) (=0.858) & Cronbach'salpha (=0.844) were above 0.70 (table 1.1), which helps in establishing the reliability of the construct. Thus, this construct is both reliable and valid.

Figure1.4:CFAModelforQuality-DigitalBanking



Source: Survey. Note: DB: Digital Banking; B9: I believe that I am completely aware of DB; B10: I am satisfied with the process of DB; B11: I am fully satisfied with DB; B12: I believe that DB will assure me of an error free transaction.

Table1.2: Regression Model Summary

Independent Variable	Dependent Variable	R	R2	Adjusted R2	Standard Error Of Estimate
ADB	ADFS	0.790	0.624	0.610	0.31794
URD	UDFS	0.583	0.340	0.321	0.41928
QDB	QDFS	0.593	0.351	0.336	0.35867

Source: Survey

Table 1.3: ANOVA Results in Case of Regression

Independent Variable	Dependent Variable	F	Sig. Value
ADB	ADFS	42.605	0.000
UDB	UDFS	17.810	0.000
QDB	QDFS	62.486	0.000

Source: Survey.

Table 1.4: One-Way ANOVA Output of Age- Digital Banking

Variable	Nature	Sum of Squares	df	Mean Square	F	Sig.	Remarks
ADB	Between Group	3.705	2	1.853	3.598	.029	Significant
	Within Group	108.644	211	.515			
	Total	112.350	213				
UDB	Between Group	.403	2	.201	.714	.491	Insignificant
	Within Group	59.467	211	.282			
	Total	59.869	213				
QDB	Between Group	.198	2	.099	.207	.813	Insignificant
	Within Group	101.228	211	.480			
	Total	101.427	213				

Source: Survey. Note: Grouping Variable (Age): 18-25, 26-49 and 50 & above

Table 1.5: One-Way ANOVA Output of Religion- DB

Variable	Nature	Sum of Squares	df	Mean Square	F	Sig.	Remarks
ADB	Between Group	1.079	2	.540	1.023	.361	Insignificant
	Within Group	111.270	211	.527			
	Total	112.350	213				
UDB	Between Group	2.269	2	1.135	4.156	.017	Significant
	Within Group	57.600	211	.273			
	Total	59.869	213				
QDB	Between Group	1.924	2	.962	2.040	.133	Insignificant
	Within Group	99.503	211	.472			
	Total	101.427	213				

*Source: Survey. Note: Grouping Variables (Religion): Hinduism, Muslims & Others

Table 1.6: One-Way ANOVA Output of Education- DB

Variable	Nature	Sum of Squares	df	Mean Square	F	Sig.	Remarks
ADB	Between Group	3.440	4	.860	1.650	.163	Insignificant
	Within Group	108.910	209	.521			
	Total	112.350	213				
UDB	Between Group	1.798	4	.450	1.618	.171	Insignificant
	Within Group	58.071	209	.278			
	Total	59.869	213				
QDB	Between Group	.368	4	.092	.191	.943	Insignificant
	Within Group	101.058	209	.484			
	Total	101.427	213				

Source: Survey. Note: Grouping Variables (Education): Up Higher Secondary (Class12th), Graduate, Post-Graduate, Diploma/Certificate/Professional Course and Higher Studies (M.Phil.,Ph.D. etc.).

Table 1.7: One-Way ANOVA Output of Occupation- DB

Variable	Nature	Sum of Squares	df	Mean Square	F	Sig.	Remarks
ADB	Between Group	3.305	3	1.102	2.121	.099	Insignificant
	Within Group	109.045	210	.519			
	Total	112.350	213				
UDB	Between Group	1.306	3	.435	1.561	.200	Insignificant
	Within Group	58.563	210	.279			
	Total	59.869	213				
QDB	Between Group	.839	3	.280	.584	.626	Insignificant
	Within Group	100.588	210	.479			
	Total	101.427	213				

Source: Survey. Note: Grouping Variables (Occupation): Employee, Self-Employed, Business and Not Employed/ Dependent/ Student.

Table 1.8: One-Way ANOVA Output of Income- Digital Banking

Variable	Nature	Sum of Squares	df	Mean Square	F	Sig.	Remarks
ADB	Between Group	3.396	6	.566	1.075	.378	Insignificant
	Within Group	108.953	207	.526			
	Total	112.350	213				
UDB	Between Group	2.028	6	.338	1.209	.303	Insignificant
	Within Group	57.842	207	.279			
	Total	59.869	213				
QDB	Between Group	3.699	6	.616	1.306	.256	Insignificant
	Within Group	97.728	207	.472			
	Total	101.427	213				

Source: Survey. Note: Grouping Variable (Income INR): 0-16000, 16000-32000, 32000-48000, 48000-64000, 64000-80000, 80000-96000, 96000 & above.

Table 1.9: T-Test Output of Gender- Digital Banking

Variable	Grouping Variable	Mean	Std. Deviation	t	df	Sig.	Remarks
ADB	Male	3.7302	.76263	.281	212	.779	Insignificant
	Female	3.7017	.67473	.288	200.447	.774	Insignificant
UDB	Male	4.2381	.55123	.879	212	.380	Insignificant
	Female	4.1733	.49908	.895	198.244	.372	Insignificant
QDB	Male	3.8889	.75137	.707	212	.480	Insignificant
	Female	3.8210	.59324	.737	208.764	.462	Insignificant

*Source: Survey.

Table 1.10: T- Test Output of Marital Status- Digital Banking

Variable	Grouping Variable	Mean	Std. Deviation	t	df	Sig.	Remarks
ADB	Married	3.7042	.79878	-.202	212	.840	Insignificant
	Unmarried	3.7255	.69030	-.192	123.187	.848	Insignificant
UDB	Married	4.1620	.53134	-.962	212	.337	Insignificant
	Unmarried	4.2360	.52973	-.961	139.402	.338	Insignificant
QDB	Married	3.8099	.56135	-.763	212	.446	Insignificant
	Unmarried	3.8864	.74631	-.838	178.866	.403	Insignificant

Source: Survey.

Conclusion

This finding suggests that digital finance access, usage, and quality are major predictors of digital financial inclusion. Thus, it can be claimed that digital financial inclusion is affected by three factors: 'Access', 'Usage' & 'Quality'. It should also be observed that, of the three factors, 'Quality' has the greatest influence on digital financial inclusion, followed by 'Usage' and 'Access'. This suggests that if a bank provides high-quality services to its consumers, individuals will use digital finance more and more. As a result, steps must be done to increase the quality of digital financial services (DFS), as higher quality will improve the access and application dimensions of digital financial inclusion. This will assist the economy in achieving greater digital financial inclusion.

This study further concludes that the situation of digital financial inclusion in the regions of Dakshina Kannada District is quite satisfactory. Also, the inclusiveness in the regions of Dakshina Kannada District is partially significant. To further improve the status of digital financial inclusion, measures must be taken to change the perceived image of DFS in the eyes of the public. This studysuggeststhatthe in Dakshina Kannada District., DFS is associated with higher risk because of all the items of perceived risk, which implies that most people weren't able to make their stance clear in case of perceived risk. Such a dilemma in the minds of the people can hamper the growth of the use of digital finance in Dakshina Kannada District. Also,the attitude of people towards DFS directly impacts digital financial inclusion, thus a negative and it will impact digital financial inclusion negatively, while positive result will impact digital financial inclusion positively.

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Role of E-Learning in NEP 2020 for Teacher Educators

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Introduction

The National Education Policy 2020 approved by the union cabinet of India on July 29, 2020. Currently, we are following the last education policy which was introduced in 1986 it means the past education policy is following since last thirty-four years. In present situation various drastic changes are happening in the world and technology is growing speedy and influencing to each sector. To make India "World Guru" we have to do needful changes in our education policy as well as education method. Teachers are giving education by the traditional methods in our country till date but it is not dynamic for student and teachers. The most objectives are to "Ensure that academics are given the highest quality of training in content, pedagogy and moving the teacher's education system into multidisciplinary faculties, universities and establishing the 4 years integrated B.Ed. offered by such multidisciplinary higher education institutes by 2030, become the minimal degree for college teachers". Now the time for use electronic communication technologies for improvement of teacher education in our country. E-learning usage for teacher educators in teaching process with various levels will become the main skill of this century.

Keywords: Revolution, NEP2020, Teacher educators, Implementation, E-Learning, ICT

Definition Ofterms

E-learning: The Internet-based technology has transformed traditional in-classroom learning to a new way of learning called E-learning skills. Defined by Dhimmar Shefali (2022). A learning system based on formalized teaching but with help of electronic resources is known as E-learning Defined by Economic Times.

NEP 2020: The National Education Policy of India 2020 (NEP 2020), which was started by the union cabinet of India on 29 July 2020, outlines the vision of new education system of India.

Teacher Educators: Teacher educators means professional educators who serve as the training arm of the teaching profession. They include higher education faculty and school-based practitioners who supervise field experiences, student teaching, and internships.

ICT: Information and Communications Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum.

Objectives Ofstudy

1. To find out the present status of E-Learning usage in B.Ed. colleges of Central Gujarat.
2. To explore the NEP 2020 of various provisions for E-Learning in teacher education.
3. To examine the challenges for implementation of E-Learning according to NEP 2020.
4. Suggestions for effective implementation of E-Learning for teacher educators.

Sample And Sampling Technique

50 Teacher educators from various B.Ed. colleges of central Gujarat which were divided into two age groups and they have participated in this study. The researcher used purposive sampling for data collection from Teacher educators.

Tools

A researcher used a self-prepared questioner for data collection. It contains mix-questions both close-ended and open-ended.

Data Collection

The researcher went to several B.Ed. colleges from central Gujarat and took the permission from principals for the study.

Data Analysis

The collected data were analysed frequency counting, percentage and qualitatively through content analysis of the data.

Table-1

No.	Age Group	Smart TV	Smart Phones	Laptops	Projectors	ICT Tools
1	27-45	7%	43%	21%	22%	7%
2	47-62	6%	53%	19%	18%	4%

Methodology

Some B.Ed. colleges in central Gujarat using E-Learning but some colleges and teacher educators can't. The researcher discussed on the various provisions of NEP 2020 in the relation with E-Learning to the teacher educators and suggestions are given based on the challenges for effective implementation of E-Learning.

Current Status Of E-Learning Usage In B.Ed. Colleges In Central Gujarat

Usage of E-Learning platform is one of the best way by which teacher educator can reach effectively to their trainees. In the E-Learning process where teacher can utilize ICT tools to get benefits of content, curriculum, assessment and instruction. To check the current status of E-Learning in central Gujarat's B.Ed. colleges the researcher checking the availability of educational technology related aids like smart phones, laptops, social media, PPTs or PDFs, projectors, tablets, smart televisions, ICT tools, internet services, e-books, Wi-Fi access are used for educational purpose. The researcher had selected respondents who were around age of 27 to 45 years and another age group of 46 to 62 of teacher educators from B.Ed. colleges of central Gujarat. In this study, researcher takes 25 respondents for both age group of teacher educators and took the permissions from the concern college authorities.

Figure1:

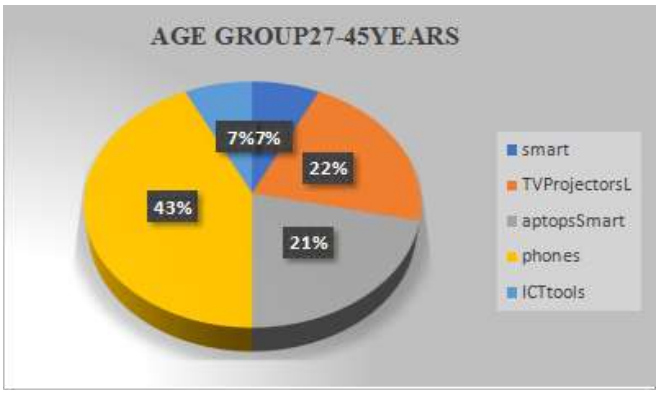
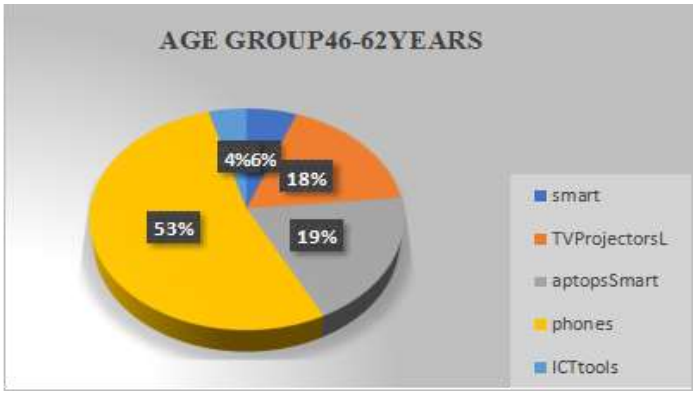


Figure2:



Various provisions Innep2020fore-Learning

1. The NEP 2020 recognizes digital platforms. Advantages of technology are focusing point of NEP 2020. In pandemic we felt the demand of E-Learning or online education also ICT based educational initiatives which were carefully designed.
2. According to NEP 2020 that educational Software will be available for both teachers and students and it is available for disable students and remote area's students. Setting of E-Content for teaching and learning developed by all states inter regional languages and by NCERT, CIET, CBSE, NIOS etc. will be uploaded on the DIKSHA platform.
3. According to NEP 2020, the use of E-Learning platform such as SWAYAM/ DIKSHA for online training of teachers will be encouraged to standardized within a short span of time.
4. The National Educational Technology Forum (NETF) will be created to provide a platform for free exchange of ideas on the use of E-learning assessment, planning, administration etc. for both school and higher education. It will also provide accurate data related to admissions, attendance, assessments etc.
5. NEP 2020 focused on the need of specialists to deliver high quality E-Learning, vibrant e-content, digital pedagogy and assessment e-governance etc. For pilot studies of online education NEP 2020 recognized agencies like NETF, CIET, NIOS, IGNOU, IITs, and NITs etc. They evaluate the benefits of integrating education.
6. Appropriate existing E-Learning platforms Such as SWAYAM will be extended to provide teacherswith a structured, User-friendly rich set of assistive tools for monitoring Progress of learners.
7. According NEP 2020 to create digital platforms, existing mass media such as television, radio telecast and broadcasts etc. and it should be made available for 24/7 in different regional languages.
8. According NEP 2020 existing E-Learning platforms will support for Creating virtual labs so that all student have equal access to quality practical and hands on experiment-based learning experiences.
9. To became high quality online Content Creator teachers themselves using online teaching platforms and tools.
10. Online assessment and examination:
11. Appropriate bodies, such as the proposed National Assessment center of PARAKH,

School boards, NTA etc. will design and implement assessment frameworks and analytics.

Challenges For Implementattion As Per Nep 2020

Some new challenges for preparing teacher-educators and future teachers are in need to adopt the new styles of learning method in the E-Learning process. Some of the main challenges for implementation of E-Learning in teacher institutions as per NEP 2020 areas follows:

1. Lack of basic knowledge for using E-Learning among teacher-trainees.
2. Lack of proper E-Learning equipment and full-fledged technology in schools and colleges.
3. Poor network connectivity and a smaller number of Wi-Fi access in huge camp uses.
4. Over crowded classrooms and shortage of instruments and latest technology.
5. Need to update ICT related courses in teacher education.
6. As per NEP 2020 lack of specialists and professionals to frame proper curriculum.
7. Lack of financial support from administrators, University departments and government.

Suggestions For Effective Implementation

E-Learning can empower teacher educators and learners in their achievement educationists, academics and policy makers are actively working to make our teaching learning system successful and some suggestions are as follows:

1. Teacher educators and teacher-trainees ratio should be maintained.
2. Institutions should provide latest E-Learning tools and instruments.
3. Course content should be re-structuring as per NEP 2020 and should be based on action oriented.
4. Internet access, LCD projector, computers, smart TV, e-whiteboards,

Proper ICT equipment's should be provided to the teacher education institutions.

5. Provide proper facilities of software and hardware to teacher educators and trainees by professional trainers and update them.
6. Teacher educators and teacher-trainees should be aware of the global teaching-learning modifications.

Conclusion

Teacher educator has key role in E-Learning process. E-Learning has potential to remove barriers of low rate of education and a smaller number of teachers as well as poor quality of education in our country. The NEP 2020 recognizes the importance of technology and carefully designed online/ digital education-based platform for educating all.

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